

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

4
5 VOLKSWAGEN GROUP OF AMERICA, INC.

6 Petitioner

7 V.

8 CARUCEL INVESTMENTS, L.P.

9 Patent Owner

10
11 Case No. IPR2019-01101

12 U.S. Patent No. 7,221,904

13 and

14 Case No. IPR2019-01105

15 U.S. Patent No. 8,718,543

16
17 VIRTUAL DEPOSITION OF MARK R. LANNING VOLUME 1

18 Thursday, June 4, 2020

19
20 Job No.: 300800

21 Pages: 1 - 219

22 Reported by: Judith E. Bellinger, RPR, CRR

1 Deposition of MARK R. LANNING, conducted
2 virtually.
3
4
5
6
7
8
9
10

11 Pursuant to notice, before Judith E.
12 Bellinger, Registered Professional Reporter,
13 Certified Realtime Reporter, and Notary Public in
14 and for the State of Maryland.
15
16
17
18
19
20
21
22

1 A P P E A R A N C E S

2 ON BEHALF OF THE PETITIONER:

3 RYAN C. RICHARDSON, ESQUIRE

4 STERNE, KESSLER, GOLDSTEIN & FOX

5 P.L.L.C.

6 1100 New York Avenue NW

7 Washington, D.C. 20005

8 202.772.8729

9

10 ON BEHALF OF THE PATENT OWNER:

11 ELVIN E. SMITH, ESQUIRE

12 LAW OFFICES OF ELVIN E. SMITH, PLLC

13 307 Dartbrook

14 Rockwall, TX 75087

15 972.722.2475

16

17 SANFORD E. WARREN, ESQUIRE

18 WARREN | RHOADES LLP

19 1212 Corporate Drive

20 Suite 250

21 Irving, TX 75038

22 972.550.2955

1 A P P E A R A N C E S C O N T I N U E D

2

3 ALSO PRESENT:

4 Bridgette Rast, AV Technician

5 Charles D. Gavrilovich

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

C O N T E N T S

EXAMINATION OF MARK R. LANNING PAGE

By Mr. Richardson 6

E X H I B I T S

(Attached to the transcript)

Lanning Deposition Exhibits: PAGE

Exhibit 1 Declaration 7

Exhibit 2 United States Patent 5,559,865 9

Exhibit 3 United States Patent 5,289,527 39

Exhibit 4 United States Patent 7,221,904 B1 64

Exhibit 5 United States Patent 5,504,935 117

Exhibit 6 United States Patent 5,566,209 176

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

2 MARK R. LANNING,

3 having been duly sworn, testified as follows:

4 EXAMINATION BY COUNSEL FOR THE PETITIONER

5 BY MR. RICHARDSON:

6 Q Good morning, Mr. Lanning.

7 How are you?

8 A Doing fine, thanks.

9 Q Good. Here we are on day three,
10 hopefully we can continue to streamline this
11 process each day as we go along.

12 So today do you understand that you are
13 here to provide testimony regarding the
14 declaration that you submitted in relation to the
15 patent that is numbered 7,221,904?

16 A Yes.

17 Q Okay. Great.

18 And just so that the record is clear,
19 we went over a number of the guidelines and rules
20 and procedures for these remote depositions in our
21 previous days of depositions, correct?

22 A In the first day, yes.

1 Q Okay. And you understand that those
2 guidelines that we set forth and agreed to in day
3 one will equally apply here, correct?

4 A Yes.

5 Q Okay. So let's begin by taking a look
6 at the declaration that you submitted for the '904
7 patent.

8 I believe you should have a physical
9 copy of that.

10 MR. RICHARDSON: And if we could also,
11 please, pull a version of that up on the screen,
12 that would be Mr. Lanning's expert declaration
13 involving U.S. Patent No. 7,221,904.

14 (Discussion held off the record.)

15 (Lanning Exhibit 1 marked for
16 identification and attached to the transcript.)

17 MR. RICHARDSON: If we can slightly
18 zoom out of that so the entire first page is
19 shown.

20 Q So Mr. Lanning, similar to what we did
21 the last couple days, if you could take a look
22 through the physical copy of your declaration for

1 the '904 patent and just kind of leaf through and
2 make sure there's no obvious highlightings,
3 markings, or notes, please.

4 AV TECHNICIAN: Counsel, would you like
5 me to give him remote control?

6 MR. RICHARDSON: No. He's got a
7 physical copy. We'll be okay.

8 AV TECHNICIAN: Okay.

9 A It's clean.

10 Q Okay. Great.

11 And just if you can reference the last
12 page of that declaration and confirm that that is
13 your signature and date.

14 A Yes, it is.

15 Q Okay. Great.

16 And you understand that this
17 document -- or let me rephrase the question.

18 You agree that this document contains
19 your true and correct testimony regarding U.S.
20 Patent No. 7,221,904, correct?

21 A Yes.

22 Q And sitting here today are there any

1 errors or other corrections that you know that
2 need to be made to this particular document?

3 A Not that I'm aware of.

4 Q Okay. So you can hold on to that.
5 Keep that handy.

6 MR. RICHARDSON: If we can pull down
7 this particular document from the screen, please.

8 Q And Mr. Lanning, if you want to also
9 grab your physical copy of Gilhousen '865.

10 MR. RICHARDSON: And if we can also,
11 please, pull up a copy of the Gilhousen patent,
12 patent number ending in 865 on the screen, please.

13 (Discussion held off the record.)

14 (Lanning Exhibit 2 marked for
15 identification and attached to the transcript.)

16 MR. RICHARDSON: And so if we can pull
17 that particular document, the cover page, on the
18 screen as well.

19 Q And while that's being brought up,
20 Mr. Lanning, same thing, if you can just flip
21 through Gilhousen very quickly and see if you
22 notice any obvious highlightings, markings, or

1 notes.

2 A It's clean.

3 Q Okay. Great.

4 And the copy that you have in front of
5 you appears to match at least the cover page of
6 the document that's on the screen, correct?

7 A They appear to be the same document.

8 Q Okay. Great.

9 MR. RICHARDSON: We can pull this
10 document down from the screen as well, thank you.

11 Q So Mr. Lanning, we discussed this
12 particular reference a number of times in the last
13 two days, correct?

14 A Yes.

15 Q Okay. And I believe as part of that
16 discussion we came to an agreement that at least
17 in one embodiment this particular reference
18 discloses an airborne repeater, correct?

19 A One embodiment is for an airborne
20 repeater in Gilhousen '865.

21 Q Okay. And does Gilhousen '865 airborne
22 repeater have the ability to service multiple

1 radiotelephones?

2 A The airborne repeater in Gilhousen '865
3 is capable of communicating with multiple
4 radiotelephones in the airplane.

5 Q Okay. And one of those -- let me
6 rephrase.

7 And as part of that servicing of
8 multiple radiotelephones, the airborne repeater
9 relays incoming signals to the correct
10 radiotelephone, correct?

11 A When a signal is received by the
12 airborne repeater from a ground station, it is
13 encoded with a CDMA code and transmitted for one
14 of the radiotelephones in the airplane. And if
15 the radiotelephone in the airplane is on and
16 operating properly or correctly, then it would
17 receive that signal.

18 Q Okay. And so is another way to phrase
19 that particular functionality that the airborne
20 repeater can route the incoming calls to the
21 correct radiotelephone?

22 A It's based on a condition. If the --

1 well, it depends on what embodiment now. We have
2 to be careful with the different embodiments that
3 are here. There's two different embodiments.

4 In the second embodiment, where the
5 repeater station is performing like a cellular
6 base station, then the repeater station, or the
7 invention of Gilhousen, acting as an airborne base
8 station registers the phone with the cellular
9 network. And so then the cellular network would
10 know the location of the Gilhousen invention.

11 And so any incoming calls to the
12 aircraft would then go to the airborne base
13 station, and the airborne base station would relay
14 that call or relay a signal with a specific code
15 to a radiotelephone in the airplane. Again,
16 assuming the radiotelephone in the airplane is on
17 and operational then that phone should receive the
18 incoming call.

19 Q I believe from our discussion in the
20 previous days of Gilhousen '865, you indicated
21 that the airborne repeater also registers the
22 radiotelephones with the network, correct? And if

1 it helps, maybe Column 3, Line 15.

2 A Column -- you're pointing me to the
3 Column 3, Line 15. But Column 3, Line 3 starts
4 with the words "In an alternate embodiment, the
5 radiotelephone signal repeater is replaced by an
6 airborne base station."

7 So that's what I was referring to is
8 the functionality that's being described on
9 Line 15 is where the repeater is acting as an
10 airborne base station.

11 Q So it's your opinion that the sentence
12 in Column 3, Line 15, where it says, "The process
13 begins by the airborne repeater registering the
14 radiotelephone with the nearest cell," they
15 actually mean the alternative embodiment where
16 it's replaced by an airborne base station?

17 A Yes. That's the context of where this
18 paragraph's at. That's how I interpret it.

19 Q So then if we proceed down that column,
20 and still in Column 3, Line 65, where it begins to
21 refer to the alternative embodiment, and
22 specifically discusses "the airborne repeater is

1 replaced by a base station-type unit that
2 registers the radiotelephone aboard the aircraft,"
3 it's your opinion that that disclosure is
4 redundant of the disclosure in Column 3, Line 15?

5 A Yeah. It gets a little confusing to me
6 as Column 3 talks back and forth between the
7 alternate embodiment and the initial embodiment.

8 So if I can clear up what I said
9 earlier. So the beginning of Column 3 in Line 3
10 starts with the words "An alternate embodiment,"
11 and then that paragraph finishes. And then it
12 switch -- the patent is switching back to the
13 initial, or the original embodiment where the
14 invention is an airborne repeater.

15 And then in Line 15 the -- where the
16 invention is operating as an airborne repeater, it
17 registers the radiotelephone with the nearest cell
18 site, and this is accomplished in the same manner
19 as a terrestrial radiotelephone registers with the
20 ground based radiotelephone system.

21 And so I believe it's referring here
22 and that's when it's acting as a repeater, it's

1 registering with a radiotelephone system and not a
2 cellular system.

3 Q So if it's your testimony that
4 Column 3, Line 15 is referring to, I believe you
5 said the alternate embodiment where it's the
6 airborne base station, correct?

7 A I'm using the words of the Gilhousen
8 '865 patent when it describes the alternate
9 embodiment. And we may need to probably agree on
10 how we want to refer to the other embodiment or
11 the preferred embodiment.

12 Maybe -- I think the patent even
13 actually refers to the first embodiment as the
14 "preferred embodiment," if I remember correctly.

15 But to answer your question, Column 3,
16 Line 3 starts with the words "In an alternate
17 embodiment," and that's where the invention, where
18 it says specifically, "The radiotelephone signal
19 repeater is replaced by an airborne base station."

20 Q Okay. So then is it your testimony
21 that in the embodiment that deals with the
22 airborne repeater, that that airborne repeater

1 cannot register the mobile -- or excuse me -- the
2 radiotelephones with the network?

3 A No, that's not correct.

4 As it starts in Line 15, it's
5 describing that when the invention -- and I'll
6 refer to it as the "preferred embodiment" -- just
7 so the record's clear, I'll refer to the two
8 different embodiments that are disclosed by
9 Gilhousen '865 as the "preferred embodiment" and
10 the "alternate embodiment." And I believe that's
11 the terms the patent also uses.

12 But in the preferred embodiment, which
13 is on Line 15, that's describing the functionality
14 of the preferred embodiment, starting in Line 15
15 of Column 3, where it refers to "the airborne
16 repeater registering the radiotelephone with the
17 nearest cell site 301," it's referring to the
18 repeater registering the radiotelephone with the
19 ground based radiotelephone system.

20 Q Okay. So then it's your testimony that
21 the airborne repeater in Gilhousen '865 can in
22 fact register the radiotelephones with the ground

1 base station?

2 A You'll have to do it again. Your
3 question broke up in the middle.

4 Q So then if I understand your testimony
5 correctly, you are saying that the airborne
6 repeater in Gilhousen '865 can in fact register
7 the radiotelephones with the ground base station?

8 A Okay. Now, you're using the term
9 "radio repeater." Just to be clear for the
10 record, when you say "radio repeater," are you
11 referring to the preferred embodiment or the
12 alternate embodiment?

13 Q Well, they use two different terms,
14 so -- but going by your preferred and alternate
15 embodiment characterization, Gilhousen '865 says
16 that the preferred embodiment has an airborne
17 repeater, and says that the alternative embodiment
18 has an airborne base station.

19 So I am referring to the preferred
20 embodiment having an airborne repeater and I'm
21 asking you can that airborne repeater register the
22 radiotelephones with the ground base station?

1 A The radiotelephone, as in the preferred
2 embodiment, as it says in Column 3, Line 15, the
3 radiotelephone -- or sorry. Again, let me start
4 over. I got that wrong.

5 The airborne repeater registers the
6 radiotelephone with the nearest cell site.

7 So in answer to your question, the
8 airborne repeater is doing the registering on
9 behalf of the radiotelephone with the nearest cell
10 site.

11 Q Okay. Thank you. And just so that I'm
12 clear, then, it is now your understanding that
13 Line -- excuse me -- Column 3, Line 15, that you
14 were just reading from, refers to the preferred
15 embodiment having the airborne repeater and not
16 the alternative embodiment having the airborne
17 base station, as you previously testified,
18 correct?

19 A That's correct. That's why I
20 corrected. The Column 3 switches back and forth.

21 Q Okay.

22 A And so for Column 15 -- or sorry --

1 Column 3, Line 15, that paragraph's referring to
2 the airborne repeater as in the preferred
3 embodiment, and then it switches back to the
4 alternate embodiment starting at Line 65.

5 I haven't looked at the lines in
6 between, but I know there's at least a switch
7 there. So it switches at least three different
8 times back and forth between the alternate
9 embodiment and the preferred embodiment.

10 Q Okay. Great. Thank you for that
11 clarification.

12 We can -- I want to turn you back to
13 your declaration now.

14 A All right.

15 Q And particularly Paragraph 78.

16 A Okay. I'm there.

17 Q Great.

18 And so the first line of that paragraph
19 on Page 43, that reads, "In other words, a
20 repeater does not include cellular capability of a
21 'moving base' station because it does not at
22 least," and then you list three different factors

1 here, correct?

2 A I'm sorry. I'm making sure I'm reading
3 from -- tell me which paragraph you're reading
4 from again.

5 Q Paragraph 78.

6 A Oh. And you're reading from the top of
7 Page 43?

8 Q Correct. Yeah.

9 A Okay. I'm with you now. Sorry.

10 Q No problem. So I'll repeat the
11 question.

12 In this particular paragraph it states,
13 "In other words, a repeater does not include
14 cellular capability of a 'moving base station'
15 because it does not at least," and then you go on
16 to list three different factors, correct?

17 A Yes.

18 Q Okay. And if we look at Factor 1, you
19 include as a reason why a repeater does not have
20 cellular capability as it lacks the ability to
21 facilitate registration, correct?

22 A The words "facilitate registration" are

1 part of the sentence. But taking in full context
2 of the sentence it's "route calls and messages
3 between a fixed base station and a moving mobile
4 station to facilitate the registration, making
5 calls and receiving calls at the moving mobile
6 station."

7 Q So do you disagree with Gilhousen '865,
8 the portions that we have just been referring to,
9 do you disagree that Gilhousen '865's airborne
10 repeater facilitates communications between a
11 fixed base station and a moving -- and the moving
12 stations on the plane?

13 A I'm confused because you're asking me
14 to read part of my paragraph, specifically to
15 No. 1, and you're asking me a very different
16 question than what I'm stating in 1.

17 Are you asking me about No. 1 or are
18 you asking me about a different question that you
19 used very different words?

20 Q I'm asking you about No. 1.

21 Is it your testimony that Gilhousen
22 '865's airborne repeater cannot route calls and

1 messages between a fixed base station and a moving
2 base station to facilitate the registration making
3 calls and receiving calls at a moving mobile
4 station?

5 A Gilhousen '865 does not disclose this
6 because the facilitating of the registration. For
7 Gilhousen '865 to disclose No. 1, at least part of
8 No. 1, the moving mobile base station would need
9 to receive the registration request from the phone
10 and then relay that request to the base station.

11 As we read for both of the embodiments
12 of Gilhousen '865, the phone does not initiate the
13 registration in the preferred embodiment of
14 Gilhousen '865, the repeater initiates the
15 registration on the radiotelephones they have.
16 And the same for the alternate embodiment where
17 the base station initiates the registration on the
18 radiotelephones they have.

19 These registration requests, in
20 short -- or let me stop. In summary, both
21 registration requests originate at either the
22 repeater or the base station, Gilhousen '865, and

1 are not the result of a registration message
2 coming from the radiotelephone.

3 Q So is it your testimony that when
4 Gilhousen's -- excuse me -- Gilhousen '865's
5 airborne repeater initiates the registration
6 process, that is not a form of facilitating the
7 registration?

8 A No. Because it says "route calls and
9 messages between a fixed base station and moving
10 mobile base station to facilitate" -- sorry -- "to
11 facilitate the registration, making calls and
12 receiving calls at a moving mobile station."

13 Again, the registration for a moving
14 base station, the registration request needs to
15 come from the cellular phone and then be relayed
16 by the moving base station and not the way that
17 Gilhousen '865 describes it where both the
18 repeater in the preferred embodiment and the base
19 station in the alternate embodiment, both initiate
20 the registration on behalf of the radiotelephone
21 and do not receive a registration request from the
22 radiotelephone.

1 So those requirements, or this
2 requirement would make No. 1 -- I'm trying to
3 figure out the best way to say it.

4 So the requirement of being -- of
5 needing to receive a registration request from the
6 radiotelephone means that No. 1 is not met.

7 Q Okay. So if we look at Gilhousen '865,
8 Column 3 again, and particularly Line 57, 5-7, it
9 states that "This enables the radiotelephones to
10 search for the strongest pilot signal of the next
11 cell and register with that base station."

12 Is it your opinion that this is not an
13 example of the radiotelephones being involved in
14 your registration process?

15 A This is not an example of the
16 registration process because now we're now moved
17 to a different part of Column 3 that's referring
18 to handoff capability. And that's not what I'm
19 referring to.

20 Now you're changing the subject and the
21 registration here. Again, the registration's
22 performed, as it says clearly, for both

1 embodiments starting that "the airborne repeater
2 registers the radiotelephone with the nearest cell
3 site."

4 In Line 65, "In the alternate
5 embodiment, the airborne repeater is replaced by a
6 base station-type unit that registers the
7 radiotelephone aboard the aircraft."

8 In both embodiments, either the
9 airborne repeater or the airborne base station,
10 both do the registering as I've been referring to
11 for -- and as I refer to in at least Paragraph 78
12 of my declaration, on behalf of the
13 radiotelephone. It is not initiated by the
14 radiotelephone.

15 Q Okay. So I think we can both agree
16 that the sentence that I read starting at
17 Column 3, Line 57, that particular paragraph is
18 describing a process from a reference called
19 "Tiedemann," correct?

20 A The word Tiedemann is used there, and
21 it also said, "Once the aircraft reaches the
22 fringe of the present cell site, the

1 radiotelephone begins the hand-off process
2 described in Tiedemann."

3 So it's referring to the handoff
4 process described in Tiedemann.

5 Again, that's different than the
6 registration process that's described in Column 3,
7 Line 15, or in Column 3, Line 65.

8 Q Okay.

9 A Again, now we're talking about the
10 handoff process, not the initial registration
11 process.

12 Q Okay. So then just to confirm, it is
13 your testimony that Tiedemann, as explained here,
14 discloses a handoff process, correct?

15 A I agree, like I just read the sentence
16 which says, "Once the aircraft reaches the fringe
17 of the present cell site, the radiotelephone
18 begins the hand-off process described in
19 Tiedemann."

20 However, I go into detail of my
21 analysis of Tiedemann, of what Tiedemann
22 discloses.

1 Let me go to that section. I describe
2 Tiedemann, and we'll probably go into more detail
3 here, but I describe it in multiple paragraphs but
4 I think the most relevant paragraph is where I
5 describe Tiedemann as not described -- it does not
6 disclose a handoff.

7 So as I look at Gilhousen '865, it
8 says, "Once the aircraft reaches the fringe of the
9 present cell site, the radiotelephone begins the
10 hand-off process described in Tiedemann."

11 And I said, okay, I'll go to Tiedemann
12 and read and understand what the handoff process
13 is.

14 And as I've described, Tiedemann is
15 only determining, and only describes determining
16 when a -- well, let me just not paraphrase, I'll
17 just state it. And I'm reading from Paragraph 95
18 of my declaration.

19 "The invention disclosed by Tiedemann,
20 cited by Gilhousen '865, is not the hand-off
21 method. Instead, as the title states, Tiedemann
22 is based on a mobile communications device

1 registration method. In fact, Tiedemann does not
2 use the words handoff, hand-off," hyphenated,
3 'handover or hand-over," hyphenated. Instead,
4 Tiedemann discloses an invention with multiple
5 embodiments where the mobile station registers
6 with a new cell in the network when it moves a
7 predetermined distance from the cell that it is
8 currently registered with. This is not a
9 hand-over or a hand-off because no voice or data
10 connection is moving from the current cell to the
11 new cell. Instead, the mobile station is just
12 sending an update of its location to the network.
13 Additionally, if a new cell is not available, the
14 mobile will not be able to update its location
15 with the network as disclosed with."

16 And I won't read the quote. We can go
17 into it.

18 Q Right.

19 A Again, the process that's being
20 referred to in Gilhousen '865 is referred to
21 clearly by Gilhousen '865 as a handoff capability,
22 but it says it -- I think the key words here in

1 Gilhousen '865, after I read Tiedemann and
2 analyzed Tiedemann, I realized what Gilhousen '865
3 is referring to with the sentence "Once an
4 aircraft reaches the fringe of the present cell
5 site, the radiotelephone begins the hand-off
6 process described in Tiedemann."

7 And the key words here is it "begins
8 the hand-off process," and that's where Tiedemann
9 is describing just determining which cell it can
10 connect to and registering with that cell. But
11 Tiedemann does not describe any handoff process.
12 It's only --

13 Q Okay.

14 A Tiedemann is only describing the idea
15 of a cell phone scanning for possible new cell
16 sites to use.

17 Q Okay. So several questions ago when I
18 directed you to Column 3, Line 57, and had you
19 read that particular sentence, your response to me
20 was, "This is not referring to the registration
21 process. This is referring to the handover
22 procedure."

1 And now your testimony here is that
2 Tiedemann, being discussed in this paragraph, does
3 not disclose handover.

4 So my question to you is very simple,
5 is whether the sentence in Column 3, Line 57 is
6 referring to a registration process or referring
7 to a handover process?

8 MR. SMITH: Objection. Form.

9 A Okay. So, again, let me go through
10 this. The difficulty here is understanding the
11 different types of updates that a cell phone makes
12 with a cellular network.

13 One is a registration process where the
14 phone registers its identification with the
15 network so that the network knows what base
16 station is serving that. That registration
17 process that's done as an initial registration
18 process that verifies whether the phone is -- it's
19 more than just the phone saying I'm here, it's a
20 validation of the phone is, No. 1, capable of
21 operating with the current network that it's
22 attempting to register with and that the phone

1 subscription is in good standing. So if a phone
2 tries to register with a network and the
3 subscriber hasn't paid their bill, the network can
4 reject that registration.

5 That registration process of the
6 initial registration process is defined beginning
7 in Line 15 of Column 3 with -- for the airborne
8 repeater, the preferred embodiment, and it's
9 described again on Column 3, Line 65, for the
10 alternate embodiment of a base station type unit.

11 What's referred to in 57 is the handoff
12 process in Tiedemann. And what's used there is a
13 registration or it registered, as Tiedemann
14 describes in detail, this is what's typically
15 referred to these days as a location update. And
16 this is what's being specifically described.
17 Because what's happening here is that the cell
18 phone has already registered as Tiedemann and
19 Gilhousen say, and it's connected with a current
20 cell. It then does an update, a location update
21 with a new cell, and that's different than the
22 registration that's being described starting on

1 Column 3, Line 15 and Line 65.

2 Q So it's your opinion that when a system
3 travels to a new cell and begins its
4 communications with a new cell, registration with
5 that new cell is not needed?

6 A The Gilhousen '865 patent in Column 2
7 says that it's in regard to "A typical CDMA
8 radiotelephone system is discussed in greater
9 detail in U.S. Patent No. 4,901,307."

10 So this, again, is referring back to
11 the IS-95 CDMA system. It's a cellular system, it
12 has a system standard.

13 And what I can show you very clearly in
14 this IS-95 system standard is that after a
15 radiotelephone, or in this case the -- either the
16 repeater or the airborne base station registers
17 the phone with the network, it does not -- it
18 doesn't need to register again when it just
19 switches cells within the network; it merely needs
20 to do a location update.

21 And as I further explain for Tiedemann,
22 a call doesn't even need to be in place for

1 Tiedemann. And, again, I guess I think I feel
2 like I need to describe the operation of an IS-95
3 CDMA network. IS-95 CDMA network tracks a mobile
4 phone regardless if the mobile phone is active on
5 a call or a data connection. So as the mobile
6 phone, if a person drives down a freeway, the CDMA
7 network updates the location of that phone for the
8 cell that's serving it even though the person's
9 not using the cell phone, sitting on the seat of
10 the car and the person not using it, but the
11 network continually updates the location and
12 tracks the phone. That's what Tiedemann is
13 referring to is this location updating where the
14 cell phone does the location update as it moves
15 from one cell to the other.

16 Q Okay.

17 A And Gilhousen says it starts the
18 handover process -- Tiedemann is only talking
19 about the initial step of being able to find a new
20 cell. That's the start of the handover process,
21 but Tiedemann doesn't describe anything about the
22 handoff.

1 Q Okay. So let me ask it a different
2 way.

3 You would agree that the reason that
4 Gilhousen '865 cites -- the reason that it cites
5 to Tiedemann is for its registration system,
6 correct?

7 A Can I -- if I can interrupt you. I
8 lost you the whole first question. As a matter of
9 fact, you're frozen so we'll need to start over.

10 Q Okay. Do you agree that the reason
11 that Tiedemann is cited in Gilhousen '865 is for
12 its registration system?

13 A No. The reason why Tiedemann is
14 referenced by Gilhousen '865, as Gilhousen '865
15 says, it begins the handoff process. The
16 beginning or the first step of the handoff
17 process, as disclosed by Tiedemann, is to search
18 for a possible new cell and if that new cell is
19 found, perform a location update with that cell.

20 It is not a registration process. It
21 is a location update. As I said earlier, the
22 registration has already been completed for both

1 embodiments starting at Line 15 of Column 3 and
2 6 -- Line 65 of Column 3.

3 Q Okay.

4 A I understand the word -- I understand
5 the word registration is used by Tiedemann, as I
6 look at the -- the Tiedemann reference was filed
7 in 1991.

8 Q Excuse me. Mr. Lanning, we haven't
9 introduced the Tiedemann reference into the record
10 so I would ask that --

11 A Well, you haven't introduced it but you
12 sure asked me about it, and you've asked me about
13 what is referenced. And so why I want to complete
14 the question is, is to explain the terminology was
15 used that initially for IS-95 or before IS-95
16 became a standard, the terminology used to be
17 referred to as registering when a new cell -- when
18 a mobile phone moved to a new cell. Since then
19 it's been corrected to even remove the confusion
20 that it's referred to now as the location update.

21 Q Okay. So quick side note.

22 MR. RICHARDSON: Elvin, if you could

1 please remove any physical copies of exhibits that
2 are not yet of record in this deposition from in
3 front of Mr. Lanning. If he needs a particular
4 document we can get it for him, but I want it on
5 the record as to what he's referring to.

6 A Okay. Well, why don't we start back
7 with your question regarding Tiedemann and then
8 I'll say I need to see Tiedemann to answer that
9 question. So I'm going to go back on the record
10 and say if you're insisting I don't look at
11 Tiedemann until you mark it, then if you're asking
12 me questions about Tiedemann, let's just simply
13 mark Tiedemann now before I answer any more
14 questions regarding anything about Tiedemann.

15 Q Thank you, Mr. Lanning, but I was
16 speaking to Elvin.

17 MR. RICHARDSON: Elvin, if you don't
18 mind, can you please confirm that any documents
19 that are not of record are not in front of
20 Mr. Lanning.

21 MR. SMITH: They're off to the side
22 now.

1 MR. RICHARDSON: Great. Thank you.

2 BY MR. RICHARDSON:

3 Q All right. So Mr. Lanning, my previous
4 question, and let me see if I can find it because
5 it was a while ago in the transcript now. So I
6 asked you, "Do you agree that the reason that
7 Tiedemann is cited in Gilhousen '865 is for its
8 registration system?"

9 And you answered, "No."

10 And so I would like to direct your
11 attention to Paragraph 98 of your declaration.
12 And in Paragraph 98 you say, "the reasons that
13 Tiedemann" -- excuse me -- "the reasons that the
14 Tiedemann patent was cited for its registration
15 system in Gilhousen865."

16 Is that an accurate statement?

17 A I also include at least one of the
18 reasons that Tiedemann patent was cited in
19 Paragraph 98.

20 Before I can answer any more questions
21 regarding Tiedemann, I need to see the Tiedemann
22 reference.

1 Q I'm just asking about your testimony in
2 Paragraph 98.

3 Do you stand by the statement that "at
4 least one of the reasons that the Tiedemann patent
5 was cited was for its registration system in
6 Gilhousen865"?

7 A Before I can answer any questions
8 regarding the Tiedemann patent, I would like to
9 look at the Tiedemann patent.

10 Q So the Tiedemann patent may cause you
11 to change your testimony in Paragraph 98?

12 MR. SMITH: Objection. Form.

13 A That totally misrepresents what I'm
14 saying. I'm saying you're asking me a question in
15 Paragraph 98 where I'm referring to the Tiedemann
16 patent. I need to look at the Tiedemann patent to
17 answer your question.

18 Q Okay. If it's necessary to figure out
19 whether you agree with the language in
20 Paragraph 98, we can provide you with the
21 Tiedemann reference.

22 If you would like the grab the

1 Tiedemann reference, you may do so.

2 MR. RICHARDSON: And if we can please
3 bring the Tiedemann reference up on the screen.
4 And if we can please mark that as Deposition
5 Exhibit No. 3.

6 (Discussion held off the record.)

7 (Lanning Exhibit 3 marked for
8 identification and attached to the transcript.)

9 MR. SMITH: Ryan, when you get to a
10 good spot, I think Mr. Lanning is about ready for
11 a break. You can continue where you are, but I'm
12 just giving you a heads-up.

13 MR. RICHARDSON: Understood.

14 Q So Mr. Lanning, while that document is
15 being marked and being brought up on the screen,
16 if you can take a look through, to the extent that
17 you have not already done so, and confirm that
18 there are no markings, highlights, or notes in
19 this document.

20 A It's clean.

21 Q And can you confirm that, at least
22 based on the cover page, the document that you

1 have is the same document that's on the screen?

2 A It appears to be.

3 Q Okay. So now that you have the --

4 MR. RICHARDSON: If we can pull down
5 the Tiedemann reference from the screen, please.

6 Q And Mr. Lanning, now that you have the
7 Tiedemann reference in front of you, I'll ask the
8 question again, which is, do you agree with the
9 statement in Paragraph 98 of your declaration that
10 "at least one of the reasons that the Tiedemann
11 patent was cited is for its registration system in
12 Gilhousen865"?

13 A I stand by my opinion in Paragraph 98
14 with the clarification that the Tiedemann patent
15 cited for its registration system is not the
16 registration defined by Gilhousen '865 beginning
17 in Line 15 of Column 3 and for the alternate
18 embodiment of Gilhousen '865 beginning at
19 Column 3, Line 65.

20 The registration system that's defined
21 in the Tiedemann patent is referred to now as a
22 location update. The Tiedemann patent goes back

1 to 1991, which is the very early days of the IS-95
2 standard when it was being drafted, and now that
3 terminology has been changed in the standard to a
4 location update.

5 So I could say in my mind I probably
6 should have -- reading this paragraph, I should
7 have said cited for its registration system and in
8 parens location update. And that's what the whole
9 Tiedemann patent is in regard to is location
10 updates for a cell phone whether it's in use or is
11 not in use.

12 Q So the whole purpose of Tiedemann, as
13 you've described it, which is the location updates
14 for a cell phone, despite that being its whole
15 purpose, Gilhousen '865, when it discusses
16 Tiedemann, does not discuss location updates and
17 only discusses what he calls a handoff process and
18 an ability to register with a base station,
19 correct?

20 A Reading specifically from Gilhousen
21 '865 Column 3, Line 52, "Once the aircraft reaches
22 the fringe of the present cell site, the

1 radiotelephone begins" -- and I repeat that --
2 "begins the hand-off process described in
3 Tiedemann."

4 This beginning of the handoff process
5 described in Tiedemann, as Tiedemann describes in
6 many pages of its patent, is the beginning is
7 before a handoff can occur the initial step has to
8 be to find a new cell that has appropriate signal
9 strength. And then a location update is
10 performed.

11 Q I'm not sure that we're any closer to a
12 clarification on that paragraph. But let's move
13 on. Let's take a break.

14 MR. RICHARDSON: Another ten-minute
15 break. 11:15?

16 MR. SMITH: Sure.

17 MR. RICHARDSON: We'll be back on the
18 record at 11:15.

19 MR. SMITH: Whoa, whoa, whoa. It's
20 11:14 now. I assume you meant starting at 11:15
21 and coming back at 11:25.

22 MR. RICHARDSON: Yes. We'll come back

1 at 11:25.

2 MR. SMITH: All right. Thank you.

3 (Recess taken from 12:14 p.m. to
4 12:29 p.m.)

5 BY MR. RICHARDSON:

6 Q Let's turn back to your declaration and
7 let's take a look at Paragraph 84.

8 A Okay. I'm there.

9 Q Okay. In this particular paragraph
10 it's stated that "Gilhousen865 does not disclose
11 any of the receiver circuitry required for its
12 repeater or 'base station-type unit' to receive
13 and process these multiple signals. The most
14 detailed figure disclosed is Figure 2 shown below,
15 which obviously does not disclose any receiver or
16 transmitter circuitry. Nor does Gilhousen865
17 provide any figures or circuitry showing how a
18 receiver would receive a plurality of signals from
19 a plurality of fixed radio ports."

20 Do you see that?

21 A Yes.

22 Q Okay. Take a look at Gilhousen '865

1 again.

2 A Just one minute. I need to get some
3 context before I just jump right into a paragraph
4 in my declaration.

5 Okay.

6 Q Okay. So if you want to take a look at
7 Gilhousen, and particularly Figure 4.

8 A Okay.

9 Q And Figure 4 is a block diagram of
10 Gilhousen '865's alternative embodiment of an
11 airborne base station, correct?

12 A I would not agree with that.

13 Q So if we look at Column 2 of Gilhousen,
14 Lines 3 and 4, it says that "Figure 4 shows a
15 block diagram of an alternative embodiment of the
16 present invention," correct?

17 A That's what it says.

18 Q And we discussed before there's the
19 primary embodiment and there's the alternative
20 embodiment which Gilhousen describes in Column 3,
21 Line 65 as the "airborne repeater being replaced
22 by a base station-type unit," correct?

1 A That's what it says as well.

2 Q Okay. And so if we proceed on and we
3 see in Column 4, Line 6, it says, "Referring to
4 Figure 4, the airborne base station is comprised
5 of a number of base station transceivers that are
6 the link between the radiotelephone and the base
7 station," correct?

8 A That's what it says, yes.

9 Q Okay. So we can agree, then, that
10 Figure 4 illustrates the airborne base station,
11 correct?

12 A Yes.

13 Q Okay. And I think we could also agree
14 that Figure 4 provides more detail than Figure 2
15 which just shows the repeater as a rectangle
16 having a semicircle coming out in the bottom of
17 it, correct?

18 A I believe they're showing two different
19 things. I believe Figure 2 is for the preferred
20 embodiment and Figure 4 is for the alternate
21 embodiment.

22 Q I agree with that.

1 But would you agree that Figure 4 shows
2 internal components while Figure 2 does not show
3 any internal components of the repeater 210,
4 correct?

5 A I will agree with you that Figure 4 has
6 more detail in it than Figure 2 because Figure 2,
7 frankly, doesn't have any detail other than three
8 different components at a very high level.

9 But still, based on what I'm reading
10 for the claim and my comments beginning with
11 Paragraph 84, I still have the opinion that
12 Gilhousen doesn't provide any figures of circuitry
13 showing how a receiver would receive a plurality
14 of signals from a plurality of fixed radio ports.

15 Q Okay. Well, let's explore that a
16 little bit more. So if we look at Figure 4, and
17 on the right-hand side of that figure we see
18 multiple blocks labeled "selector bank subsystem
19 440," correct?

20 A Yes.

21 Q And these selector bank subsystems,
22 440, are receivers, correct?

1 A They're more than receivers. They --
2 I'm reading from Column 4, Line 19 -- Line 18,
3 "The selector bank subsystems (440) are connected
4 to the aircraft's external antenna (315) to
5 receive and radiate the radiotelephone signals."

6 So even though it's not stated in a
7 typical fashion, to receive and radiate to me
8 means to receive and transmit the radiotelephone
9 signals.

10 Q Fair enough.

11 So we can agree that at least one
12 function of the selector bank subsystems, 440, is
13 to receive signals from the ground base stations,
14 correct?

15 A Yes.

16 Q Okay. And I think that we can also
17 agree on this point: That the aircraft being
18 disclosed in Gilhousen '865 can travel in and out
19 of various cells as it travels through the air,
20 correct?

21 A Either embodiment of the Gilhousen '865
22 invention would typically go from one cell to

1 another as the airplane flies across the ground.

2 Q Okay. And as it flies across the
3 ground and travels through different cells it
4 becomes connected to multiple different ground
5 base stations, correct?

6 A I don't know. I don't recall Gilhousen
7 '865 describing being connected to multiple base
8 stations.

9 If you could point me to that.

10 Q Sure. We can go back to our trusty
11 paragraph in Column 3 beginning at Line 51. And
12 if you want to take a look at the paragraph again,
13 but I'll point to you a specific part.

14 A Okay. I see starting with Line 55 of
15 Column 3, "The signals from the ground base
16 stations are received by the external antenna of
17 the airborne subsystem and repeated to the
18 radiotelephones."

19 Q Correct. Okay. So then you would
20 agree that as the aircraft being disclosed in
21 Gilhousen '865, as it travels through the air, the
22 selector bank subsystems, 440, will receive

1 multiple signals from various different ground
2 base stations?

3 A In Column 3 it doesn't say specifically
4 how it's done. But I would agree that the signals
5 from the ground base stations are received by the
6 external antenna of the airborne subsystem and
7 repeated to the radiotelephones.

8 Q And as the aircraft travels, those
9 signals would be received from different ground
10 base stations, correct?

11 A Yes. That would be correct.

12 Q Okay. Let's move forward to
13 Paragraph 88 in your declaration. And I'll read
14 that portion to you, but if you need another
15 minute to orient yourself to this portion of your
16 declaration, you can do that too.

17 But in Paragraph 88 you state that "My
18 opinion that a POSITA would not have been
19 motivated to combine Gilhousen865 with
20 Gilhousen390 is also supported by Gilhousen's own
21 decision to cite a patent by a different inventor
22 in Gilhousen865 instead of one of his other

1 earlier patents, like Gilhousen390, as discussed
2 in more detail in the following paragraphs."

3 Do you see that?

4 A Yes.

5 Q And the following paragraphs include
6 some discussion about the Tiedemann reference that
7 we talked about before, correct?

8 A Yes.

9 Q And so the Tiedemann reference is the
10 patent by a different inventor that you're
11 referring to in Paragraph 88, right?

12 A Yes.

13 Q So we can agree that Gilhousen '865
14 actually does cite at least one other patent by
15 Klein Gilhousen, right?

16 A You lost me. Can you point me to what
17 you're referring to?

18 Q Sure. Let's take a look at Gilhousen
19 '865 and let's look at Column 2, Line 18. And
20 beginning on Line 18 it says, "A typical CDMA
21 radiotelephone system is discussed in greater
22 detail in U.S. Patent No. 4,901,301 to Gilhousen

1 et al. and assigned to Qualcomm, Inc., correct?

2 A Yes. And specifically that patent
3 refers to, as what it describes in the sentence,
4 as the overall CDMA radiotelephone system. So
5 again, as I described earlier, that would be what
6 is now known as the IS-95 CDMA system.

7 MR. SMITH: Ryan?

8 MR. RICHARDSON: Yes.

9 MR. SMITH: Just for clarity, I think
10 you said, "301," and I think it's actually '307,
11 right?

12 COURT REPORTER: I can't hear. I can't
13 hear. Can you hear me? I can't hear.

14 MR. SMITH: I think you said, "301,"
15 but I think it's actually --

16 COURT REPORTER: I can't hear.

17 THE WITNESS: Elvin is saying -- can
18 you hear me? Can you hear me? Hello? Hello?
19 Can you hear me, Ryan?

20 MR. RICHARDSON: Yeah, I can hear you.

21 THE WITNESS: See if she can hear you.
22 She can't hear us, obviously.

1 MR. SMITH: I don't need to be on the
2 record, Ryan, I just wanted to make sure I think
3 that it's '307 on the Gilhousen rather than '301,
4 right?

5 MR. RICHARDSON: Yeah. Maybe let's go
6 off the record for the second.

7 MR. SMITH: Not '301, but '307?

8 MR. RICHARDSON: Yeah. I think Judy
9 might have some connection issues so let's go off
10 the record for just a second. See if we can get
11 her cleared up.

12 MR. SMITH: Yeah. No problem.

13 (Discussion held off the record due to
14 technical issues.)

15 BY MR. RICHARDSON:

16 Q So for clarification of the record I'm
17 going to repeat the last question and having you
18 look at Column 2, Line 18.

19 That particular portion of Gilhousen
20 '865 reads "A typical CDMA radiotelephone system
21 is discussed in greater detail in U.S. Patent
22 No. 4,901,307, to Gilhousen et al. and assigned to

1 Qualcomm, Inc., correct?

2 A That's correct.

3 Q Okay. And, again, if we look at
4 Column 3, Line 11, Gilhousen goes on to state that
5 "The airborne communications system of the present
6 invention operates in a similar way to the ground
7 based CDMA radiotelephone system described in
8 Gilhousen et al."

9 Correct?

10 A You used the word "described" instead
11 of discussed. Other than that, you've read that
12 correctly.

13 Q Okay. So we can agree that Klein
14 Gilhousen actually did cite to at least one of his
15 earlier patents in Gilhousen '865, correct?

16 A Of course. I read -- he cited to it.
17 But context is very important here. At the
18 beginning of the patent, what the Gilhousen patent
19 that's being cited that you read from is in regard
20 to the CDMA radiotelephone system that is now, and
21 I've referred to as IS-95, and as we've read from
22 one of the Gilhousen's other patents the other

1 day, he states it's IS-95, and he's referring to
2 the overall system operation.

3 But, again, the context of where
4 Tiedemann is referred to is in refer -- in
5 reference to Column 3 that begins on Line 51 and
6 it's the issue that's being addressed when an
7 aircraft reaches the fringe of the present cell
8 site.

9 So Gilhousen isn't referring to the
10 Gilhousen IS-95 system when the aircraft is
11 reaching the fringe of the present cell site.
12 Instead, it's referring to Tiedemann and, as we
13 discussed earlier, Tiedemann uses a set of methods
14 that are used by the mobile to determine when it
15 needs to perform a location update with a new cell
16 and when it needs to start searching for a new
17 cell.

18 And so, again, Gilhousen chose, he
19 could have chose and just -- I think this supports
20 the point I'm making in my declaration. Gilhousen
21 could have simply just pointed back to Gilhousen
22 et al., like he has in Column 3, Line 13, but

1 instead chose to do a different reference when it
2 came time for this location update and cell
3 search.

4 Q Did you review this particular
5 Gilhousen patent, the patent being 4,901,307,
6 before or during the drafting of your declaration
7 for this proceeding?

8 A I believe I have.

9 Q And so then you would agree with the
10 characterization of this patent in Gilhousen '865
11 where he identifies this particular Gilhousen
12 reference as having "a ground based CDMA
13 radiotelephone system," correct?

14 A I agree with what Column 2 says and how
15 it describes what I'll refer to now as the
16 Gilhousen '307 patent.

17 Q So you would agree, then, that Klein
18 Gilhousen did not see any issues with citing to a
19 patent that related to ground based communications
20 in its discussion of the airborne communications
21 system in the '865 patent, correct?

22 A I don't agree with that. If I read --

1 again, context is important here. So if I read in
2 Column 2, starting higher up than where you
3 started in Line 13, it says, "The ground base
4 subsystem (105) in the preferred embodiment, is
5 the code division multiple access cellular
6 radiotelephone system. An alternate embodiment
7 uses the time division multiple access system.
8 Another alternate embodiment uses the present
9 advanced mobile phone system."

10 Then he states the lines that you've
11 read, "A typical CDMA radiotelephone system is
12 discussed in greater detail in the Gilhousen
13 '307."

14 So, again, this, in context, is saying
15 for the ground base systems that could perform the
16 ground based operations, it could be a CDMA -- it
17 could be a CDMA network, it could be a TDMA
18 network, or it could even be the first generation
19 analog network referred to as "amps."

20 But then when you look in column for 3,
21 Column 3, instead of referring to any one of those
22 three ground based terrestrial networks, Gilhousen

1 specifically points to Tiedemann in order to
2 determine the next cell or the possible next cell
3 that can be used when the aircraft gets close to
4 the fringe of the cell site.

5 Q You would agree, then, that the
6 Tiedemann reference also discloses a ground based
7 communications system, correct?

8 A I think the best way to answer it, I
9 don't believe, I was just scanning Tiedemann to
10 see if it actually said ground based or something
11 specific like that to answer your question. And I
12 think the best way that I can answer your question
13 is in looking at Column 1 of Tiedemann, where at
14 Line 17 it states, "The mobile station may be of a
15 cellular radiophone or a personal communication
16 device, typically in the form of a vehicle mounted
17 unit or a hand carried portable unit."

18 Q Okay. So I think we can agree, or
19 maybe we can't agree, a vehicle-mounted system
20 would be a system that existed on the ground,
21 correct?

22 A I'm sorry; I'm just remembering part of

1 another declaration that states a vehicle can be
2 an airplane.

3 So from my interpretation a vehicle
4 would be a ground based vehicle.

5 Q Okay.

6 A Or a ground based mode of
7 transportation.

8 Q Okay. So in looking back at Gilhousen
9 '865 in Column 3 where he refers to Tiedemann and
10 he says that "The radiotelephones begin the
11 hand-off process described in Tiedemann," you
12 would agree that for that process he is citing to
13 a ground based system which could include
14 vehicles, correct?

15 A I would agree that Tiedemann includes a
16 ground based system. But as I've read through
17 Tiedemann, Tiedemann describes much more than
18 that. As Tiedemann describes, there's different
19 ways that a mobile can use that are advanced
20 methods to determine when it needs to start
21 searching for another cell to communicate with and
22 how to determine that.

1 And one of the key methods is a
2 time-based method. And I believe this is what
3 Gilhousen's referring to because the Gilhousen
4 '865 is in an airplane. It's moving faster. And
5 I believe this method that Tiedemann describes
6 that is a novel method not described in IS-95 and
7 not described in other reference to Gilhousen '307
8 patent, is the way that he had in mind because of
9 the speed of the aircraft, this new algorithm for
10 the rate of speed and time that's described by
11 Tiedemann would be much more applicable for an
12 aircraft or an airplane than the ground based
13 systems, as I discussed earlier, that are limited
14 to 50 miles an hour.

15 Q Sure. But I think it's at least fair
16 to say that the fact that Tiedemann discloses a
17 ground based system and makes several references
18 to vehicles, that did not dissuade Klein Gilhousen
19 from still citing to Tiedemann in his '865 patent,
20 correct?

21 A I don't agree with that. As I just
22 stated --

1 Q It did dissuade him?

2 MR. SMITH: Ryan, can you just re-ask
3 the question? I think there's some confusion in
4 this. I'm not saying it was asked poorly but
5 could you just restate it for him.

6 A Because the connection. And maybe with
7 one-word difference makes a very different
8 question. So, again, I'm trying to work through
9 some of the connection issues, please.

10 Q Not a problem. And I will definitely
11 repeat anything that you need so no need to
12 apologize on that front. I'll read from the
13 transcript so that it's verbatim.

14 My previous question was, is it fair to
15 say that the fact that Tiedemann discloses a
16 ground based system and makes several references
17 to vehicles, that did not dissuade Klein Gilhousen
18 from still citing to Tiedemann in the '865 patent?

19 A No, it did not dissuade the Gilhousen
20 '865 patent to reference Tiedemann because, as I
21 stated, Tiedemann is disclosing new methods where
22 a cell phone can determine whether it needs to

1 handoff or it needs to search for a new cell site
2 and how that's determined in those intervals and
3 how to actually locate a cell phone that could be
4 moving at a high rate of speed to be able to page
5 that cell phone. So again, these new methods, new
6 and novel methods that were not part of the IS-95
7 system, nor were they part of the Gilhousen '307
8 patent, were referenced by Gilhousen '865 because
9 of the algorithms used were based on speed and
10 distance.

11 So, again, these are much more
12 appropriate algorithms to use in an aircraft when
13 a cell phone -- or the aircraft gets to the fringe
14 of a cell, then the IS-95-based ground systems
15 that were defined in IS-95 and defined in
16 Gilhousen '307.

17 Q Okay. Let's turn back to your
18 declaration. And let's take a look at
19 Paragraph 93.

20 A Okay. I'm there.

21 Q Okay. And the last paragraph -- or
22 excuse me -- the last sentence of Paragraph 93

1 reads, "Thus, if an airplane were flying at an
2 altitude where the cells do not overlap, the
3 Gilhousen865 airborne unit would realize that a
4 hand off was 'required' but would not be able to
5 perform a handoff because a second signal from an
6 alternate base station would not be available,"
7 correct?

8 A Yes.

9 Q Isn't this scenario that you're
10 describing here also a problem that can exist on
11 the ground?

12 A Yes. But as Tiedemann -- I mean, I've
13 included Figure 1 of Tiedemann, where Tiedemann is
14 showing that the cells have minimal overlap and
15 also minimal gaps. So the algorithm in Tiedemann
16 is based on cells that are closely connected
17 together. In reality, it's not the shapes that
18 are in Figure 1, but Tiedemann's point is the
19 cells have to be very closely together -- adjacent
20 to each other is the word I was looking for --
21 without large gaps or you'll have the same problem
22 of having the call dropped because the handover

1 cannot occur.

2 Q Okay. That makes sense. I think my
3 question was more just clarifying that this
4 overlapping cell issue is not exclusive to
5 airborne systems, right? It also exists in
6 ground systems?

7 A I would agree with that. I think with
8 the one caveat. I think the air based systems
9 have many more gaps in them than the terrestrial
10 or ground based systems. But I would agree that
11 if there's a gap between cells where the cell
12 phone cannot receive a new signal when it gets to
13 the fringe of the cell, the connection will be
14 dropped.

15 Q Okay. Fair enough.

16 Let's take a look at the '904 patent.
17 I think you have a physical copy of that. And
18 while you're pulling that out, I'll ask that you
19 go ahead and flip through it and just again make
20 sure there's no highlightings, markings, or
21 comments.

22 MR. RICHARDSON: And while Mr. Lanning

1 is doing that, if we can please pull up U.S.
2 Patent No. 7,221,904 onto the screen, please.

3 AV TECHNICIAN: Marked as Exhibit 4.

4 MR. RICHARDSON: Thank you.

5 (Lanning Exhibit 4 marked for
6 identification and attached to the transcript.)

7 A The '904 patent that I have here, the
8 paper copy is clean.

9 Q Okay. Great.

10 And does the cover page of the document
11 that you're looking at appear to match up with the
12 cover page that's on the screen?

13 A Yes.

14 Q Okay. Great.

15 MR. RICHARDSON: We can pull this
16 exhibit off the screen. Thank you.

17 Q So Mr. Lanning, let's flip to Column 12
18 of the '904 patent and in particular, Claim 22.

19 A Okay.

20 Q And this is a claim that's asserted --
21 or excuse me -- this is a claim that you addressed
22 in your declaration for the '904 patent, correct?

1 A Yes.

2 Q Okay. Does anywhere or any portion of
3 Claim 22 require the claimed apparatus to perform
4 a handoff procedure?

5 A As I read through Claim 22, I do not
6 see any requirements for a handoff or a handover.

7 Q Okay. So while you have the '904
8 patent in front of you, is it accurate to say that
9 the advantage, or at least one of the primary
10 advantages of implementing this moveable base
11 station is to reduce the number of handoffs?

12 A We discussed a similar passage from a
13 different patent the other day. If you want to
14 point me to it, I can answer. I believe -- I'll
15 find it before I even answer the question.

16 Q If it helps, I can give you one. I
17 think there's multiple, but one that might work
18 for our purposes is Column 5, Lines 17 through 19?

19 A Again, for certain situations, as it
20 states in -- and this is what I was thinking of a
21 similar passage, for Column 5, Line 17,
22 "Advantageously, because of movement of the base

1 station in the same direction as the traveling
2 mobile unit, the number of handoffs is greatly
3 reduced."

4 So that's one of the advantages of
5 using a moving base station in areas where there's
6 many small cells.

7 Q Okay.

8 A And I should be clear. Where there's
9 many small cells based on fixed base stations.

10 Q Is the number of handoffs reduced if
11 the moving base station is traveling in the same
12 direction and at the exact same speed as the
13 mobile unit?

14 A I'm providing some context here. The
15 handoffs that are being referred to or reducing
16 the number of handoffs, the patent describes an
17 environment where cells can be very small, even up
18 to, if I remember correctly, around 100 feet in
19 diameter. In that case, if a mobile unit or
20 the -- let me get the -- the traveling mobile unit
21 is in a vehicle and does not have access to a
22 moveable base station, then that traveling mobile

1 unit would need to have a high number of handoffs
2 between these small cells.

3 So if the mobile unit is moving at the
4 same speed or approximately the same speed as the
5 moveable base station, then the mobile unit will
6 not see those handoffs or need to experience those
7 handoffs.

8 Q Okay. I guess my question was slightly
9 different.

10 Is the number of handoffs in this
11 system reduced if the moving base station is
12 traveling at the same speed as the mobile unit?

13 A To clarify your question, are you
14 referring -- when you said "the number of handoffs
15 in the system," are you referring to the number of
16 handoffs that the moveable base station would need
17 to perform with the fixed base stations?

18 Q We can start with that clarification.

19 So is the number of handoffs that would
20 need to be performed by the moving base station
21 reduced if the moving base station is traveling at
22 the same speed as the mobile unit?

1 A Typically, the number of handoffs would
2 be reduced if the moving base station is connected
3 to cells at the macro level. If it chooses to
4 connect to macro level cells, then the handoffs in
5 the overall system would be much less if the
6 mobile unit is traveling at the same speed as the
7 moveable base station versus a scenario if a
8 mobile unit was moving through a bunch of smaller
9 cells and performing a lot of handoffs for those.

10 Q Let me ask it a different way.

11 Assuming that we have an environment
12 that is serviced by, let's just say, ten fixed
13 base stations, and you have a mobile unit that
14 travels through that environment passing through
15 each of those ten fixed base stations, and then
16 you have a situation where the mobile unit
17 connects to each of those fixed base stations
18 through a moveable base station, my question is,
19 is if the moving base station and the mobile unit
20 were traveling at the same speed through that
21 environment, would the number of handoffs be
22 reduced from the situation where the mobile unit

1 was traveling through the environment without the
2 benefit of the moving base station?

3 A There's different scenarios where there
4 would be -- when the mobile unit is traveling with
5 the moving base station, there are configurations
6 through the same ten cells you referred to where
7 the moving base station would perform
8 significantly less handovers than if a mobile unit
9 were just traveling through the same ten base
10 stations without a moving base station.

11 And then there's the scenario where
12 a -- the mobile traveling with the moveable base
13 station through those ten cells would perform --
14 would -- the moving base station would perform,
15 same number of handoffs. However, that's just in
16 handoffs and doesn't consider the benefits that
17 the moving base station would provide with its
18 plurality of antennas, choosing the best signal,
19 all of the other characteristics that are in the
20 moving base station.

21 Q Okay. Let's move forward to
22 Paragraph 98 of your declaration.

1 A Okay. I'm there.

2 Q Okay. And in Paragraph 98 it states,
3 "For at least the reasons stated above, it's my
4 opinion that a POSITA would have understood that
5 an airborne system disclosed by Gilhousen865 was
6 significantly different than the ground-based
7 vehicular system disclosed in Gilhousen390 and
8 this is at least one of the reasons that the
9 Tiedemann patent was cited for its registration
10 system in Gilhousen865 and not the hand-off system
11 disclosed in Gilhousen390," correct?

12 A That's what it says, yes.

13 Q And you state in the couple paragraphs
14 leading up to Paragraph 98, and I think you
15 reiterated in our first session today, that you do
16 not believe that Tiedemann discloses a handoff
17 procedure, correct?

18 A As I've stated today, Tiedemann does
19 not state a handoff procedure. Tiedemann is only
20 in regard to determining when a new cell needs to
21 be located and methods for locating the signal for
22 the new cell and as Gilhousen '865 states, that's

1 the beginning of the handoff or essentially the
2 first step in the handoff. You can't do a handoff
3 to a cell until the new cell is identified.

4 So Tiedemann patent is in regard to how
5 a mobile would identify the new cell.

6 Q Okay. Well, if we take a look at
7 Gilhousen '865 again. And particularly in
8 Gilhousen '865 if you want to take a look at
9 Column 1, Line 44. And at this portion of
10 Gilhousen '865, Klein Gilhousen states that, there
11 is a need for an airborne -- excuse me -- an
12 airborne radiotelephone system that enables
13 ground-initiated telephone calls to be received by
14 the airborne radiotelephone in addition to the
15 call from the airborne radiotelephone being handed
16 off to the next cell as it reaches the edge of the
17 cell's coverage.

18 Do you see that?

19 A Yes.

20 Q Okay. So given your position that
21 Tiedemann does not disclose a handoff procedure,
22 it is therefore accurate to say that the addition

1 of Tiedemann does not meet this need identified by
2 Klein Gilhousen in Column 1, Lines 44 through 48,
3 correct?

4 A I don't agree with that statement. I
5 think Gilhousen is accurate, Gilhousen '865 is
6 accurate when it states in Column 3, Line 52,
7 "Once the aircraft reaches the fringe of the
8 present cell site, the radiophone begins the
9 hand-off process described in Tiedemann."

10 So, again, Gilhousen '865 understands
11 that the beginning, or the first step of this
12 handoff process, is to identify a new cell.
13 Because as I've stated earlier, a handoff cannot
14 occur between two cells unless the new cell has
15 been identified.

16 So, again, Tiedemann is describing a
17 new and novel method for identifying a new cell
18 that is not defined in the CDMA IS-95 standard nor
19 was it defined in the Gilhousen '307 patent.

20 And so to me, again, Gilhousen is
21 recognizing that unless there's a new and novel
22 method for determining what the new cell will be,

1 an aircraft line at higher speeds will never be
2 able to even begin the handoff process because it
3 won't identify the new cell.

4 Q Okay.

5 A And so to me, the way for -- this is
6 the background. The way Gilhousen is describing
7 the background, that is this handoff, or not being
8 able to hand off in the traditional radiotelephone
9 system was a problem. He also realizes he's got a
10 problem with speed in the ground based CDMA
11 networks and standard that he's identified, and so
12 he points to this new procedure that's based on
13 distance and speed that Tiedemann defines.

14 So this is the first step in addressing
15 this problem of not being able to do a handover.

16 Q Okay. So it's clear that your opinion
17 is that Tiedemann merely discloses how to begin
18 the handoff process.

19 So my question is does anywhere in
20 Gilhousen '865 or anywhere in the Tiedemann
21 reference disclose how to complete that handoff
22 process?

1 A In general, Gilhousen '865 describes
2 the handoff process in Column 3 right after it
3 references "that begins the hand-off process step
4 by Tiedemann."

5 So in understanding Tiedemann and
6 reading Column 3, the beginning of the handoff
7 process is to locate the new cell site based on
8 the invention or based on the methods disclosed by
9 Tiedemann.

10 Once that new cell site is identified,
11 we've already read this section as well this
12 morning, "The signals from the ground based
13 stations are received by the external antenna of
14 the airborne subsystem and repeated to the
15 radiotelephones."

16 The determining factor on when the
17 quality of the pilot signal has been reduced to
18 the point that a handoff is required is when the
19 pilot signal drops a pre-determined amount. This
20 amount may be different for every system and is
21 set to optimize the system performance. Those
22 characteristics are also defined in Tiedemann, and

1 that's what I was describing, not only how to find
2 a new cell, but how a mobile can determine a point
3 in time based on the received signal when it needs
4 to start looking for a new cell.

5 Q Okay. So then is it your testimony
6 that the portion of Gilhousen that you just --
7 excuse me -- the portion of Gilhousen '865 that
8 you just read into the record from Column 3 at
9 Lines 55 through 64, that discloses how to also
10 complete the handoff procedure?

11 A I wouldn't go as far as how. It just
12 describes the functional steps that need to be
13 performed for this handoff procedure.

14 Why I say it doesn't go into a lot of
15 detail, but it says that a handoff is required
16 when the private signal drops the pre-determined
17 amount. And then it's referring to how the
18 signal -- so I think one of ordinary skill in the
19 art reading this would understand use Tiedemann in
20 an aircraft to determine -- for the airborne base
21 station to determine when a handoff needs to be
22 required and then perform the handover as it's

1 described at a functional level in Column 3.

2 Q Okay. So I'm cognizant of the time
3 here. I know we're about at an hour. I am at a
4 natural stopping point to take a quick break, if
5 you'd like; otherwise, we can keep going for a
6 little bit longer.

7 MR. SMITH: Ryan, let me make a quick
8 stop with Sanford and see if our lunch is here, or
9 if it's not when it's going to get here, and we'll
10 work around that so we don't have to follow up
11 with a second one. I just need, like, one minute
12 to go check with him.

13 MR. RICHARDSON: Okay. We'll stand by.

14 MR. SMITH: Ryan, they're telling us
15 ten minutes. So if you have another ten minutes,
16 that would be great. We can just break for lunch
17 when you get to that stop.

18 MR. RICHARDSON: Okay. I think that
19 might be a reasonable time here.

20 BY MR. RICHARDSON:

21 Q So let me -- Mr. Lanning, let me direct
22 you back to your declaration and let's take a look

1 at Paragraph 175.

2 A Okay. I'm there.

3 Q So the first sentence of Paragraph 175,
4 excuse me, reads, "I further note that the
5 Petitioner's and Dr. Ding's analysis did not apply
6 the civil court's construction for the term
7 'adapted to' - 'constructed to move with the
8 traffic at a rate of speed which is comparable to
9 the speed of the traffic' - and further failed to
10 account for the '904 Patent specification."

11 Do you see that?

12 A Yes.

13 Q And in Paragraph 173, so just above the
14 paragraph that we're looking at now, you include a
15 block quote from Mr. Ding's declaration at
16 Paragraph 115, and the block quote that you have
17 here reads, "The airborne base station also moves
18 with airplane traffic at a rate of speed
19 comparable to the speed of traffic whether it
20 is" -- excuse me -- "whether in the air or on the
21 ground because the base station is moving with the
22 plane."

1 Do you see that?

2 A I see it.

3 Q Can you explain to me how the language
4 that you have block quoted that I just read is not
5 an analysis of -- or excuse me -- is not an
6 analysis using the civil court's construction for
7 the term "adapted to"?

8 A Dr. Ding has not explained, and even in
9 the quote that I've used, he just simply says
10 "airborne base station moves with airplane traffic
11 at the rate of speed comparable to the speed of
12 traffic."

13 I don't understand that because I
14 understand that airplane traffic all moves at
15 different speeds. So I don't believe he's applied
16 the court's construction to that.

17 Q I think that might be, then, two
18 different things.

19 So at least to me I consider applying a
20 construction and then proving whether that
21 construction is met by a reference as two
22 different things. Can we at least agree -- I

1 understand that you -- it's your opinion that
2 Dr. Ding has not proven why Gilhousen '865 meets
3 this limitation. But can we agree that Dr. Ding
4 has applied the civil court's construction in his
5 analysis?

6 A I would agree with that
7 characterization. I think that's fair. I think
8 reading and even the highlighting, reading between
9 the highlighted parts of what I provided in the
10 quote, I believe the words of the court's
11 construction are included with that.

12 I guess the disagreement that I have is
13 I don't believe he's proven it in that sentence.
14 He says the sentence. And so where our
15 disagreement is is in the proof of that sentence.

16 Q Okay. Great. Appreciate that
17 clarification.

18 And I think, then, the main point, or
19 the main issue that you have, then, is summarized
20 in the final sentence of Paragraph 175, if I'm not
21 mistaken, and in that sentence you say that
22 "Therefore, the Gilhousen865 'airborne based

1 subsystem' aircraft obviously does not move at the
2 rate of traffic when comparing it to either the
3 average speed or the stop-and-go nature of traffic
4 of an 'automotive vehicle traveling on a roadway'
5 as disclosed by the '904patent," correct?

6 A Yes.

7 Q Okay. Is the stop -- let me rephrase
8 this.

9 So your wording here in this particular
10 sentence refers to traffic of a "automotive
11 vehicle traveling on a roadway"?

12 A Right.

13 Q Do you see that?

14 A Sorry; I'll let you finish your
15 question.

16 Q So you state "traffic of an automobile
17 vehicle' -- or excuse me -- "an automotive vehicle
18 traveling on a roadway."

19 Is that the only form of traffic that
20 you are considering in your analysis here?

21 A I don't -- can you give me an example
22 of what other forms -- the specification clearly

1 states "automotive vehicle traveling on a
2 roadway." And so that's the nature of traffic.
3 It goes into detail regarding automotive traffic.

4 So I'm not understanding your question
5 of what other types of traffic do you believe I
6 should have considered based on this disclosure?

7 Q So maybe I can ask it a different way
8 then.

9 You mentioned that the '904 patent
10 talks about traffic moving along a roadway,
11 correct?

12 A Yes.

13 Q And the civil court would have
14 obviously been aware that the '904 patent talks
15 about traffic moving along a roadway, correct?

16 A I believe so. I can't speak for the
17 civil court but that's my typical understanding is
18 they understand the patent specification.

19 Q But knowing that fact, the civil court
20 decided to omit the language of "moving along a
21 roadway" in its construction that you identify
22 here in Paragraph 175, correct?

1 A The construction does not include
2 roadway. Frankly, I don't see a difference in the
3 construction. It wouldn't be interpreted
4 differently. I'm not disagreeing with the civil
5 court's construction, I'm just simply saying
6 constructed to move with the traffic at the speed
7 of which is comparable to the speed of the
8 traffic. Based on that construction and
9 interpreting that construction based on the
10 disclosures of the '904 patent, that would be an
11 automotive vehicle traffic.

12 Q So I guess my question is reading the
13 civil court's construction that you have here in
14 Paragraph 175, where it simply refers to the speed
15 of traffic, do you understand that that could
16 include more than traffic moving along a roadway,
17 or do you believe that that is confined only to
18 traffic moving along a roadway?

19 A I think a person of ordinary skill in
20 the art would read the construction by the art and
21 understand that the traffic in the construction
22 and the speed of the traffic in the construction

1 is referring to automotive vehicle traffic.

2 I wouldn't -- would not restrict the
3 court's construction to be on a roadway. I guess
4 traffic could be on something different than a
5 roadway, but I do believe that it would still be
6 based on automotive vehicle traffic.

7 MR. RICHARDSON: Okay. I think that's
8 probably a good natural stopping point. Why don't
9 we break here for lunch.

10 Mr. Lanning, Elvin, do you guys have a
11 time in mind that you'd like to come back at?

12 MR. SMITH: I'm not sure our lunch is
13 quite here yet, Ryan. So how about 1:30 our time?

14 MR. RICHARDSON: Yeah, 1:30 works.

15 MR. SMITH: All right. We'll see you
16 1:30. Thanks, guys.

17 MR. RICHARDSON: Okay. Thanks.

18 (Recess taken from 1:47 p.m. to
19 2:34 p.m.)

20 BY MR. RICHARDSON:

21 Q So Mr. Lanning, let's return back to
22 your declaration that we've been discussing.

1 Let's take a look at Paragraph 2-0-6.

2 A Okay. I'm there.

3 Q Okay. And in 206 -- actually, it's a
4 longer paragraph. So why don't you just take a
5 moment to look over 206 on your own and then once
6 you've had a chance I'm going to ask you a couple
7 questions.

8 A Okay. Okay.

9 Q So in Paragraph 2-0-6, about halfway
10 through that paragraph, you have a sentence that
11 reads, "In short, Gilhousen865 does not disclose
12 any processor in the airborne system and Dr. Ding
13 does not provide any support that it does."

14 Do you see that?

15 A Yes.

16 Q So earlier before lunch we were
17 referring to Figure 4 of Gilhousen '865.

18 So if you want to take a look at that
19 figure again.

20 A Okay.

21 Q And in the middle bottom portion of
22 Figure 4, do you see the box labeled "call control

1 processor 420?"

2 A Yes, I see that.

3 Q Would that, in your opinion, constitute
4 a processor included in Gilhousen '865's airborne
5 system?

6 A I'm looking through my report and I'm
7 trying to even see where Dr. Ding has identified
8 Figure 4 of Gilhousen '865. I don't see anywhere
9 where I've referenced that Dr. Ding is referring
10 to Figure 4.

11 So are you asking me something that's
12 outside of Dr. Ding's declaration or can you show
13 me where Dr. Ding is referring to Figure 4 of
14 Gilhousen '865?

15 Q I'm not referring to anything outside
16 your report. I was simply referring to one
17 particular sentence to see if you could confirm
18 what you meant in that sentence.

19 But just to make sure that everybody is
20 clear, in Paragraph 82 of your declaration you
21 include two block quotes from Dr. Ding's
22 declaration from Paragraph 181 of Dr. Ding's

1 declaration. The second block quote there refers
2 to the alternative -- excuse me -- the alternate
3 embodiments use an airborne base station to
4 register the telephones before registering them
5 with the ground system.

6 Do you see that?

7 A You're going to have to start over. It
8 all broke up.

9 Q Referring to Paragraph 82 of your
10 declaration, you include two block --

11 A I'm sorry; 82? 8-2?

12 Q 8-2.

13 A Okay.

14 Q And in Paragraph 8-2 of your
15 declaration you include two block quotes from
16 Dr. Ding's declaration, specifically from
17 Paragraph 181.

18 The second block quote is a passage
19 from Gilhousen '865 that reads, "Alternate
20 embodiments use an airborne base station to
21 register the radiotelephones before registering
22 them with the ground system."

1 Do you see that?

2 A Yes.

3 Q And earlier this morning you had
4 confirmed that Figure 4 is the block diagram for
5 this alternate embodiment of an airborne base
6 station, correct?

7 A That's correct. But, still, it seems
8 like you're doing everything but to answer my
9 question does Dr. Ding ever identify Figure 4 of
10 the Gilhousen '865 for this limitation.

11 Q I think that is an exact correlation to
12 Figure 4. But if you would like to make the
13 record even more clear, which I appreciate you
14 wanting to do, Dr. Ding refers to Figure 4 in
15 numerous places in his declaration, including at
16 Paragraphs 123, 143, 191, and numerous other
17 places.

18 So I appreciate you allowing me to
19 clarify that for the record.

20 A Okay. So you've told me those
21 paragraphs. You haven't shown me the context of
22 what they were in regard. Again, the same

1 question --

2 Q Mr. Lanning, they're in regard to
3 Figure 4 of Gilhousen.

4 A You took me to the 34.3 limitation that
5 has a processor that's doing specific functions,
6 and I've looked at my rebuttal and I'm not seeing
7 anything in my rebuttal where I've included any
8 opinion from Dr. Ding that Figure 4 discloses the
9 processor here.

10 That's my point. You're asking me
11 questions about this limitation. This is a
12 rebuttal report. So I'm just trying to
13 understand, did Dr. Ding have Figure 4 in there
14 and then I've missed it, or did he not include
15 Figure 4 or its associated text for this
16 Limitation 34.3?

17 Q So I will represent to you that
18 Dr. Ding, in Paragraph 191 of his declaration,
19 discussed Gilhousen '865, Figure 4, and in
20 particular the call control processor of Figure 4.

21 But putting that point aside, I am
22 asking you to please focus on Paragraph 206 from

1 your declaration, which is the paragraph that I
2 began my questioning with, and there is a sentence
3 in that paragraph where you make two separate and
4 distinct points.

5 You state, "In short, Gilhousen does
6 not disclose any processor in the airborne
7 system," point one.

8 Your second point is, "Nor does
9 Dr. Ding provide any support that it does."

10 So put aside the portion about Dr. Ding
11 and I'm asking you do you still stand by the
12 statement that Gilhousen '865 does not disclose
13 any processor in the airborne system?

14 A Well, first off, I need to clarify.
15 This statement in this paragraph is clearly in the
16 section regarding the limitation that I've labeled
17 34.3, or that starts with the words "A processor."

18 So I'm referring to that processor. It
19 doesn't disclose a processor that does this
20 limitation. I should have probably included a few
21 more words here, but that's what I'm referring to
22 when I say, "In short, Gilhousen865 does not

1 disclose any processor in the airborne system for
2 this limitation."

3 That's where my mind was, as is obvious
4 with the paragraphs leading up to Paragraph 206.

5 So to answer your question, I still
6 don't believe that Gilhousen '865 discloses a
7 processor for this limitation. As I've just read
8 the description for the call control processor
9 420, and I don't believe call control processor
10 420 is the processor that -- or is -- meets the
11 requirement of the processor for Limitation 34.3.

12 Q Okay. I appreciate the clarification.
13 Thank you.

14 So then we can agree that
15 Gilhousen '865 at least discloses some type of
16 processor in its airborne system, correct?

17 A I would agree that Figure 4 has the
18 words "call control processor," but there's two
19 points I've made here, is I don't think that's the
20 processor as required by Claim Limitation 34.3,
21 and, also, unless I would get the opportunity to
22 read Dr. Ding's declaration, I still stand by my

1 sentence until I would stand corrected that
2 Dr. Ding does not provide any support that it
3 does.

4 I know you've told me various
5 paragraphs, but I don't know and I haven't been
6 able to look and refresh my memory whether these
7 paragraphs in Dr. Ding's declaration are for some
8 other limitation or are specifically for
9 Limitation 34.3.

10 Based on what I'm writing here, I think
11 it's my normal process to look at the declaration
12 before I write a sentence like this. So I'm
13 standing by the fact that Dr. Ding does not
14 provide any support that the processor in
15 Gilhousen '865 performs the limitation of 34.3.

16 Q Fair enough.

17 And I understand, and I understand your
18 position with respect to Dr. Ding and the analysis
19 that he provided.

20 So if we can return, again, to the
21 first portion of your opinion here, which is,
22 "Gilhousen865 does not disclose" -- and you're now

1 saying "the processor recited in Element 34.3,"
2 correct?

3 A I would say that it's explained a
4 little differently the way I would put it thinking
5 about this to be more specific, in short,
6 Gilhousen '865 does not disclose any processor in
7 the airborne system to meet this limitation.

8 Q Okay. So if we turn to Gilhousen '865,
9 and if we take a look specifically at Column 4 and
10 Line 11. And at this portion of Gilhousen '865 it
11 discloses that "The call control processor (420)
12 controls signaling with the radiotelephones,
13 controls all call processing, and allocates the
14 base station resources."

15 Do you see that?

16 A Yes.

17 Q Okay. So based on that description and
18 the functionalities that are outlined for the call
19 control processor, 420, what, in your opinion, is
20 missing from Claim Element 34.3?

21 A I would say it would be at least the
22 whole last part of Claim Element 34.3 that starts

1 with "and at least one of the plurality of fixed
2 radio ports based on the plurality of signal
3 quality indicators, each of signal quality
4 indicators corresponding to each of a plurality of
5 transmitted signals transmitted from the plurality
6 of fixed radio ports."

7 Q Okay. And so -- and do you have an
8 understanding of what the term "signal quality
9 indicator" is? I know we talked about this
10 yesterday. But if you don't mind providing your
11 understanding of this term again.

12 A A signal quality indicator is at least
13 a combination of the signal strength and the
14 signal error rate. Because the claim simply
15 doesn't say based on signal amplitude or signal
16 strength, it's based on signal quality. So it has
17 to be at least two different characteristics; the
18 signal strength and the error rate of the signal,
19 which typically equates to the interference the
20 signal is experiencing.

21 Q Would it be accurate to say that the
22 signal quality indicator is based primarily on the

1 signal strength?

2 A No. I don't agree with that. The
3 signal strength -- the error rate -- let me start
4 over.

5 No, I don't agree with that. Because
6 while you could have a high signal strength, if
7 the signal's experiencing high interference, it
8 won't do any good to try to use that signal.

9 So in many cases the error rate of the
10 signal is more important than the signal strength.

11 I can give an example. A person might
12 be receiving four bars on their phone as a signal
13 strength, meaning it's a high signal strength, but
14 if that signal is experiencing interference, they
15 can't get anything done with their phone.

16 However, they might get a different
17 signal that only has two bars that has a low error
18 rate that would actually be more efficient than
19 the signal with four bars that has a high level of
20 interference or a high error rate.

21 Q Okay. I believe that you still have a
22 copy of the '904 patent in front of you, correct?

1 A I have it.

2 Q Great. If you can turn to Column 5 of
3 the '904 patent.

4 A Okay.

5 Q And specifically at Line 58 of that
6 column it reads, "As will be described further
7 later herein, the processor 150 computes a signal
8 quality indicator for the information received
9 from the radio interface circuits 154, based
10 primarily on a radio signal strength intensity in
11 a well-known fashion."

12 Do you see that?

13 A Yes.

14 Q And so here they are indicating that
15 the signal quality indicator is based primarily on
16 the radio signal strength intensity, correct?

17 A Where it also means to me that there's
18 another component that also is being considered.
19 I'm not arguing with the words being used, you've
20 read that correctly. But it is also based on the
21 error rate.

22 Q Fair enough. But it would be based on

1 the error rate to a lesser degree than the signal
2 quality, correct -- or the signal strength, excuse
3 me?

4 A I don't know how I would interpret
5 based primarily on radio signal strength
6 intensity. I don't know what ratio that would be.
7 It might be -- primarily, I would interpret this
8 being more -- it would consider the radio signal
9 strength more than the error rate but it might be
10 as much as just a 51 percent consideration versus
11 a 49 percent consideration on signal strength
12 versus the error rate.

13 Q Okay. That's fair enough.

14 So if we turn back to your declaration,
15 and, again, we were talking about Claim Element
16 34.3. So looking back at Gilhousen '865, do you
17 dispute that its airborne base station has the
18 ability to chose a fixed ground base station based
19 off of a strongest received signal?

20 A Gilhousen '865 discloses that the
21 search is for the strongest pilot signal. And so
22 it only has one of the components that's required

1 by the Claim Limitation 34.3 because 34.3 is based
2 on signal quality. But I will agree that the
3 Gilhousen '865 reference does disclose searching
4 for the strongest pilot signal.

5 Q Okay.

6 A Without any indication of quality.

7 Q Fair enough.

8 So we were on Paragraph 206 of your
9 declaration.

10 A Okay. I'm still there.

11 Q And in the sentence that preceded the
12 one that we had been focusing on previously, you
13 state that, "Gilhousen390's Figure 2 is not for
14 the required apparatus moving base station (moving
15 base station). Instead, it is for the mobile
16 unit, which is at one end of the required
17 'communication link' and, therefore, cannot be
18 located in the required 'apparatus.'"

19 Do you see that?

20 A Yes.

21 Q So why is it your opinion that the
22 location at which Gilhousen implements its

1 functionality is prohibitive to it being
2 implemented in Gilhousen '865's airborne base
3 station?

4 A Because this part of my declaration is
5 in regard to Claim 30, which ultimately, through
6 multiple dependent claims, depends on Independent
7 Claim 22. Independent Claim 22 is for "an
8 apparatus adapted to move in accordance with the
9 movement of a mobile unit moving relative to a
10 plurality of fixed radio parts."

11 And that apparatus we've referred to
12 multiple times as "the moving base station" or
13 "the moveable base station."

14 So the processor in Claim 30, it says,
15 "An apparatus in accordance with Claim 29." And
16 Claim 29 links to 28, 28 links to Independent
17 Claim 22. So the apparatus in accordance with
18 Claim 29 is for the moveable base station and it's
19 a processor that's located in the moveable base
20 station and it performs the functions of the
21 remainder of Claim 36.

22 So the point that I'm making in this

1 paragraph of my declaration is, Dr. Ding has
2 pointed to the mobile phone and not a moveable
3 base station. And so it's not in the moveable
4 base station that he's pointing to. He's pointing
5 to the mobile terminal that is one of the
6 components listed in Claim 22, but the mobile unit
7 moving relative to a plurality of fixed parts is
8 also in accordance with the movement of a mobile
9 unit. So the mobile unit is a separate apparatus
10 to a separate component in this claim.

11 Q Understood. Before I follow up
12 substantively on that, I think there may be a
13 point to clarify for the record.

14 You had mentioned that this portion of
15 your declaration, and you were focusing on
16 Paragraph 206, was referring to Claim 30, which
17 then referred back to Claim 22. Is it accurate
18 that this portion of your declaration actually
19 refers to Claim 34?

20 A That's correct. I misspoke. I stand
21 corrected. I looked at a page just to the left of
22 34. I have Claim 30 analysis, but this is, as

1 we've discussed in multiple questions that
2 precede, specifically is for Claim 34.3.

3 Q Right.

4 A I made this -- I believe, I'll check
5 this to see if I have the same point, I believe I
6 will, but let me verify that for the record, too.
7 So I look at Claim 34. Yeah, so it is different.
8 Because Claim 34 is an independent claim.

9 Q All right.

10 A So let me start all over. I stand
11 corrected. I was on the wrong claim.

12 An apparatus adapted to move in
13 accordance with the movement of a plurality of
14 mobile units moving relative to a plurality of
15 fixed radio ports.

16 And so, again, the apparatus would
17 still be the moveable base station and the mobile
18 units are a different component and so are the
19 fixed radio ports.

20 And so my point that I was making when
21 I was referring to the wrong claim, but now I'm on
22 Claim 34, is Dr. Ding is pointing to functionality

1 in a mobile terminal not in a moveable base
2 station, as required by this claim.

3 Q Okay. Understood.

4 So now to follow up on the substance of
5 that statement.

6 So do you understand that it's
7 Dr. Ding's position and Petitioner's position that
8 the functionality being pointed to in Gilhousen
9 '390's mobile unit can be implemented within
10 Gilhousen '865's airborne base station?

11 Do you understand that that's the
12 argument that Petitioner and Dr. Ding are making?

13 A Well, what I understand, as I state in
14 Paragraph 204, that the Petitioner and Dr. Ding
15 are stating that "Gilhousen865 and Gilhousen390,
16 either singularly or in combination, teach or
17 suggest." Then I've included the various quotes.

18 So I would say that what you -- the
19 question you've asked me mischaracterizes what I
20 believe is the Petitioner's and Dr. Ding's
21 argument because they are saying that either one
22 of these singularly, what I'm reading in their

1 statement, or in combination teach, and then
2 they've added even the word "or suggest."

3 And so I then looked at the analysis
4 and I've responded accordingly.

5 So, again, even if they were to combine
6 Gilhousen '865 with '390, I have shown how they've
7 taken a part out of Gilhousen '390 and have then
8 combined it with what they're claiming to be the
9 moveable base station disclosed by Gilhousen '865.

10 Q Okay. So and just so I am clear, it is
11 not your understanding of Petitioner and
12 Dr. Ding's position -- let me rephrase.

13 You do not understand Petitioner and
14 Dr. Ding's position to be that Gilhousen '390's
15 functionality in the mobile unit can be
16 implemented in Gilhousen '865's airborne base
17 station, correct?

18 A I think I've included that the
19 statements to me that are significant made by the
20 Petitioner and Dr. Ding, I believe I understand
21 the opinion that Dr. Ding has provided, and I've
22 provided the rebuttal.

1 I believe Dr. Ding is saying we can
2 take the part of '390 that's out of a mobile
3 terminal in '390 and put that functionality into
4 what is allegedly referred to by Dr. Ding as the
5 moveable base station of Gilhousen '865.

6 So I believe I understand that's what
7 he's doing -- or what he says to be done and
8 combined, and that's what I'm making my rebuttal
9 remarks to.

10 Q Okay. I think we're on the same page
11 with that now.

12 So given that that's your understanding
13 of Dr. Ding's position, is it your opinion that
14 Gilhousen '390's functionality from its mobile
15 unit cannot be implemented within Gilhousen '865's
16 airborne base station?

17 A I believe that's the opinions that I
18 have stated, gee, at least starting in
19 Paragraph 204, then I specifically address the
20 reasons why in Paragraph 206 and further on past
21 206.

22 Q Just quickly skimming through the

1 paragraphs that you identified for me so bear with
2 me.

3 Okay. So I just skimmed through those
4 paragraphs quickly.

5 So it appears to me that everything in
6 Paragraph 204 are direct quotes from Dr. Ding's
7 declaration.

8 So can you point me to a particular
9 location in any of the other paragraphs that you
10 identified for me where you state your reasoning
11 as to why Gilhousen '390's functionality from its
12 mobile unit cannot be implemented within Gilhousen
13 '865's airborne base station?

14 A I believe I've stated that at least in
15 Paragraphs 206 and 207 with the annotated Figure 1
16 from Gilhousen '390, showing that Gilhousen '390
17 does not disclose the functionality of the
18 limitation.

19 Q So in Paragraph 206 you state,
20 "Gilhousen390" -- "Gilhousen390's Figure 2 is not
21 for the required apparatus (moving base station).
22 Instead, it is for the mobile unit, which is at

1 the end of the required 'communication link' and,
2 therefore, cannot be located in the required
3 'apparatus.'"

4 So I'm asking is it your opinion that
5 the only reason Gilhousen '390's functionality
6 cannot be located in the airborne base station is
7 because it's depicted in Gilhousen '390 as being
8 located somewhere else?

9 A No. That's one of the reasons is
10 because Gilhousen '390 does not disclose the third
11 component of the required claims of the Challenged
12 Claims. It only discloses a direct connection
13 between the cell site and a mobile phone. And it
14 does not disclose, as I state in the middle of
15 Paragraph 206, that its mobile units can establish
16 the required communication link between a
17 plurality of mobile units, as I've shown here and
18 is required by this claim limitation is that the
19 processor needs to be able to establish a
20 communication link between the plurality of mobile
21 terminals and between the best signals from a
22 fixed base station.

1 And as I show in the annotated figure
2 on Page 118, there's no communication link
3 established, or even discussed in Gilhousen '390.

4 Q Okay. And that's fair. I understand
5 your position is that Gilhousen '390's
6 functionality does not disclose all of the
7 elements of the claim. I think we can agree that
8 that's your position as far as that functionality.
9 However, I'm asking something slightly different.

10 Regardless of whether Gilhousen '390's
11 functionality is sufficient to meet all of the
12 claim limitations, my question is can Gilhousen's
13 functionality, as it currently is disclosed, be
14 implemented within Gilhousen '865's airborne base
15 station?

16 MR. SMITH: Objection. Form.

17 A I don't think so. I think probably the
18 most obvious reason is both of these are
19 Gilhousen's patents. Gilhousen didn't use
20 anything in Gilhousen '390. He drew different
21 diagrams, different functionality. And for
22 locating another cell, he listed Tiedemann instead

1 of one of his other -- other patents that were
2 based on these terrestrial-based systems. And for
3 all the reasons I've stated, including Gilhousen
4 not combining or even using any of this from
5 Gilhousen '390, his other patent, is a clear
6 indication in addition to all the reasons I'm
7 stating why it still wouldn't be obvious to one of
8 ordinary skill in the art to combine Gilhousen
9 '865 with Gilhousen '390.

10 Q Okay. So outside of the fact that
11 Klein Gilhousen does not expressly cite to
12 Gilhousen '390 in the Gilhousen '865 patent,
13 outside of that fact, are there any technical
14 limitations that would necessarily prevent the
15 teachings of Gilhousen '390 from being
16 incorporated into Gilhousen '865's airborne base
17 station?

18 A Yes. Again, as I have defined and
19 described in at least Paragraph starting at 204
20 through Paragraph 211. So I still stand by those
21 reasons. I've listed those reasons. I've also
22 shown that the Gilhousen '390 doesn't have any

1 concept of transmitting to other mobile terminals
2 because it's at the end of the link, so that
3 circuitry wasn't designed to do as the claim
4 requires.

5 And so just by saying we can force fit
6 one Gilhousen diagram into another and say the
7 functionality's going to work, it won't. The
8 circuitry -- there's no disclosed circuitry in
9 Gilhousen '390 for performing the limitations of
10 the claim.

11 Q So I think we were on the same page
12 until the very end because you identified a
13 deficiency in Gilhousen '390's functionality with
14 respect to the claims.

15 So I understand your position is that
16 the functionality in that patent does not match up
17 to the claims in the '904 patent. I understand
18 that's your position and I know you're going to
19 stand on that position.

20 My question is if a POSA, person of
21 ordinary skill in the art, would attempt to -- and
22 maybe it's easier if we take a look at

1 Paragraph 102 of your declaration, it might help
2 in our discussion.

3 And in Paragraph 102, and it's actually
4 at the top of Page 60, you show the functional
5 components of the mobile telephone unit from
6 Gilhousen '390.

7 Can you identify for me any technical
8 reason why these functional components could not
9 be incorporated into the airborne base station
10 shown in Figure 4 of Gilhousen '865?

11 A Okay. I'm looking at Figure 4 in
12 Gilhousen '865, and I'm looking at Figure 2 that's
13 in my declaration but it's Figure 2 from Gilhousen
14 '390. And so as soon as I see the circuitry, I'm
15 seeing very different circuitry that's used for
16 different reasons.

17 For instance, there's a searcher
18 receiver, there's a digital data receiver,
19 multiple digital data receivers. And then when I
20 look at Gilhousen, he refers to those as "selector
21 bank subsystem." That's different.

22 So now I have two different types of

1 circuits that are not compatible that now Dr. Ding
2 says you can just put those together. That
3 doesn't work either.

4 There's a transmit -- I also see in the
5 Gilhousen '390 Figure 2, top box on the right
6 that's labeled "No. 48 the diversity combiner and
7 decoder" there's no diversity combiner and decoder
8 the way Gilhousen '865 Figure 4 is designed.

9 And so all of that functionality either
10 would need to be ripped out of one and new
11 circuitry would need to be defined in order for
12 the diversity combiner and decoder to operate
13 correctly with the selector bank subsystems
14 because that functionality isn't there.

15 So now if I did a composite of these
16 two, there would need to be extensive work done on
17 the selector bank subsystems and the diversity
18 combiner/decoder, and, also, there's no transmit
19 power control or power amplifier listed. I would
20 think that the -- looking at Gilhousen, Figure 4
21 from Gilhousen '865, that circuitry would need to
22 be force fit somehow into the Figure 4. It

1 doesn't disclose where that functionality's at or
2 how it operates.

3 Q I think yesterday, hopefully you
4 recall, you had testified that it was your
5 understanding that the elements disclosed in two
6 different references do not need to be able to be
7 combined like Lego pieces, correct?

8 A No, that's not what I testified. I was
9 making a different point. I was making the point
10 that reading through Dr. Ding's declaration, is he
11 just made statements that were just high-level
12 statements treating of circuit in a figure of one
13 patent and a figure in a different patent as Lego
14 pieces, that he could just simply take one out and
15 put the other one in. I'm saying that's not the
16 case. As I just started describing, this will
17 take extensive work to be able to combine
18 Figure 2, Gilhousen '390, with Figure 4 of
19 Gilhousen '865. They are different devices built
20 for different reasons and have significantly
21 different circuitry. So, therefore, they are not
22 like Lego pieces where you can just take a part of

1 one and plug it into the other one.

2 Q Right. That's my question.

3 You understand that two references do
4 not need to be fit together like Lego pieces in
5 order for them to be -- in order for a POSA to be
6 able to combine them, correct?

7 A I understand that one of ordinary skill
8 in the art needs to have a necessary motivation to
9 combine two references. And as I've included
10 multiple reasons -- for multiple reasons, one of
11 ordinary skill in the art would not be motivated
12 to combine the circuitry specifically that's shown
13 in Figure 2 of Gilhousen '390 with the block
14 diagram that's included in Gilhousen '865
15 Figure 4. And I've included the reasons and
16 extensive amount of changes and differences.

17 I've even then, I guess, put an
18 additional point on top of that that even the
19 inventor of both patents himself used different
20 circuitry for these two inventions. It would have
21 been much easier for Gilhousen to use the
22 circuitry in '390 if he felt that that circuitry

1 was appropriate for an airborne system. Not even
2 the terminology is the same between the circuits.
3 I believe the inventor understood they were
4 significantly different and that's why you have
5 two very significantly different diagrams between
6 the two patents.

7 Q That's understood, there are different
8 diagrams.

9 So in your previous answer you touched
10 on two different ideas. One was you believed
11 there was a lack of motivation to combine
12 Gilhousen '390 and Gilhousen '865. And the second
13 was you believe that they technically cannot be
14 combined.

15 So I want to put aside the lack of
16 motivation to even try the combination in the
17 first place for a second. I understand that you
18 don't think that there is a motivation to combine.

19 My question is would a person of
20 ordinary skill in the art be able to combine the
21 concepts disclosed in Gilhousen '390 with the
22 concepts disclosed in Gilhousen '865?

1 MR. SMITH: Object to form.

2 A I think the best way for me to answer
3 your question is, as I stated the other day, I
4 believe with enough time and money about anything
5 is possible. And so with enough time and money,
6 these two diagrams could be merged together as
7 Dr. Ding and the Petitioner opine. But I don't
8 think any test of reasonableness would assume that
9 these two circuits would be combined together.

10 Again, I think the underlying support
11 for that is the same inventor of both the patents
12 could have used the same circuitry in '309 for the
13 '865, or vice versa, and the inventor himself
14 chose not to do that. And there's obvious reasons
15 of why these two references would not be combined.
16 And so I understand why the inventor did not do
17 this.

18 Q Understood. Okay. I think I am clear
19 on your position now.

20 And I think that we can actually put
21 aside Gilhousen '865, which I'm sure you might be
22 happy about. We've beat that one kind of to death

1 for a couple of days now. And can I have you take
2 a look, and I believe again you have a physical
3 copy, of the Vercauteren reference. And I don't
4 know if you have a preferred way of pronouncing
5 the name of that particular reference?

6 A Oh, we were looking at each other
7 wondering what reference you're referring to. I
8 guess I've been pronouncing it Vercauteren.

9 Is that the one you're referring to?

10 Q That's the one I was referring to. And
11 I tried to pronounce it that way so maybe I got
12 garbled a little bit. But the Vercauteren
13 reference.

14 MR. RICHARDSON: If we can please also
15 pull up that particular reference on the screen,
16 it is U.S. Patent No. 5,504,903.

17 MR. SMITH: Hey, Ryan?

18 MR. RICHARDSON: Yes.

19 MR. SMITH: We've been going about an
20 hour. It seems like it might be a natural spot to
21 take a break. But I'm not -- I'm just raising
22 that.

1 MR. RICHARDSON: We are at a natural
2 shift in topics, and so if Mr. Lanning needs a
3 break, he can definitely have a break.

4 MR. SMITH: Why don't we adjourn until
5 a quarter till?

6 MR. RICHARDSON: All right. We'll be
7 back.

8 MR. SMITH: Thank you.

9 (Recess taken from 3:32 p.m. to
10 3:47 p.m.)

11 BY MR. RICHARDSON:

12 Q Before we broke, Mr. Lanning, I had
13 asked you to pull out the physical copy that you
14 had of the Vercauteren reference.

15 A Okay.

16 Q And if you could, as we've been doing
17 before, just briefly flip through that to see if
18 there's any markings, highlights, or other
19 notations.

20 MR. RICHARDSON: And in conjunction
21 with that if we could please pull up that patent
22 on the screen.

1 And are we on Exhibit 6?

2 AV TECHNICIAN: This has been marked as
3 Exhibit 5, counsel?

4 MR. RICHARDSON: 5. Okay. Great.
5 Thank you.

6 AV TECHNICIAN: Sure.

7 (Lanning Exhibit 5 marked for
8 identification and attached to the transcript.)

9 THE WITNESS: It's a clean document.

10 BY MR. RICHARDSON:

11 Q Okay. Good.

12 And, again, if you could just confirm,
13 at least from the face of the two documents, that
14 the one that you have in front of you looks to be
15 the same as the one that's presented on the
16 screen?

17 A They appear to be the same.

18 Q Okay. Great.

19 MR. RICHARDSON: So, again, we can pull
20 down this particular document.

21 Q And now that you have that handy, let's
22 take a look at Paragraph 112 of your declaration?

1 A Okay.

2 Q And in Paragraph 112, the first
3 sentence of that paragraph reads, "Therefore, the
4 Vercauteren fixed base stations are not required
5 to provide wireless connections to the relay
6 stations as required by the 'plurality of signals,
7 each of the plurality of signals transmitted from
8 each of the plurality of fixed radio ports'
9 elements of the Challenged Claims (See e.g.,
10 Claim 22)."

11 Do you see that?

12 A Yes.

13 Q Do you disagree with the fact -- with
14 the assertion that Vercauteren discloses that at
15 least in some instances there can be a wireless
16 connection between the fixed base station and the
17 relay station?

18 A Let me answer that question at a high
19 level and then we can drill down if we need to.

20 But I believe I've addressed your
21 question starting with Paragraph 115 where I'm
22 describing there's multiple types of relay station

1 but only one type is capable of moving and is not
2 required the required moving base station.

3 So the -- there is a case where the
4 moving base station in some cases has a direct
5 wireless link, but even for that relay station
6 I've addressed situations where not even that
7 relay station requires a wireless link between the
8 relay station and the fixed base station.

9 Q Okay. Great.

10 So this portion of Paragraph 112 that
11 we just read where it says the "fixed base
12 stations are not required to provide wireless
13 connections to the relay stations," that does not
14 mean that there cannot be wireless connections
15 between the fixed base stations and the relay
16 stations, correct?

17 A There are cases where Vercauteren
18 discloses that a wireless link can be used for a
19 roaming relay station, that acronym that the
20 Vercauteren patent uses is an "RRS," for roaming
21 relay station, because it's capable of moving.
22 And so those relay stations may have a wireless

1 link between the fixed base station and the
2 roaming relay station, but that's not required,
3 but it may be there.

4 Q Great. Thank you for that
5 clarification.

6 And if we can turn to the next
7 paragraph, Paragraph 113. And I think there's a
8 similar point being made there, and I'll start
9 with the second sentence of that paragraph which
10 reads, "Thus, as disclosed below, regardless of
11 the fixed relay station serving the mobile
12 terminal, the relay links can be configured so the
13 base station controlling the mobile terminal does
14 not need to change. In other words, there is no
15 reason for 'a plurality of fixed based stations to
16 transmit their signal to a relay station
17 (purported moveable base station) as required by
18 the Challenged Claims because a handover between
19 the fixed based stations is not required'."

20 You see that, correct?

21 A Yes.

22 Q You do. But again, you would admit

1 that Vercauteren discloses that at least in some
2 instances a single relay station can be connected
3 to multiple fixed based station, correct?

4 A I'm confused by your question because
5 you started the question, to me, on one premise,
6 and then by the question you asked, the two
7 concepts don't tie together for me.

8 I can't answer the question because,
9 frankly, the two concepts together don't make
10 sense to me.

11 Q So you are stating here that there is,
12 in 113, "there is no reason for 'a plurality of
13 fixed base stations to transmit their signal to a
14 relay station as required by the Challenged
15 Claims.'"

16 So my question, which I was hoping to
17 clarify that, was would you agree, though, that
18 Vercauteren discloses that at least in some
19 instances a single relay station can be connected
20 to multiple fixed base stations?

21 A I think I understand the question
22 you're asking me and I understand why my

1 confusion.

2 The two concepts are not necessarily
3 tied together. But I'll explain that the relay
4 stations, the way Vercauteren teaches away from a
5 traditional cellular network is by connecting
6 multiple plurality or multiple fixed base stations
7 to multiple relay stations using fixed wire links.
8 So that there's no reason to -- for a mobile to
9 change from one base station to the other because
10 these different relay stations are all connected
11 back to almost every other base station or every
12 other feasible base station within that region.
13 So that this whole concept of handover doesn't
14 need to be performed.

15 So the plurality of base stations
16 connected to a relay station is by fixed wired
17 connection not by radio port signals.

18 Q Okay. I think I understand the point
19 that you are making here.

20 So let's look at the Vercauteren
21 reference, and in particular, let's take a look at
22 Column 8, starting at Line 50.

1 So in Line 50 it's saying that "Each
2 type of relay station, RX" -- or excuse me -- "RS
3 can be used to provide a specific coverage area
4 for the mobile terminals, MT and hence to adapt
5 the mobile network, MCN to a specific environment
6 wherein the mobile terminals may be situated. For
7 instance, a type corresponding to the global
8 coverage radio network GCRN may be used as relay
9 station mounted on a train whereas a type
10 corresponding to the global coverage fixed network
11 GCFN may be used as a relay station in a
12 subscriber premises. In both cases in appropriate
13 relay link, i.e. a 'mobile' radio link within the
14 global coverage radio network CGRN and a link of
15 the fixed telecommunication network FTN within the
16 global coverage fixed network GCFN respectively,
17 may be chosen so as to couple the relay station RS
18 to at least one fixed based station FBS."

19 Do you see that?

20 A Yes.

21 Q So it's saying here that one type of
22 relay station, RS, can be used in a global

1 coverage radio network and can be -- and can
2 communicate with -- or can -- excuse me. Let me
3 rephrase the question.

4 It's saying here that one type of relay
5 station, RS, can exist in a global coverage radio
6 network, GCRN, and can be implemented on a train,
7 correct?

8 A That's what the words say, yes.

9 Q Okay. So in the situation where it's
10 implemented in a global coverage radio network and
11 implemented on a train, there would not be a
12 fixed -- or excuse me -- a wired connection
13 between that relay station and the fixed base
14 station, correct?

15 A That may be the case, but that's not
16 always the case. And I've gone through detail, as
17 a matter of fact, you've got to love all the
18 acronyms in this patent. I even put a table of
19 all the acronyms in my declaration so I could keep
20 track of all the different acronyms.

21 But to answer your question, I think I
22 did. Let's start with just, I'll answer your

1 question for the relay station that's on a train,
2 it can either have a wireless connection to the
3 fixed base station or if there is a wired
4 connection to the fixed base station. And so I've
5 explained that in detail in one of the sections in
6 my declaration regarding Vercauteren.

7 But I'll stop with my answer there for
8 you to ask any other questions.

9 Q Okay. Great.

10 And maybe it will help to look at one
11 other portion of Vercauteren.

12 And same column, Column 8, this time at
13 Line 44, explains that "The relay network RN
14 contains at least two types of relay links, fixed
15 links known as the global coverage fixed network
16 GCFN and radio links known as the global coverage
17 radio network GCRN."

18 Do you see that portion?

19 A Yes. I think you read it correctly.

20 Q So Vercauteren is explaining that when
21 the relay station is implemented in a global
22 coverage radio network, for example, on a train,

1 it is using radio links, as explained beginning at
2 Line 44, correct?

3 A I would agree that the words say what
4 they do. But as I've explained in detail in my
5 declaration, Vercauteren also discloses that there
6 are situations where the roaming relay station is
7 not connected via a radio link to a fixed base
8 station.

9 Q In the example that Vercauteren
10 describes in this particular portion of its patent
11 where the relay station is mounted on a train, how
12 would it be feasible to connect that relay station
13 on a moving train via a wired connection to a
14 fixed base station?

15 A I thought you had asked me that
16 question, so I wanted to make sure I covered this
17 specific example in my declaration. Let me find
18 it then I can give you the description and the
19 support for that situation.

20 Okay. Let me start -- and I've
21 included multiple figures and you've described the
22 different parts of the different networks. But

1 let me start with the figure that I've included,
2 Figure 5 from Vercauteren that's on Page 77 of my
3 declaration and part of Paragraph 123.

4 Q Okay. I'm there.

5 A And so I have highlighted the path for
6 a mobile that is communicating with a roaming
7 relay station. So here in this figure -- I have a
8 lot of description in my declaration, but if I
9 may, I'll paraphrase my declaration and then we
10 can go to very specific citations.

11 But I have shown in the highlighted
12 path that a mobile communicates with a roaming
13 relay station and the roaming relay station
14 communicates with the fixed base station layer,
15 the FL, over a link or a type of link it refers to
16 as the MTGCRN. And so that's the path where if a
17 roaming relay station is mounted on a train, this
18 is the only connection that is supported for a
19 mobile communicating with a roaming relay station
20 on a train and then the MTGCRN is shown to be in
21 connection with the fixed layer.

22 However, as Vercauteren states, there

1 are times when the wireless connection for the
2 MTGCRN between the roaming relay station and the
3 fixed layer for the fixed base stations is not
4 available. And in those cases, they connect what
5 they refer -- what Vercauteren refers to as
6 "repeater stations." The repeater station has a
7 wireless link between it and the roaming relay
8 station and then between the repeater station and
9 the fixed layer is a fixed link for a wired link.

10 To explain it in a little different
11 way, for situations where a train goes through a
12 tunnel, the wireless link from the fixed base
13 station is not received or can't be transmitted so
14 Vercauteren states that repeater stations are put
15 in these tunnels or other areas where the wireless
16 link from the fixed base station cannot be used.
17 And in those cases, the repeater provides a very
18 short wireless connection to the roaming relay
19 station and then the repeater has a fixed link, or
20 a wired connection, back to the fixed base
21 station.

22 And by doing that, the complete link or

1 the link between the roaming relay station and the
2 fixed base station is not wireless, it is a small
3 wireless connection and the remaining part of the
4 connection is wired. And again, I've included a
5 lot of different references and explanation.

6 For your information, I'm looking on
7 starting on Paragraph 121 of my declaration.

8 Q Okay. And I understand your position.

9 So it's not that there would be a fixed
10 connection between the relay stations on the train
11 and the fixed base stations, it's that there would
12 be another relay station mounted, for example, in
13 a tunnel and that relay station would have a fixed
14 connection to the base station, correct?

15 A Not correct. You're close. I think
16 what we need to make sure we get the terminology
17 right because Vercauteren refers to three
18 different types of relay stations and then it
19 refers to a different component as a repeater
20 station. And the repeater stations have different
21 functionality than the relay stations. Again, all
22 the terminology in Vercauteren makes it a

1 challenge.

2 But -- so instead of the relay station,
3 the roaming relay station on the train,
4 communicates with a repeater station over a
5 wireless link, and then the repeater station
6 communicates with the fixed base station layer
7 through a wired link.

8 Q Understood. Okay. I understand your
9 position now.

10 Let's take a look at Paragraph 121 from
11 your declaration.

12 A I'm there.

13 Q All right. And this paragraph begins
14 with a sentence that reads, "First, the
15 communication link used by the RRS to communicate
16 with the Fixed Layer where the modified Fixed Base
17 Stations (FBS) reside."

18 And then you list three different
19 factors. The third one being "does not even meet
20 the basic requirement of being a direct link as
21 required by the Challenged Claims for receiving
22 the 'plurality of signals transmitted from each of

1 the plurality of fixed radio ports.'" "

2 Do you see that?

3 A Yes.

4 Q Okay. Is it your opinion that the
5 Challenged Claims of the '904 patent require a
6 direct link between the fixed radio ports and the
7 moving base station?

8 A The answer is yes because as, for
9 instance, Claim 22 states in the first limitation
10 is, "A receiver adapted to receive a plurality of
11 signals each of the plurality of signals
12 transmitted from each of the plurality of fixed
13 radio ports within a frequency band having a lower
14 limit greater than 300 megahertz."

15 So to me there's two requirement there;
16 that they are direct signals being transmitted and
17 those transmitted have -- transmitted radio
18 signals have a lower limit greater than
19 300 megahertz.

20 Q Okay. So then it's your opinion, then,
21 that if a repeater, such as the repeater that you
22 just had discussed in the tunnel situation of

1 Vercauteren, was placed between the moving base
2 station and the fixed based station, that scenario
3 would no longer be covered by these claims?

4 A Well, first, as I explained, the
5 connection for the connection that includes a
6 repeater system has two different types of
7 interfaces. It has a wireless interface between
8 the repeater and the roaming relay station and it
9 has a wired connection between the repeater and
10 the fixed base station layer. Again, I'm being
11 very careful to keep referring to it as a "layer"
12 because Vercauteren clearly says that it is a
13 layer where all of the fixed base stations are
14 interconnected together, which is different than a
15 cellular network.

16 But I see that the requirement here is
17 for the moving base station, which the Petitioner
18 and Dr. Ding have said is the relay station in
19 Vercauteren. The connection between the roaming
20 relay station and a fixed base station, when a
21 repeater is used, does not meet this limitation.

22 Q Okay. Let's move on to the next

1 paragraph, 122.

2 And in 122 it reads, "Second,
3 Vercauteren does not disclose that the RRS can
4 communicate with a 'plurality of fixed ports' over
5 a cellular wireless connection. In fact, at least
6 one claim of Vercauteren requires a scenario that
7 is opposite to the Challenged Claims."

8 Do you see that?

9 A Yes.

10 Q And you then include a block quote
11 immediately following the portion I just read from
12 Claim 8 of Vercauteren.

13 Do you see that?

14 A Yes.

15 Q Now, Claim 8, as you have it included
16 here reads, "at least one roaming relay station
17 connected to at least one base station via at
18 least one relay link (MTGCRN) at least partially
19 constituted by a mobile radio link (MTGCRN),"
20 correct?

21 A Yes.

22 Q So this claim that you have used to

1 support your statement in Paragraph 120 says "at
2 least one base station" is possible, correct?

3 A That's what it says.

4 Q So how does this claim from Vercauteren
5 require a scenario that is opposite of the
6 Challenged Claims that recite a plurality of fixed
7 radio ports?

8 A I think the key is in my block quote
9 for Claim 8 that you didn't read at the end, where
10 it says, "at least partly constituted by mobile
11 radio link (MTGCRN) ."

12 So this claim is saying that it's
13 partly constituted by a radio link, meaning that
14 the radio link can have a wired portion and a
15 wireless portion, as I just discussed.

16 Q And even in that portion of the claim
17 it says, "at least partially constituted by,"
18 which means that in certain cases it could be
19 "fully constituted by," correct?

20 A I'd agree with that.

21 Q Okay.

22 A But I would also say it also says it

1 doesn't have to be that. The claim is that it's
2 partially constituted.

3 To me, I included Claim 8 to support my
4 opinions and my interpretation of Vercauteren and
5 the diagram. So that's the main reason I included
6 Claim 8 here.

7 Q Gotcha. Thank you.

8 So back to your statement in
9 Paragraph 122.

10 You mention here that, "The Challenged
11 Claims require a cellular wireless connection."

12 Do you see that?

13 A You broke up at first. You need to
14 give me -- I heard "wireless cellular connection."

15 Q Sure. So in Paragraph 122 you're
16 indicating that the "Challenged Claims require a
17 cellular wireless connection," correct?

18 A Well, the claim example that I read
19 earlier for Claim 22 states "An apparatus adapted
20 to move in accordance with a movement of a mobile
21 unit moving relative to a plurality of fixed radio
22 ports."

1 The fixed radio ports, as we've
2 discussed before, are the conventional cellular
3 base stations as disclosed by the patent.

4 And so the receiver adapted to receive
5 a plurality of signals would be a plurality
6 from -- let me start over that sentence.

7 "A receiver adapted to receive a
8 plurality of signals, each of the plurality of
9 signals transmitted each of the plurality of fixed
10 radio ports," tells me that the signals being
11 received by the moveable base station are from the
12 conventional cellular base stations.

13 Q Okay. So what is your understanding,
14 then, of the term "cellular wireless connection"?

15 A You'd need to give me more context for
16 that kind of a link. And if you can tell me the
17 ends of the connection, I'll be happy to answer
18 your question.

19 Q I really, unfortunately, can't give you
20 any more clarity because I'm reading your words
21 from Paragraph 122 and I'm trying to get clarity
22 from you.

1 So if you can tell me what a "cellular
2 wireless connection," as you use that phrase in
3 Paragraph 122, and as you say, "is required by the
4 Challenged Claims," can you tell me what that term
5 means?

6 A Sure. And that's the context that I
7 needed. Paragraph 122 gives me the exact context
8 I needed for the cellular wireless connection. It
9 is what I just read, "a cellular wireless
10 connection is the radio frequency signal that is
11 transmitted from the plurality of fixed radio
12 ports."

13 Not only is it a radio frequency
14 connection but it also has a minimum frequency of
15 300 megahertz assigned. And I say that it's a
16 "cellular wireless connection," because it's a
17 radio frequency connection and it's from the
18 conventional or standard fixed ports, which I
19 believe we've established are the cellular base
20 stations.

21 Q Okay. So as long as a particular
22 connection has a minimum frequency of greater than

1 300 megahertz and involves a communication with a
2 cellular fixed based station, that connection
3 would constitute what you have in 122 as a
4 "cellular wireless connection," correct?

5 A A cellular wireless connection in the
6 context of Paragraph 122 requires a connection
7 that is wireless and it's directly transmitted
8 between the fixed base station and the destination
9 point, in this case, which is the moving base
10 station, and it's all wireless and the claim in
11 this Claim 22 that we're reading even requires
12 that it be above 300 megahertz.

13 Q Okay. Thank you.

14 If you could turn back to Paragraph 53
15 of your declaration, please.

16 A 6-3?

17 Q 5-3.

18 A Okay. I'm there.

19 Q Okay. And I believe you should be
20 familiar with this chart or charts that looked
21 similar to this from our previous days of
22 deposition.

1 But I want to direct you to the final
2 row in this chart, the row for mobile unit.

3 A Okay.

4 Q And similar to what we had discussed
5 the previous couple days, you indicate here that
6 the plain and ordinary meaning of mobile unit is
7 or includes "a device that must register with and
8 be able to directly communicate with the cellular
9 network," correct?

10 A Yes. As set forth in the specification
11 of the '904 patent.

12 Q Okay. And do you refute -- or
13 actually, let me rephrase it differently.

14 Do you believe that the mobile
15 terminals disclosed in Vercauteren do not disclose
16 the plain and ordinary meaning of mobile unit as
17 you have written here in this chart?

18 A I don't believe the mobile terminals in
19 Vercauteren meet the construction of the plain and
20 ordinary meaning as I have listed in Paragraph 53
21 of my declaration.

22 Q Is there a specific reason why you

1 believe that it doesn't meet that meaning?

2 A The Vercauteren patent is a big patent,
3 but I was just looking through my report. I don't
4 recall Vercauteren ever describing that the phones
5 of Vercauteren can register with a cellular
6 network. I also don't recall Vercauteren
7 discloses that the phones can directly communicate
8 with the cellular network. I was just reviewing
9 some of the various diagrams -- or figures that
10 Vercauteren provides, and I don't see any of that
11 direct communication in those diagrams.

12 Q Let's start by, since you have
13 Vercauteren in front of you, start by taking a
14 look at Figure 1 and on the left-hand side portion
15 there appears to be a connection between the
16 mobile terminals at the bottom and the fixed base
17 stations at the top that do not go through relay
18 stations RS on the right-hand side, correct?

19 A That's incorrect. As I pointed out
20 earlier, there was somewhat of a subpoint in one
21 of my earlier points. If we look carefully at
22 Figure 1, we see that the FBSSs, that are the

1 squares on the top part of the diagram, are inside
2 an oval, and that oval is referred to as the
3 "fixed layer."

4 Vercauteren states that the connections
5 between the mobile layer and the fixed base
6 stations are not direct, but it goes through
7 another layer. And so, again, as I've stated in
8 my declaration, Vercauteren is teaching away from
9 a traditional cellular network where a mobile
10 terminal would directly communicate with a fixed
11 base station. Instead, Vercauteren is saying let
12 me couple all the fixed base stations together and
13 then establish a layer that the mobile terminals
14 can then communicate with.

15 Q Okay. So let's take a look at
16 Column 7, Line 55.

17 So at Line 55, Vercauteren tells us
18 that "The roaming mobile terminals UT can be
19 coupled to the fixed base stations FBS of the
20 fixed level FL either directly by way of a direct
21 coverage mobile radio network DCMRN or indirectly
22 via an indirect coverage mobile radio network,

1 ICMRN linked to the intermediate level IL and
2 either a global coverage radio network GCRN or a
3 global coverage fixed network GCFN between the
4 intermediate level IL and the fixed level FL."

5 Do you see that?

6 A Yes.

7 Q So Vercauteren is explaining that the
8 mobile terminals can be coupled directly or
9 indirectly to the fixed base stations of the fixed
10 level, correct?

11 A It's describing something different
12 than the questions you're asking. The fact that
13 the base stations, the fixed base stations, are
14 still inside the fixed layer is the same
15 regardless of how the direct connection to the
16 fixed layer occurs.

17 If I look at Figure 1, what he's
18 explaining is that the mobile terminal can go up
19 the left side of Figure 1, which is labeled DCMRN,
20 which is in the quote you read or above it, or it
21 can indirectly go through it with the ICMRN. And
22 so the way that the mobile terminal in the mobile

1 layer can get to the MICM -- let me start over.

2 The way that the mobile terminal can
3 communicate with the fixed layer, the FL, is
4 either directly between the mobile layer over the
5 left side link that's labeled DCMRN or as the
6 passage you just read, that mobile terminal can go
7 over the mobile layer through the right-hand side
8 vertical line that's labeled ICMRN, and then after
9 it goes through the relay stations, connect
10 through the GCRN.

11 But my point is either one of those
12 lines, specifically the DCMRN or the GCRN, both
13 connect to the oval that's labeled FL. You don't
14 see any lines directly connecting to a fixed base
15 station from any of the vertical lines in
16 Figure 1. And the reason for that is what I
17 stated earlier, the fixed layer is a tightly
18 coupled layer of fixed base stations where the
19 paradigm or the method used in a traditional
20 cellular system is not used.

21 Q So as the term is used in Vercauteren
22 to identify fixed layer and mobile layer, as

1 you've just explained, what does the term "layer"
2 mean?

3 A Well, the first thing I'd like to
4 correct is I've been interpreting the L in FL and
5 ML as layer. I've just realized that Vercauteren
6 refers to those as level, a fixed level and a
7 mobile layer -- level. It still doesn't change
8 what I'm saying, I just want to make sure that my
9 acronym change is still correct. It's not layer,
10 but level. It's still -- all my comments would
11 still hold, just instead of the word level --
12 layer, it'd be level.

13 And I'll continue looking for the
14 definition of what the fixed level is.

15 Q You can keep looking if you'd liked,
16 and while you do, your previous answer you gave me
17 some pretty specific details as to why the
18 presence of the fixed level or fixed layer and the
19 presence of the mobile level or mobile layer meant
20 that there was not a direct connection between the
21 mobile terminals and the fixed based stations.

22 So it seemed to me that you had a

1 pretty precise way that you were interpreting
2 those terms.

3 Is that the case?

4 A And you've asked me the question and
5 I'm looking for the description that I was
6 referring to. And so hopefully I'll find it here
7 in short order.

8 Well, let me, if I may, read these as I
9 get to -- the Vercauteren's patent is quite large
10 and so I prefer not to try to remember these, and
11 so if it's all right with you, I'll provide the
12 explanation or provide my answer in parts as I go
13 through the patent.

14 The first part I'm reading from is
15 Column 11, and it starts at Line 11, where it
16 states, "The later flexibility results in a
17 particular" -- "in particular from the fact that
18 mobile communication network MCN allows each relay
19 station to be coupled to a plurality of base
20 stations via appropriate relay links. In this way
21 the relay station RS3 is coupled to both the fixed
22 based stations FBS1 and FBS2. Such multiple relay

1 links are possible thanks to the fact that they
2 are not required to have predetermined
3 characteristics and can for instance be obtained
4 by choosing relay links at least partly
5 constituted by links of fixed telecommunication
6 network FTN."

7 And so I'll give a brief description
8 and then keep looking. So this is saying here
9 that a relay station connects to multiple fixed
10 base stations. There is not -- using its words,
11 have the predetermined characteristics. So the
12 way that I believe one of ordinary skill would
13 interpret that is it's not like a conventional
14 cellular network and indeed this description is
15 contrary to the way a traditional cellular network
16 in connections to fixed base stations would be.
17 That's one.

18 I can continue down. It's not the one
19 I was thinking of. There's a more specific
20 description of the fixed layer -- level, that I'm
21 recalling.

22 Q Let's maybe take a break from reviewing

1 the rest of Vercauteren for a second.

2 Let me ask you a slightly different
3 question and I can hopefully point you to a
4 particular part this time.

5 So if we flip back to the end of
6 Vercauteren and if we can look at Claim 18.

7 A Okay. I'm there.

8 Q Okay. And Claim 18 relates to "a
9 mobile communication network" MCN, correct?

10 A Yes. "The MCN" is defined by
11 Vercauteren.

12 Q And that mobile communication network
13 in Claim 18 includes the following elements: The
14 mobile terminals, MT, relay stations, RS, and
15 fixed base stations, FSB, among other things,
16 correct?

17 A It's a long claim, but I see those
18 three components.

19 Q Okay. So if we look in Column 22,
20 we're still in Claim 18 here, around Line 6, it
21 begins to talk about the fixed base stations. And
22 in this portion of the claim it recites that "The

1 fixed base stations can be connected to one of
2 said high-powered vehicle-operated mobile
3 terminals of said mobile terminals MT by a direct
4 coverage mobile radio network access link DCMRN
5 characterized by a" -- "by direct coverage mobile
6 radio network access link information."

7 Do you see that?

8 A I see those words.

9 Q So this is slightly different than the
10 previous portion that we read as in it does not
11 include any fixed level or layer and does not
12 include any fixed -- excuse me, mobile level or
13 layer, correct?

14 A Well, we both know that there's a lot
15 of interpretation that goes into a long claim here
16 and a whole long process to interpret what's going
17 on in a claim.

18 But as I look at the claim, I can see
19 that the connection is still to a fixed base
20 station through the fixed level. There's nothing
21 in this claim that says that the MCN -- the way
22 the MCN is designed that this connection can't be

1 through the fixed level, which is that oval on
2 Figure 1.

3 Q I would agree with you on that, that
4 just the clear long legal precedent on how you
5 interpret claims is that it doesn't preclude
6 additional elements or additional information.
7 However, you would agree that at least in some
8 circumstances Claim 18 can be satisfied without
9 the fixed level or layer or without the mobile
10 level or layer because they are not expressly
11 written limitations of the claim, correct?

12 MR. SMITH: Object to form.

13 A I wouldn't be able to interpret the
14 claim on the fly here; I haven't analyzed it in
15 detail. But I can tell you reading this claim
16 initially and then using the acronyms that it's
17 referring to as a direct coverage mobile radio
18 access link, DCMRN, I'm looking back to Figure 1
19 and it's clear to me that the left-hand vertical
20 connection between the mobile level and the fixed
21 level connects to the fixed level of the DCMRN; it
22 does not have any lines connecting directly to any

1 of the FBSs or fixed base stations.

2 So the way I would interpret this claim
3 is that connection would be, just looking at it
4 now without a lot of detailed analysis, I don't
5 believe this is requiring that a DCMRN link be
6 redrawn on Figure 1 any differently than the way
7 it's drawn here, looking at the claim. As a
8 matter of fact, the claim begins with "A mobile
9 communication network," and the MCN is
10 specifically designed -- is specifically disclosed
11 by Vercauteren. This Figure 1 is the MCN.

12 So I disagree with your
13 characterization of Claim 18 that it requires a
14 direct connection for the DCMRN to a fixed base
15 station. It shows the opposite in Figure 1.

16 Q So is it your understanding that when
17 you interpret a claim, that that claim needs to
18 have every element included in the figure to which
19 it corresponds?

20 A That mischaracterizes what I've said.

21 I'll tell you what, if you're going to
22 ask me a lot more questions about Claim 18, I'm

1 going to need at least two hours to go through
2 Claim 18. It is a -- almost a column long. As a
3 matter of fact, it's over a column in length. If
4 you're going to ask me any more questions about
5 Claim 18, especially a lot of legal-oriented
6 questions, I need at least two hours of quality
7 time to review that Claim 18, and then I'd be
8 happy to answer it. But I'm not happy or not
9 comfortable answering any more detailed questions
10 about a claim that is so long that I haven't
11 previously analyzed nor was brought up by the
12 Petitioner or Dr. Ding.

13 So this is a question for me on the fly
14 and that's my position.

15 Q Okay. Well, maybe we'll go through the
16 process of having you spend two hours analyzing
17 that column. We'll see if that's necessary.
18 Maybe it will be, maybe it won't.

19 But for our purposes for right now, let
20 me ask the same question that I did previously,
21 which was not directed specifically to Claim 18 of
22 Vercauteren, and instead was a general question

1 about your understanding of how claims of a patent
2 should be interpreted.

3 So my question was, is it your
4 understanding that when you interpret a claim,
5 that claim needs to include every element shown in
6 the figure to which it corresponds?

7 MR. SMITH: Objection to form.

8 A I don't know. That's sounds like a
9 legal question more to me. I would say it
10 depends. I would say it depends on the claim I'm
11 reading and what's stated by the claim.

12 I've read thousands of claims. It may
13 be true, it may not be true. In general, again,
14 that's sounds more like a legal question that I
15 can't answer just in general.

16 Q So in some cases the claim might need
17 to have every limitation in the figure, but in
18 other cases it may not, correct?

19 MR. SMITH: Object to form.

20 A I just told you I can't answer that
21 question in general.

22 Q Okay. So let's do a specific question

1 on a specific claim that you have analyzed.

2 Let's take a look at the '904 patent.

3 And let's take a look at Claim 22.

4 A I'm there.

5 Q Okay. Figure 1 of the '904 patent
6 illustrates the claimed moving base station being
7 implemented on a rail system traveling next to a
8 roadway.

9 My question is have you interpreted
10 Claim 22 of the '904 patent to require the moving
11 base station to be implemented on a rail system as
12 shown in Figure 1?

13 A I've interpreted Claim 22 to be "An
14 apparatus adapted to move in accordance with a
15 movement of a mobile unit moving relative to a
16 plurality of fixed radio ports, the apparatus
17 comprising," the components that it listed.

18 I don't see any words regarding roadway
19 or a --

20 Q Okay. So because you do not see the
21 words "roadway" or "rail" in Claim 22 of the '904
22 patent, you're interpreting those words as not

1 being requirements of that claim, correct?

2 A Yeah. I can look at the claim and
3 interpret the claim. But specifically I don't see
4 anywhere where roadway is required in Claim 22.
5 So -- and I don't see any construction by the
6 court that requires roadway to be included. So I
7 typically wouldn't include roadway with Claim 22,
8 nor have I included it in all my analysis for
9 Claim 22.

10 Q Okay. Great. So then I think we're on
11 the same page that even though Figure 1 shows
12 roadways and a moving base station being
13 implemented on a rail system, you have not
14 interpreted those elements as shown in Figure 1 to
15 be included in Claim 22, correct?

16 A I definitely understand there's
17 multiple embodiments and there's no specific. It
18 could be a different environment. There might be
19 different reasons. But I don't see the words
20 "roadway" in 22 and I don't have a construction
21 saying that roadway should be associated with any
22 of the terms used for Claim 22 so, therefore, I

1 have not included roadway as part of my Claim 22
2 analysis.

3 Q Okay. I think we are at a point of
4 commonality now. So let's go back to your
5 declaration. And let's take a look at
6 Paragraph 125.

7 A I'm there.

8 Q Okay. And in the second sentence of
9 Paragraph 125 you state that "This is" -- let me
10 read, I guess, the -- you know what, why don't --
11 probably makes more sense to have you just go
12 ahead and read Paragraph 125 to yourself and then
13 once you have had a chance to look at it I'll ask
14 you my question.

15 And if it helps streamline I'm not
16 going to ask any questions about the block quotes
17 in that paragraph.

18 A Okay. I'm ready for you to ask the
19 question.

20 Q Okay. So in this particular paragraph
21 you state that "the Challenged Claims require a
22 cellular phone that is capable of directly

1 communicating with a fixed base station using a
2 standard cellular protocol, communicating with a
3 moving base station using a standard cellular
4 protocol and is capable of registering with a
5 cellular network."

6 Do you see that?

7 A Yes.

8 Q And so clarify, is it your opinion that
9 the Challenged Claims of the '904 patent require
10 the mobile device to be a cellular phone, as
11 you've stated here?

12 A Well, I'll answer your question this
13 way: The way I've interpreted the Challenged
14 Claims for a mobile unit or variations of a mobile
15 unit, I'm just looking at Claim 22 to see how it
16 refers to it, they vary a little bit.

17 Claim 22 uses the word "mobile unit" so
18 I've interpreted the words mobile unit in Claim 22
19 and the other Challenged Claims to be the same as
20 the interpretation I provided in Claim 53 of my
21 declaration, which is the last row on the table.

22 Q Okay. So then it doesn't necessarily

1 need to be a cellular phone, correct?

2 A I don't know how it could be -- not be
3 a cellular phone if it's a phone that can register
4 with and directly communicate with a cellular
5 network. By definition, a phone that can
6 directly -- that can register and be able to
7 directly communicate with a cellular network is a
8 cellular phone. I don't know, maybe we have a
9 definition problem here. But if a phone is
10 capable of communicating with the cellular
11 network, I would say it, at least in part, is a
12 cellular phone.

13 Q Well, let me ask it this way: Your
14 interpretation of mobile device or mobile unit, as
15 it's recited in the Challenged Claims, would that
16 include a tablet with cellular capabilities?

17 A Well, if the mobile unit -- if a mobile
18 unit is a tablet that can register and be able to
19 directly communicate with the cellular network, I
20 would think that would be a mobile unit.

21 Q Okay. So it doesn't need to be a
22 phone, per se, you're more focusing on the

1 cellular portion of that term, correct?

2 A Well, yes, the cellular and the
3 communicating. I didn't include voice
4 communications if it would have, for instance, the
5 reason why I thought about it for a minute was if
6 this were to say directly have a voice call or
7 voice communications, then I said -- then I would
8 say a tablet probably doesn't do that, depending
9 upon the functionality of the tablet. That's not
10 what I'm saying here. So to be able to directly
11 communicate with the cellular network would
12 include a data connection that was directly there.

13 Q Would a radio modem fall under the
14 plain and ordinary meaning of mobile unit as you
15 have so interpreted it?

16 A It depends. It depends on what you
17 mean by "radio modem." What do you mean by that?

18 Q Do you have an understanding of what
19 the term radio modem meant in 1995?

20 A Yes. There were many different types.
21 And there were types that were used for cellular
22 networks. So if I wanted to go out and buy a, to

1 use your words, a "radio modem" that I could
2 insert into my computer or my laptop in 1995, I
3 would look at what type of radio modem it was to
4 make sure it was compatible with this specific
5 cellular network standard.

6 Back in 1995, you have two main
7 operators, you had AT&T that were selling GSM
8 radio modems and you had Verizon that was selling
9 IS-95 CDMA radio modems. Both of those radio
10 modems, that would operate on either the AT&T
11 cellular network or the Verizon cellular network,
12 would then be able to register and directly
13 communicate with the respective cellular network.

14 Q Okay. So if I just used the phrase
15 "radio modem in the 1995 time frame," that could
16 include modems with cellular capabilities but
17 could also include modems without cellular
18 capabilities, correct?

19 A A radio modem would only be considered
20 to be a mobile unit if that radio modem was
21 capable of registering with and able to directly
22 communicate with a cellular network.

1 Q And if I understand you correctly, some
2 radio modems in the 1995 time frame had that
3 ability and some radio modems in the 1995 time
4 frame did not; is that correct?

5 A That's correct. Some were designed to
6 work with other types of wireless networks but not
7 cellular networks.

8 Q Okay.

9 MR. RICHARDSON: All right. I know
10 we've been going for a little over an hour, why
11 don't we take another break.

12 THE WITNESS: Okay.

13 MR. SMITH: 4:15?

14 MR. RICHARDSON: 15?

15 THE WITNESS: Let's do 4:20. I'm going
16 to need a few more minutes.

17 MR. SMITH: 4:20, please.

18 MR. RICHARDSON: 4:20.

19 (Recess taken from 5:04 p.m. to
20 5:21 p.m.)

21 BY MR. RICHARDSON:

22 Q All right. Mr. Lanning, are you ready

1 to go?

2 A Yes.

3 Q Okay. Great.

4 All right. So let's move forward in
5 your declaration to Paragraph 134, please.

6 A Okay.

7 Q Paragraph 134 states that "Vercauteren
8 discloses below that a Wireless Terminal for its
9 invention can be used to replace a cordless phone.
10 As I described in detail in Section VII.B above,
11 the Challenged Claims are not for a Cordless
12 Phone."

13 You see that, correct?

14 A Yes.

15 Q Okay. So I see here that you're saying
16 that Vercauteren's wireless terminals can replace
17 the cordless phone.

18 Is it also your opinion that
19 Vercauteren's wireless terminals are cordless
20 phones?

21 A No. That's not what I'm saying in
22 Paragraph 134. I'm saying what I'm saying, and

1 that's Vercauteren discloses below that a wireless
2 terminal for its invention can be used to replace
3 the cordless phone. The quote that I have -- the
4 block quote that I've included, the second one, it
5 says, "the same hand-held terminal can be used in
6 both typically cellular and typically cordless
7 environments."

8 Again, it says a "typically cellular"
9 environment because as we discussed earlier,
10 Vercauteren actually teaches that its invention is
11 not a cellular network but something different
12 than that. And so it's saying it's typically a
13 cellular phone. So I would think that's -- that
14 part of the phrase would be more than a cordless
15 phone.

16 Q Okay. Good.

17 So let's move forward to Paragraph 227,
18 please.

19 A I'm there.

20 Q Okay. And in Paragraph 227, it states
21 that "However, Petitioner and Dr. Ding are grossly
22 mischaracterizing Vercauteren. First, only one

1 type of Relay Station that is disclosed to be
2 'moveable' by Vercauteren is the Roaming Relay
3 Station (RRS). All the other types of Relay
4 Stations (RS) are fixed in place. Therefore, the
5 annotated Figure 2 they have used for their
6 support of the required apparatus (moveable base
7 station) is incorrect as disclosed by the
8 Vercauteren passage below. Specifically, if a RS
9 has a 'specific coverage area' for the mobiles, it
10 cannot be moveable."

11 You see that, correct?

12 A Yes.

13 Q Okay. So is it your opinion that the
14 relay stations identified as RS1 through RS6 in
15 Vercauteren Figure 2, shown just above
16 Paragraph 227, is it your opinion that each of
17 those relay stations cannot be a roaming relay
18 station, RRS?

19 A For the example that you've used in
20 Figure 2 and that you've annotated because of the
21 solid line that is there and drawn between MT1 and
22 RS2 and between RS2 and FBS1, that cannot be a

1 roaming relay station. Those are solid lines
2 representing wired communications. And so this is
3 one of the mischaracterizations that I'm referring
4 to.

5 RS2, in this example for Figure 2, can
6 definitely not be a roaming relay station.

7 Q Okay. But then you would agree that
8 there is nothing that prevents RS1, RS3, RS4, 5,
9 and 6 from being roaming relay stations, correct?

10 A And I'm turning -- I've turned a couple
11 pages to find the annotated figure that I have of
12 Figure 5 for Vercauteren on Page 132 of my report,
13 part of Paragraph 231.

14 The only way that RS1 through RS6 can
15 be considered to be a remote relay station is if
16 it shows the connection of the MTGCRN between the
17 relay station and the fixed level.

18 And so that has to be interpreted. As
19 I stated before, RS2 is not showing an MTGCRN
20 connection between RS2 and FBS1 so it cannot be a
21 roaming relay station.

22 I also should add to that, I was just

1 scanning through my block quotes and I'm looking
2 at the block quote at the bottom of Page 129 --
3 sorry, no, let me make sure I'm reading this
4 correctly.

5 I believe it's the block quote where at
6 the bottom of Page 129 the last one in the middle
7 it says, "Each of the relay stations RS1-RS6 has a
8 specific coverage area which is a function of the
9 transmit power of the mobile terminal 1 and which
10 is henceforth called a micro-cell."

11 So for Figure 2, the patent,
12 Vercauteren, is describing RS1 through RS6 as each
13 having a specific coverage area. Therefore, those
14 relay stations are not roaming relay stations
15 because, as the name implies for the roaming part
16 of the relay station, it's moveable and will not
17 have a specific coverage area. Its coverage area
18 will move as the roaming relay station moves.

19 So I guess to specifically -- more
20 specifically answer your question, I believe the
21 intent of Figure 2 is to -- of Vercauteren is to
22 show fixed relay stations RS1 through RS6.

1 COURT REPORTER: You're on mute, Ryan.
2 I can't hear you.

3 MR. RICHARDSON: Sorry, I don't know
4 how that got switched to mute. Let me ask the
5 question again, I apologize.

6 Q So if we're looking at Column 8,
7 Line 44 in Vercauteren, here Vercauteren explains
8 that "The relay network RN contains at least two
9 types of relay links, fixed links known as the
10 global coverage fixed network GCFN and radio links
11 known as the global coverage radio network GCRN.
12 To each type of relay link corresponds a distinct
13 type of relay station RS."

14 Then in the next sentence is what you
15 were referring to, "Each type of relay station RS
16 can be used to provide a specific coverage area
17 for the mobile terminals and hence to adapt to
18 mobile network MCN to a specific environment
19 wherein the mobile terminal may be situated."

20 Next sentence, "For instance, a type
21 corresponding to the global coverage radio network
22 GCRN may be used as a relay station mounted on a

1 train."

2 So here, Vercauteren explains RS
3 includes two types of relay stations, fixed and
4 roaming, each type has a specific coverage area,
5 including the ones mounted on a train, correct?

6 A That's not how I'm reading it. I'm
7 reading it that RS, the remote -- I agree with
8 that what you've read and what we've stated. I've
9 stated in my declaration there are two types of
10 relay stations, specifically, those types are
11 fixed and roaming. And so to determine that there
12 is anything that moves we need to look at the
13 disclosures of Vercauteren regarding the roaming
14 relay station.

15 If it's a roaming relay station,
16 especially if it's a roaming relay station on a
17 train, its coverage area is not fixed, as in the
18 ones listed RS1 through RS6 are in Figure 2. It
19 is variable and moves, for example, if it's on a
20 train, the roaming relay station moves with the
21 train and so does its coverage area.

22 Q So let me maybe narrow the question

1 down because that was a long question I asked you
2 previously.

3 Do you disagree with the text of
4 Vercauteren at Line 50, which says that "Each type
5 of relay station can be used to provide a specific
6 coverage area"?

7 A Not at all. It's based on the power.
8 The point that I'm making is, yes, each relay
9 station has their coverage area, but for the fixed
10 relay stations that coverage area is fixed. For
11 the roaming relay station that moves, it's pretty
12 obvious to me that its coverage area will move as
13 the roaming relay station moves.

14 Q Okay. So then when you say in
15 Paragraph 227 that "If a RS has a specific
16 coverage area for mobiles it cannot be moveable,"
17 that's -- excuse me -- let me rephrase.

18 You see the portion in Paragraph 227
19 where it states, "If a RS has a specific coverage
20 area for mobiles it cannot be moveable," correct?

21 A It's pretty straightforward. If they
22 have a fixed or a specific coverage area, meaning

1 that that coverage area is specific, meaning it
2 stays the same. That is not a roaming relay
3 station.

4 Q So then you disagree with the text
5 written in Line 50, Column 8, of Vercauteren, that
6 says each type of relay station, fixed and radio,
7 can be used to provide a specific coverage area;
8 you disagree with that statement?

9 A I do not disagree with that statement.
10 Matter of fact, I've included that statement in my
11 declaration, and I've been very clear with other
12 statements wherever Vercauteren discusses the
13 fixed relay stations and then he says there's one
14 other embodiment, which is a roaming relay
15 station. And that roaming relay station has its
16 coverage area that moves.

17 I mean, to me that's pretty obvious.
18 If the relay station is moving, its coverage area
19 moves with it. If a fixed relay station is in
20 place, it has a fixed coverage area that is
21 stationary.

22 Q Okay.

1 A Those are two basic things. And going
2 back to the annotated Figure 2 that has been used
3 by Dr. Ding and the Petitioner that I've included
4 in Paragraph 226, this is straight up wrong
5 because the annotated RS2 is a fixed relay
6 station, not a roaming relay station.

7 Q Okay. So my previous question was 'Do
8 you disagree with the text written in Line 50,
9 Column 8 of Vercauteren?"

10 And you answered, the first sentence
11 was, "I do not disagree with that statement."

12 So let me ask the question in reverse.

13 Do you agree with the statement that
14 mobile -- excuse me -- do you agree with the
15 statement that roaming relay stations can be used
16 to provide a specific coverage area for the mobile
17 terminals, MT, as written at Line 50, Column 8?

18 A I agree with the text that each relay
19 station has its specific coverage area. And as I
20 stated, one would understand that the fixed relay
21 stations have a fixed area because they're fixed
22 in place, and the roaming relay station, that

1 coverage area moves as the roaming relay station
2 moves.

3 Q And you would agree that Vercauteren
4 uses the term "specific coverage area" the same
5 way regardless of whether it's talking about the
6 fixed relay stations or the roaming relay
7 stations, correct?

8 A Vercauteren in this one sentence,
9 without the context of all of the other sentences
10 in regard, is saying each relay station has a
11 specific coverage area for mobile terminals, okay?
12 And to a specific environment where the mobile
13 terminals may be situated.

14 Again, that is a sentence I fully agree
15 with. Then you have to read the other sentences
16 regarding fixed relay stations and roaming relay
17 stations. And, again, I say it's pretty
18 reasonable to say that the specific coverage area
19 for a roaming relay station moves as the roaming
20 relay station moves.

21 And, again, this started with my point
22 of the relay station 2 has fixed links drawn

1 between the relay station 2 and the fixed level,
2 meaning it is fixed.

3 So this is definitely not a roaming
4 relay station. That's where we started this whole
5 conversation in regard to the figure that's been
6 used by Dr. Ding in his declaration that I've
7 included in Paragraph 226.

8 Q So if -- when referring to Figure 2 you
9 mean that RS2 has fixed links between the base
10 station and the mobile terminal, if you mean that
11 those fixed links are there because of the solid
12 lines connecting the mobile terminal to RS2 and
13 connecting RS2 to FBS1, you would agree that those
14 solid lines are not present with respect to RS1,
15 3, 4, 5, and 6, correct?

16 A That is true. So frankly, I think
17 Dr. Ding and Petitioner could have used any one of
18 the other six and that -- those could have
19 represented possibly a roaming relay station. But
20 the one they chose -- and then I need to look at
21 Figure 2 to see what was annotated. Give me a
22 minute.

1 Figure 2 is drawn, in Figure 2 the
2 solid line along with the dashed line, I think to
3 be specific and clear, let me look at what
4 Vercauteren says is the solid line for RS2.

5 If you know where that's at, I'm happy
6 to page towards that instead of scanning through.

7 Q So my quick scan of Vercauteren did not
8 uncover any mention of solid line or solid in any
9 form. So I'm not sure if he specifically
10 identifies what is meant by the solid line.

11 A Well, there's some consistency here and
12 I just found it scanning, there's probably some
13 other references. But if I look at Column 10,
14 Line 22. It says -- and again, it's only in
15 regard to the dashed lines -- "In the present
16 example the result of the above check is that the
17 mobile terminal 1 can communicate via the relay
18 stations RS1 and" -- RS1-RS3 and RS5 shown in the
19 dashed lines in Figure 2."

20 So if I look at the mobile in the
21 dashed lines, that is a wireless interface.

22 So as a normal convention, the dashed

1 line is the wireless interface, the solid line is
2 the wired interface.

3 Again, if you've looked for it -- I
4 don't have the luxury of doing an electronic
5 search for various terms. I would have to look
6 through all of Vercauteren to find that. But I
7 feel very strongly that the solid line is
8 representing a wired connection between RS2 and
9 FBS1.

10 Q And that's fine. If we take your
11 position that the solid line shown in Figure 2
12 equates to a fixed connection rather than a
13 wireless connection, you would agree, though, that
14 Figure 2, in addition to the solid lines
15 connecting RS2 to FSB1 and MT1, there are also
16 shown dashed lines, correct?

17 A That's true. But it doesn't change the
18 fact that -- even the dashed line being there
19 doesn't change the fact that the solid line means
20 it's a wired connection; AKA that RS2 cannot move
21 unless it wants to rip the wires out of the
22 ground.

1 Q Okay. So let's put aside Vercauteren
2 and if you can pull out the physical copy that you
3 have of the Forssén reference.

4 MR. RICHARDSON: And if we can also,
5 please, pull up on the screen the Forssén
6 reference, which is Patent No. 5,566,209.

7 MR. SMITH: Hey, Ryan, we had mentioned
8 that we might need one other short break.

9 Would now be a good time since we're
10 changing references?

11 MR. RICHARDSON: That's fine, if you
12 want to take one now.

13 MR. SMITH: Let's take one now, come
14 back at 5:00, and then we'll shoot to finish up at
15 6 and have an hour run there.

16 MR. RICHARDSON: Okay.

17 (Recess taken from 5:50 p.m. to
18 6:02 p.m.)

19 BY MR. RICHARDSON:

20 Q So before we took a break, I was asking
21 you to pull out your physical copy of the Forssén
22 patent.

1 MR. RICHARDSON: And also if we can
2 please pull up on the screen a copy of the Forssén
3 patent as well, and that was Patent No. 5,566,209.

4 AV TECHNICIAN: And that has been
5 marked as Exhibit 6, counsel.

6 MR. RICHARDSON: Thank you.

7 (Lanning Exhibit 6 marked for
8 identification and attached to the transcript.)

9 Q And again, if you can just quickly kind
10 of leaf through the copy that you have in front of
11 you to make sure there's no markings, highlights,
12 or annotations.

13 A It's a clean document.

14 Q Great. And then it looks, at least
15 from the first pages, the copy that you have in
16 front of you matches the document that's displayed
17 on the screen, correct?

18 A Yes.

19 Q Okay. Great.

20 MR. RICHARDSON: We can pull that
21 document down, please. Thank you.

22 Q Now, Mr. Lanning, if you want to turn

1 to Paragraph 136 of your declaration.

2 A Okay. I'm there.

3 Q All right. Now, the last sentence in
4 Paragraph 136 states that "The Forssén invention
5 is only sending duplicate RF signals from a single
6 base station and is not sending a plurality of
7 signals from multiple base stations as required by
8 the Challenged Claims and described in more detail
9 below."

10 Do you see that?

11 A Yes.

12 Q Okay. Is it your opinion that Forssén
13 discloses receiving multiple signals at a
14 receiver?

15 A So as I state in Paragraph 139 of my
16 declaration, "Figure 2 below also confirms that
17 the Forssen base station is only receiving one
18 duplicated RF signal from one mobile station. The
19 multiple antennas labelled as 12 receive multiple
20 RF signals and the 'MLSE Detector 24' receives the
21 multiple signals' to detect the data signal from
22 each mobile station in the received signal.'"

1 So I believe your question was -- I
2 think the best way for me to answer it is the base
3 station receives multiple versions of the same
4 signal that is transmitted from a mobile station.

5 Q Okay. And is it your opinion that --
6 I'm pointing to Paragraph 139 here. Is it your
7 opinion that the multiple RF signals that are
8 received by Forssén's antennas 12 correspond to
9 the plurality of signals recited in the Challenged
10 Claims?

11 A What Challenged Claims are you
12 referring to specifically? There's different
13 versions of a plurality of antennas, different
14 versions regarding the signals.

15 So in order to answer your question, I
16 have to understand specifically which claim or
17 claims you're referring to.

18 Q So if we turn back to Paragraph 136,
19 which is where we began our questioning. I am
20 referring to whatever Challenged Claims you are
21 referring to in the final sentence of that
22 paragraph?

1 A Okay. I'm looking at Claim 22 as an
2 example. And the Claim 22 "requires a receiver
3 that's adapted to receive a plurality of signals,
4 each of the plurality signals transmitted from
5 each of the plurality of fixed radio ports within
6 a frequency band having the lower limit greater
7 than 300 megahertz."

8 And so I'm explaining that Forssén
9 doesn't describe or disclose the concept of a
10 plurality of signals, each being transmitted by a
11 plurality of fixed radio ports.

12 Instead, Forssén is disclosing multiple
13 versions of the same signals that are being
14 transmitted from a single base station or a single
15 radio port.

16 Q Okay. If we can put aside the -- where
17 those signals originate from for a second, and
18 just focus on the multiple, I think you said
19 "duplicate," but let me look at your answer
20 specifically here.

21 Okay. So you said, "Forssén discloses
22 multiple versions of the same signal."

1 Is it your opinion that multiple
2 versions of the same signal would not constitute a
3 plurality of signals?

4 A Multiple versions of the same signal is
5 a plurality of signals. But the claim limitation
6 doesn't stop there.

7 Q That's fair. That's fair.

8 A The plurality of signals coming from a
9 plurality of fixed radio ports. So the idea is
10 the plurality of signals isn't coming from a
11 single radio port, it's coming from a plurality of
12 fixed radio ports.

13 Q Understood. Okay. Good. I think
14 we're moving towards clarification.

15 So the issue that you're identifying in
16 Paragraph 136 is where those plurality of signals
17 originate from.

18 So if we can turn to the Forssén
19 patent. And if we can look at Column 2 and
20 Line 31.

21 And in this portion of the patent it
22 says, "In one embodiment of the present

1 invention -- excuse me. Start over.

2 This portion of the patent states that
3 "One embodiment of the present invention discloses
4 a receiver with an antenna array for use in a
5 cellular communication system containing a
6 plurality of mobile stations," correct?

7 A Yes.

8 Q And so the receiver with the antenna
9 array is intended to be used in a system
10 containing a plurality of mobile stations,
11 correct?

12 A The patent says what it says.

13 Are you asking me to interpret what
14 it's saying there?

15 Q No, I'm not asking you. I know we've
16 had some issues in the past about the text of
17 certain patents. And so I just wanted to make
18 sure that the language we just read here is
19 something that you agree with?

20 A Well, there's an antenna array, it says
21 there's "an antenna array that's for use in a
22 cellular communication system containing a

1 plurality of mobile stations."

2 That's all this sentence says. It
3 doesn't say where the antenna array is. It
4 doesn't say anything about signals or anything
5 else. It just simply says there's an antenna
6 array in a cellular communication system and that
7 cellular system -- communication system has a
8 plurality of mobile stations.

9 Q Okay. Fair enough.

10 If we can turn back to your declaration
11 and let's move forward to Paragraph 158.

12 A Okay.

13 Q All right. And about halfway through
14 the paragraph here it states that "If a POSITA
15 were to implement, for example, Forssén's receiver
16 with its spatially separated antennas as
17 Petitioner proposes, this would require much new
18 circuitry not disclosed in either Vercauteren or
19 Forssén," and then you go on to list three
20 different functions here.

21 And then the next sentence reads,
22 "Therefore, Dr. Ding's proposed combination of

1 added complexity would negate the benefit of the
2 Roaming Relay Station's limited 'minimum
3 intelligence' due to the 'commercial drawback'
4 that would occur if such complex technology was
5 implemented in each Roaming Relay Station because
6 it 'would require huge investments.'"

7 Do you see that?

8 A Yes.

9 Q Okay. So I think similar to where --
10 or in some of our earlier discussions today and
11 yesterday, but correct me if I'm wrong, your
12 testimony here in Paragraph 158 is that -- is not
13 that it would be technically impossible to
14 implement Forssén's receiver and spatially
15 separated antennas into Vercauteren's relay
16 stations, but instead if there are commercial
17 reasons why you would not do so; is that correct?

18 A No, it's not. The paragraph speaks for
19 itself. And while I agree that one of the reasons
20 is the commercial investments, there's also the
21 added technical complexity for doing so. And I
22 need to explain, as I think there are previous

1 paragraphs or my paragraphs regarding Forssén --
2 sorry -- regarding Vercauteren.

3 Vercauteren clearly teaches away from
4 the relay stations having any complex technology.
5 The main thrust of the Vercauteren invention is to
6 do something different than a cellular network by
7 rolling out relay stations that have minimal
8 complexity and minimal commercial costs and using
9 these relay stations to relay the signals with its
10 specialized network it refers to the MCN.

11 So the quote that I'm using is the --
12 in the last sentence of Paragraph 158 that I've
13 used, "it 'would require huge investments,'" is
14 from Vercauteren. And this minimum intelligence
15 is also a quote that I have in the same paragraph,
16 is from Vercauteren.

17 So I'm making the points that
18 Vercauteren has gone out of its way to minimize
19 the intelligence and minimize the complexity and
20 minimize the costs that are in the relay stations.

21 If those are not kept, then the
22 Vercauteren invention is flawed, meaning the whole

1 design is flawed.

2 So this paragraph, I'm making the
3 points that adding a Forssén invention to the
4 relay stations is in direct conflict with the
5 objectives that are stated by Vercauteren for its
6 invention.

7 Q And I fully understand that it's your
8 position that a person of ordinary skill in the
9 art would not be motivated to make this proposed
10 combination and that there are portions of
11 Vercauteren that talk about reasons why somebody
12 might not be motivated to make the proposed
13 combination. But my question is slightly
14 different.

15 My question is would it be technically
16 impossible to combine the Forssén receiver and
17 separate -- spatially separated antennas with
18 Vercauteren's relay station?

19 A You've used the words "technically
20 impossible," which I don't believe is a test for
21 determining whether it's a reasonable combination
22 for what one of ordinary skill would consider.

1 But I'll answer your question in this
2 way similar to the way I've asked -- answered
3 similar questions, with enough time and money
4 anything's possible. So it wouldn't be
5 technically impossible, but there's -- it would
6 not be probable for a person of ordinary skill in
7 the art to be motivated to combine Vercauteren's
8 relay station with the functionality of Forssén.
9 The relay station in Vercauteren, to use some of
10 the vernacular, almost technical terms, has been
11 dumbed down as much as possible, meaning it's
12 taken all of the base station functionality out of
13 the relay station to make them as inexpensive as
14 possible and push all that functionality back into
15 the fixed base stations.

16 So there's virtually no circuitry of
17 the type required to combine Forssén's plurality
18 of antennas with the relay station. It's
19 nonexistent.

20 So one of ordinary skill in the art
21 would not even start thinking about putting those
22 two together. I would even venture to say that

1 Vercauteren himself would reject an invention like
2 Forssén because, again, it would go against the
3 technical as well as the commercial objectives of
4 the inventions disclosed by Vercauteren.

5 Q Fair enough. So you've pointed out a
6 couple times now that Vercauteren has commercial
7 reasons -- let me phrase it this way: You've
8 identified a couple times where Vercauteren says
9 that the roaming relay stations may have minimum
10 intelligence due to commercial drawbacks.

11 So understanding that and putting that
12 aside for a second. Do you disagree with the
13 statement that if Forssén's spatially separated
14 antennas were added to Vercauteren's relay
15 stations, that the relay stations would have an
16 improved ability to handle multipath fading?

17 A No. Because the relay stations are not
18 designed for that. You keep saying, well, I'm
19 only using commercial requirements. No, I'm not.
20 I've provided specific technical requirements.
21 The technical requirements for the relay stations
22 were to be as basic as possible from a technical

1 point of view and not provide any more technology
2 in them than possible.

3 So the Vercauteren relay stations do
4 not have any circuitry to support multiple
5 antennas, no circuitry to receive the signals that
6 would be received from the multiple antennas.
7 There's no circuitry in Vercauteren in the relay
8 station to determine, after the signals are
9 received, which one of those signals may be the
10 best signal nor is there any circuitry in the
11 Vercauteren relay stations to combine multiple --
12 a plurality of signals into a single signal, if
13 that's required.

14 So there's no foundation, technically,
15 in the Vercauteren relay stations to provide the
16 multiple antennas and the circuitry that's
17 required by the Forssén invention.

18 Q Yep. Understood.

19 And I think you've made that quite
20 clear several times, so let me ask the question a
21 little bit differently.

22 In your previous answer you testified

1 that it would not be technically impossible to
2 combine Forssén with Vercauteren.

3 I understand that you believe, and your
4 specific words in your declaration are "much new
5 circuitry." So I understand that you believe that
6 there would be much new circuitry required to
7 properly combine these two concepts.

8 So assuming that this much new
9 circuitry was used to make the combination of
10 Forssén's spatially separated antennas and
11 Vercauteren's relay stations, do you disagree with
12 the statement that the resulting relay station
13 would be better equipped to deal with multiple
14 path fading issues?

15 MR. SMITH: Objection. Form.

16 A The first part, my answer has multiple
17 parts, but the first part would be that
18 Vercauteren relay stations and Vercauteren doesn't
19 even disclose that multipath is an issue for the
20 relay stations because the nature of the relay
21 stations and their close to proximity to the
22 mobile stations is not an issue.

1 I'd be happy to look at it if you would
2 show me where Vercauteren even refers to multipath
3 for any type of issue that Vercauteren believes is
4 with the relay stations.

5 Q Let me pause.

6 A No. No. That's the first part of my
7 answer.

8 Q That's why I was trying to pause.

9 A I was saying there were multiple parts
10 so, frankly, you wouldn't interrupt me.

11 And so that's the first part.
12 Vercauteren doesn't even identify as multipath
13 being an issue for its relay stations.

14 The second part is, as I look at
15 Forssén, and I look at the circuitry or the lack
16 of circuitry in Forssén -- I'm paging through it
17 again just to make sure -- all I see are boxes,
18 high-level boxes with high-level functionality.
19 One of ordinary skill in the art would look at
20 these boxes and not be able to understand without
21 an extensive amount of experimentation and design
22 on his own of how to use the Forssén invention in

1 the relay stations of Vercauteren. It's just not
2 there. They're just high-level boxes.

3 I would request the board take a look
4 at these boxes and see if they have any idea what
5 would be included in these high-level boxes that
6 have two words in them. There's no circuitry at
7 all.

8 I'm finished now.

9 Q Okay. Great.

10 So you had two parts to your answer
11 that's going to lead to two separate lines of
12 questioning for me. So let's focus on part one of
13 your answer first.

14 So in part one of your answer you
15 stated that "Vercauteren's relay stations and
16 Vercauteren doesn't even disclose that multipath
17 is an issue for the relay fixed based stations
18 because the nature of the relay stations and their
19 close proximity to the mobile station."

20 What about the connection between the
21 relay stations and the fixed base stations? You
22 would agree if the relay stations were mounted on

1 a train there may be fading -- multipath fading
2 issues between the relay stations and the fixed
3 base stations, correct?

4 A For any signal processing issues,
5 again, Vercauteren -- and I'm happy if I've
6 overlooked it or I've forgotten about multipath.
7 Vercauteren doesn't even mention multipath. The
8 situation that Vercauteren describes for a roaming
9 relay station is when the roaming relay station is
10 blocked from the signal with the fixed base
11 station in which a repeater station is used.

12 So Vercauteren's solution to signal
13 problems or receiving the signal correctly is to
14 insert a repeater station where it's required.

15 Again, Vercauteren is solving any
16 possible signal problems with a repeater that
17 repeats the signal and not addressing any
18 multipath type receivers. It is not in
19 Vercauteren that I recall at all. And when I mean
20 "it," I mean the multipath.

21 Q Okay. So putting aside whether and to
22 what extent Vercauteren discusses multipath

1 fading, you as a person of ordinary skill in the
2 art, would you expect the communication link
3 between the roaming relay station on a train and
4 the fixed base station to be completely free of
5 multipath fading?

6 A I don't know. And, again, you're using
7 extreme words, so "completely free," I don't know
8 what that really means. If it has a little bit of
9 noise then it's not completely free.

10 Again, for Vercauteren there's multiple
11 ways to solve signal problems or the lack of
12 receiving a signal. Some inventions use a
13 multipath-type receiver that we've talked about in
14 past days, referred to as a rake receiver. Other
15 inventions, like Forssén, provide multiple
16 antennas and send the same version of the signal
17 so that multiple versions of the same signal are
18 received at the receiver.

19 That's not the way Vercauteren solved
20 the problem. Vercauteren solved the problem in
21 its invention by inserting relay stations wherever
22 they were needed. And these relay stations could

1 be used for both the roaming relay station or the
2 fixed relay stations, and the repeater stations
3 would simply receive the signal and then
4 regenerate the signal and boost it up so that then
5 they could be received correctly.

6 So, again, Vercauteren is using a
7 different paradigm to address receiving signals or
8 receiving a weak signal. And that different
9 paradigm is he's using repeater stations not
10 multiple antennas.

11 Q Okay. I understand that Vercauteren is
12 using a specific type of system. My previous
13 question was whether in your professional opinion
14 you thought that the connection between the relay
15 stations and the fixed base stations could be
16 completely free of multipath fading.

17 You answered that, "I don't know what
18 that really means and if it has a little bit of
19 noise then it's not completely free."

20 So maybe hopefully I can clarify.

21 In your professional opinion, is it
22 possibly for there to be at least some multipath

1 fading between Vercauteren's roaming relay
2 stations and fixed base stations?

3 A I think it's entirely possible that
4 there could be some type of multipath fading
5 between the roaming relay station and the fixed
6 base stations of Vercauteren.

7 But as I said, Vercauteren isn't
8 addressing that with any type of multiple signal
9 type mechanism or multiple antennas. Instead,
10 Vercauteren is being very specific for any type of
11 signal reception problems or issues he puts a low
12 cost repeater station in the link.

13 So, again, as I explained before,
14 there's different ways to solve the problems. I'm
15 not saying there's no multipath or there wouldn't
16 be any interference in Vercauteren. I'm saying
17 Vercauteren is addressing that interference in a
18 totally different way than Forssén.

19 Q Okay. Fair enough.

20 So let's now focus on the second part
21 of your previous answer from a few minutes ago.

22 The second part of your answer was that

1 when you -- and this is from the transcript here,
2 which I'm reading back as you said, "I'm paging
3 through it" -- it being Forssén -- "to make sure.
4 All I see are boxes, high-level boxes with
5 high-level functionality. One of ordinary skill
6 in the art would look another these boxes and
7 not" -- it's a little choppy, but you get what I'm
8 saying here as far as your second point was
9 directed to your belief that Forssén only
10 disclosed high-level boxes and high-level
11 functionality, correct?

12 A That's the point, yes.

13 Q Okay. So let's look at your next
14 paragraph in your declaration. That's
15 Paragraph 1-5-9.

16 And I think this is kind of the point
17 that you were trying to make in your second point
18 from your previous answer.

19 Here you state, "In addition, a POSITA
20 would not have been motivated to combine
21 Vercauteren and Forssén because Vercauteren lacks
22 the necessary design and circuitry details for the

1 Roaming Relay Station to even be used by a POSITA
2 as a primary reference."

3 Do you see that?

4 A Were you paraphrasing or did I not -- I
5 wasn't following. It sounded different from what
6 I was reading. But if you're paraphrasing 159,
7 Paragraph 159 from my declaration, I would say it
8 speaks for itself.

9 But do you have a specific question?
10 I'm reading Paragraph 159.

11 Q I was intending to read from the first
12 sentence of 159. Maybe I got jumbled with the
13 transmission here.

14 But just for the purposes of my next
15 questions, I'm referring to sentence 1 or the
16 first sentence of Paragraph 159, okay?

17 A Okay.

18 Q All right. And here you're stating
19 that your opinion is that "Vercauteren lacks the
20 necessary design and circuitry details for the
21 Roaming Relay Station," correct?

22 A That's what it says, yes.

1 Q Okay. I think that we can both agree
2 that Vercauteren discloses that its roaming relay
3 stations can communicate signals between mobile
4 terminals and fixed base stations, correct?

5 A They can communicate signals, but I
6 would clarify, as Vercauteren has stated, that it
7 may not be a wireless signal or a complete path
8 wireless signal.

9 Q Okay. That's fair enough.

10 And to be able to perform those
11 communications between the mobile terminals and
12 the fixed base stations, a person of ordinary
13 skill in the art would understand that you would
14 need some sort of radio interfaces to do that,
15 correct?

16 A Well, first of all, for Vercauteren I
17 keep feeling like you're ignoring what I'm saying.
18 Vercauteren's paradigm, or the whole method of
19 Vercauteren, is not to use an invention like
20 Forssén. The whole network and every component of
21 the network is not designed nor with the idea in
22 mind that multipath needs to be handled with

1 multiple antennas and multiple signals.

2 So there's -- Vercauteren is a whole
3 different method for dealing with issues of signal
4 interference or signal reception. As I've said
5 multiple times, Vercauteren doesn't go into
6 multiple antennas. Vercauteren doesn't look at
7 multiple signals. Vercauteren simply provides a
8 repeater station where required. It receives the
9 signal, boosts it up and sends it to the receiver.
10 Problem solved for Vercauteren.

11 Q Okay. So I'm done asking questions
12 about Forssén. We're done with that one for
13 purposes of today. If you would like, you can set
14 it aside. If you would like to keep it in front
15 of you, totally fine as well.

16 My questions for Paragraph 159 are
17 solely directed to Vercauteren. So I'll ask my
18 question again.

19 Let me actually read from the
20 transcript before you provided your previous
21 answer so that we can reorient ourselves.

22 So I asked, "I think we can both agree,

1 that Vercauteren discloses that its roaming relay
2 stations can communicate signals between mobile
3 terminals and fixed base stations, correct?"

4 You answered by saying, "They can
5 communicate signals but I would clarify as
6 Vercauteren has stated that it may not be a
7 wireless signal or a complete path wireless
8 signal."

9 My follow-up question was "And to be
10 able to perform those communications between the
11 mobile terminals and the fixed base stations, a
12 person of ordinary skill in the art would
13 understand that you would need some sort of radio
14 interfaces to do that"; is that correct?

15 A If you have a wireless transceiver and
16 a wireless receiver and Vercauteren goes out of
17 its way to explain that those are the most basic
18 form, you're going to have a wireless transmitter
19 circuit and a wireless receiver circuit and you're
20 going to have one antenna.

21 Q Okay.

22 A And those are what the receiver -- the

1 relay stations of Vercauteren use.

2 Q Okay. And you identified a number of
3 times that Vercauteren explains that the roaming
4 relay stations can have minimal intelligence,
5 correct?

6 A Not only the roaming relay station, but
7 all relay stations are to have minimum
8 intelligence.

9 Q Okay. Fair enough.
10 So all of the roaming relay stations
11 can have minimum intelligence. But that does not
12 mean zero intelligence, correct?

13 A Now we're talking about relative terms.
14 You have to -- minimum intelligence to me, as
15 Vercauteren discloses, is in comparison to
16 something so that I know what minimum means.
17 Vercauteren discloses that minimum intelligence is
18 that the relay station has much of the base
19 station functionality removed. So there's a
20 relative comparison.

21 Minimum intelligence means, in my mind,
22 take as much of the base station functionality as

1 you can out of a base station so the roaming relay
2 station or just the relay station is a simple
3 repeater-type station or it just repeats the
4 signals and then sends them into the fixed layer.

5 Q Okay. So let's take a look at
6 Vercauteren and let's look at Column 10, Line 6.

7 So in Column 10, Line 6, Vercauteren
8 explains one type of intelligence that the relay
9 stations can have, and it does so by stating,
10 "Generally, each hand-over protocol includes at
11 least the following steps."

12 The first step being "a tracking step."

13 If we proceed down to Line 15 we see
14 that Vercauteren then explains that "In the
15 tracking step the radio access links within the
16 radio access network RAN that can be used in paths
17 between mobile terminal MT1 and the base stations
18 FBS1-6 of the fixed level FL are first checked.
19 This is achieved by a tracking signal broadcast by
20 each of the relay station's RS1-RS6."

21 Do you see that?

22 A Yes.

1 Q So one particular type of intelligence
2 that the relay stations have is this ability to
3 broadcast a tracking signal, correct?

4 A You've given two different -- I didn't
5 want to interrupt you, but you provided two
6 different pieces of input. The first step that
7 you described is not done by the relay station;
8 the measurement is done by the MT1, which is the
9 mobile terminal. So that is not functionality
10 done by the relay station.

11 The second part is -- that you've
12 referred to as a "tracking signal broadcast," that
13 is what, again, using the vernacular of engineers,
14 that would be a dumb signal, it's just simply
15 being broadcast to the relay station and forwarded
16 to the network so the network can do the deciding.

17 Again, Vercauteren pushes all the
18 intelligence of the network away from the relay
19 stations and puts it into the network or the fixed
20 base stations.

21 Q Fair enough.

22 But I think we can agree that at least

1 some minimal amount of processing circuitry would
2 be needed to generate and continually broadcast
3 that dumb tracking signal, correct?

4 A As I stated before for Vercauteren, the
5 relay station will have the most basic
6 transmitter, the most basic receiver, and a single
7 antenna. And with the basic circuitry, it would
8 be very simple to just send out a constant
9 tracking signal that's broadcast by a relay
10 station that the network receives and then the
11 network determines what to do and how to route
12 various signals across the network.

13 Q Okay. So let's take a look at the '904
14 patent for a second.

15 A I have it.

16 Q Okay. And let's take a look at
17 Figure 4, which is the block diagram
18 representation of the moving base station.

19 A Okay.

20 Q So you'd agree that the only elements
21 depicted in Figure 4 for the moving base station
22 are two antennas, two generic high-level boxes

1 that say "radio interface" and one high-level box
2 that says "processor," correct?

3 A I'm reading from the text in Column 6,
4 Line 27, "Figure 4 is a block diagram
5 representation of the moving base station 30. The
6 station 30 includes a processor 130 connected via
7 radio interfaces 132, 134 to antennas 100, 101
8 respectively. The processor 130 may be a standard
9 microprocessor and the radio interface circuits
10 132 may be the standard radio interface circuits.
11 The microprocessor is preferably programmed to
12 handle the call processing functions performed in
13 a prior art system by a call site or by a shared
14 base station controller. In this manner, the
15 moving base station has greater autonomy and
16 requires less communications with a shared base
17 station controller or the like. The circuits 132,
18 like the radio interface circuits 154 and the
19 fixed radio port 50 and the radio interface
20 circuits 164 and fixed base station 70, are well
21 known and commercially available circuits."

22 So unlike Forssén, the '904 patent

1 describes a high-level figure with block diagrams.
2 It then describes what's in each of those boxes.
3 And then the key point here is it says to a person
4 of ordinary skill these provide the same functions
5 as a base station, meaning you can go get the same
6 functionality or the same circuits that are
7 provided in the standard base station that is well
8 known. Forssén is a highly specialized unique
9 circuit. And Forssén is not saying you can go get
10 these components that are required to do -- to
11 implement the invention from a prior art circuit
12 or whatever.

13 So it's a very different comparison
14 that you're providing here. Figure 4 is much more
15 specific in its nature than Forssén is.

16 Q Okay. So, again, specifically we were
17 discussing Vercauteren, so I assume your previous
18 answer applies equally to our discussion from
19 Vercauteren?

20 A Well, I was specifically referring to
21 Forssén for that combination. When I look at
22 Vercauteren, Vercauteren initially in the

1 disclosure states that it's not based on the prior
2 art cellular system. And then Vercauteren
3 proceeds to describe how its MCN system is
4 different and then describes how the components
5 are different in comparison to a cellular system.

6 So there is a basis or a baseline that
7 a person of ordinary skill in the art would
8 understand when Vercauteren states that a relay
9 station is a stripped-down -- and I'm
10 paraphrasing -- is a stripped-down base station.
11 Meaning it's minimal intelligence, and he goes on
12 to say, and minimal cost.

13 Q Okay. So in your previous answer that
14 you just gave, you mention that "Vercauteren
15 initially in the disclosure states that it is not
16 based on the prior art cellular system."

17 So if we look at Column 1 of
18 Vercauteren, Column 1 from Line 8 through Line 21
19 talks about the technical field of the present
20 invention.

21 A Sorry, I lost you. Which column are
22 you on?

1 Q Column 1, Lines 8 through 21.

2 A Okay.

3 Q Describes the technical field of the
4 present invention. And included in that
5 discussion it identifies the relay stations, it
6 identifies the relay links, the plurality of base
7 stations, and handover decision.

8 The very next sentence following that
9 technical field of the present invention states
10 that "Such a mobile communication network is
11 already known in the art, e.g., from the
12 pan-European digital cellular GSM Network."

13 Do you see that?

14 A Yes. And, of course, I meant -- that's
15 exactly in line with what I said.

16 Now, the Vercauteren reference starts
17 with a basis to say this is what the technical
18 field is. Here's the background invention of a
19 GSM network. And then it proceeds to say this is
20 not a GSM network. I'm doing things differently
21 for multiple reasons.

22 And so then a person of ordinary skill

1 in the art understands that a Vercauteren relay
2 station has "minimal intelligence" when compared
3 to this GSM base station.

4 That's the baseline I was referring to
5 earlier, which clearly tells one of ordinary skill
6 in the art that a relay station has only the basic
7 functionality and all the decision-making and
8 intelligence has moved back -- been moved back in
9 Vercauteren to the fixed base stations and other
10 components in the network.

11 Q So let's take a look at another passage
12 from Vercauteren. Look at Column 8 and let's look
13 at Line 10. In that portion of the disclosure it
14 states that "It is to be noted that the mobile
15 communication network MCN is suited for use in a
16 universal mobile telecommunication system and that
17 its constituent parts are well known to a person
18 of ordinary skill in the art."

19 Do you see that?

20 A Yes. Which is not talking about a
21 cellular communications network at all. So he's
22 referring to something then totally different, a

1 universal mobile telecommunication system.

2 Frankly, he doesn't provide a specific
3 reference to that like he does for the GSM
4 network, and he's referring to a different mobile
5 communication network, something that I'm not
6 familiar with or it doesn't specifically tell me
7 after being -- working in the cellular field for
8 many, many years what this is. But he enlightens
9 part of that when he talks about the dual-mode
10 telephones that are a satellite-type network.

11 So I believe he's referring to not a
12 cellular network but to a satellite network and
13 being able to use his invention for satellite
14 because some of his phones, I have a section in my
15 declaration regarding the dual-mode phones that
16 are disclosed by Vercauteren of being satellite
17 and a different type of network type phones.

18 Q Okay. So, the line that we just read
19 in Column 8, Line 10 refers to the "mobile
20 communication network, MCN," correct?

21 A That's the invention of Vercauteren.
22 That's what he calls his invention.

1 Q Right. So that is the network that he
2 is identifying and saying that the constituent
3 parts of that network are well known to a person
4 skilled in the art.

5 So let's look at Figure 1 of
6 Vercauteren to see what those well-known
7 constituent parts of the MCN are.

8 So looking at Figure 1 we see at least
9 three triangles labeled as relay stations.

10 Are you disagreeing with the premise
11 that these three relay stations are constituent
12 parts of the MCN which is shown in the dashed box
13 in Figure 1?

14 A The relay stations are shown on
15 multiple figures, as a matter of fact on most of
16 the figures of Vercauteren. Vercauteren very
17 specifically says that these relay stations have
18 minimal intelligence, as I've said multiple times.

19 Q Great. None of those answers were to
20 the question I asked. I asked a very simple
21 question which was, do you disagree with the
22 statement that the relay stations identified as RS

1 in Figure 1 are constituent parts of the MCN shown
2 in the dashed box?

3 A You broke up. You'll have to do it
4 again.

5 Q I will read the transcript back then.

6 My question is, "Are the relay stations
7 shown by the triangles and identified as RS in
8 Figure 1, are those constituent parts of the MCN
9 identified by the dashed box in Figure 1?"

10 A I will agree that the RS triangle -- or
11 the triangles labeled RS that are in the folder
12 labeled RL are in the box labeled MCN in Figure 1.

13 Q Okay. So then do you agree with the
14 statement that we read from Column 8, Line 10,
15 that says, "Those constituent parts" -- which you
16 admitted included the relay stations in
17 Figure 1 -- okay, I will ask --

18 MR. SMITH: Ryan, you're going to have
19 to -- yeah, you're going to have to start over. I
20 think we're running into the same bandwidth
21 problem we did about this hour on Tuesday.

22 THE WITNESS: Frankly, I think

1 everybody is starting to watch Netflix or
2 something and it's messing it up, my opinion.

3 BY MR. RICHARDSON:

4 Q Well, let's see if we can get through
5 this last couple of questions and then we can let
6 you go.

7 So my question is do you disagree with
8 the statement at Column 8 --

9 THE WITNESS: It's getting impossible.

10 MR. SMITH: You're going to have to
11 start over.

12 A Try again.

13 Q All right. Let's take this in very
14 small parts.

15 Let's look at Column 8, okay?

16 A All right.

17 Q Line 10, okay?

18 A Yes.

19 Q Do you disagree with the --

20 MR. SMITH: We lost you again. We're
21 hearing absolutely nothing now.

22 Q All right. Let's try the opposite.

1 Let's try to ask the question really fast.

2 A Okay.

3 Q Okay. Do you disagree with the
4 statement at Column 8, Line 10 that the
5 constituent parts, including relay stations RS,
6 were well known to those skilled in the art?

7 A I disagree with your characterization
8 of that question. I think that it's referring to
9 the constituent parts of the universal mobile
10 telecommunication system that I don't recall has
11 been specifically defined. And frankly, as I said
12 before, I don't know what he's referring to
13 specifically other than a possible satellite
14 network.

15 So I'm reading that sentence different
16 than you are or interpreting it different than you
17 are. I've agreed that the relay stations are
18 labeled in Figure 1 and inside the dashed box
19 labeled MCN.

20 That's as far as I go to agree because
21 I think we have a different interpretation of the
22 sentence in Column 8 that starts at Line 10.

1 Q Okay. I think we got through that.
2 Hopefully one more question and I can get you out
3 of here.

4 Is it your opinion that the three
5 high-level boxes shown in Figure 4 of the '904
6 patent combined with the disclosure in Column 6,
7 that you read to me previously identifying those
8 boxes as standard and conventional, is sufficient
9 to inform a person of ordinary skill in the art
10 how to implement that moving base station?

11 A I wouldn't restrict it to just
12 Column 6, but I believe the disclosures of the
13 '904 patent are sufficient for one of ordinary
14 skill in the art to know how to implement the
15 moving base station.

16 Q Okay. Fair enough.

17 MR. RICHARDSON: I think we are at a
18 natural stopping point. I think we're at your
19 cutoff point. So we can pick this up tomorrow.

20 THE WITNESS: Yes. 10:00 a.m. Central
21 time tomorrow. Same station.

22 MR. RICHARDSON: All right. We'll be

1 there.

2 MR. SMITH: All right. Have a good
3 evening.

4 MR. RICHARDSON: Thank you, guys.

5 (Off the record at 7:05 p.m. EST)

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

ACKNOWLEDGMENT OF DEPONENT

I, MARK R. LANNING, do hereby
acknowledge that I have read and examined the
foregoing testimony, and the same is a true,
correct and complete transcription of the
testimony given by me and any corrections appear
on the attached Errata sheet signed by me.

(DATE)

(SIGNATURE)

1 CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC

2
3 I, Judith E. Bellinger, Certified
4 Reporter and
5 Notary Public within and for the State of Maryland
6 do hereby certify:

7 That MARK R. LANNING, the witness whose
8 deposition is hereinbefore set forth, was duly
9 sworn by me before the commencement of such
10 deposition and that such deposition was taken
11 before me and is a true record of the testimony
12 given by such
13 witness.

14 I further certify that the adverse
15 party, CARUCEL INVESTMENTS, L.P., was represented
16 by counsel at the deposition.

17 I further certify that the deposition of
18 MARK R. LANNING occurred with the witness being
19 present at the office of Warren | Rhoades LLP,
20 1212 Corporate Drive, Suite 250, Irving, Texas
21 75038, on Thursday, June 4, 2020, commencing at
22 11:08 a.m. EST to 7:05 p.m. EST.

1 IN WITNESS WHEREOF, I have hereunto set
2 my hand this 16th day of June, 2020.

3 My Commission Expires: November 3, 2020

4 *Judith E. Bellinger*
5 _____

6 NOTARY PUBLIC IN AND FOR
7 THE STATE OF MARYLAND

8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

Transcript of Mark R. Lanning
Conducted on June 4, 2020

220

A			
ability	138:12, 142:20,	51:15, 53:14,	advantageously
10:22, 20:20,	161:10, 163:15,	57:10, 61:3,	65:22
41:18, 96:18,	173:16	84:3, 94:18,	advantages
160:3, 187:16,	absolutely	99:18, 109:3,	65:10, 66:4
203:2	213:21	114:20, 139:13,	adverse
able	access	162:10, 199:19	218:14
28:14, 33:19,	56:5, 56:7,	adapt	after
61:4, 62:4,	66:21, 148:4,	123:4, 166:17	29:1, 32:14,
73:2, 73:8,	148:6, 149:18,	adapted	74:2, 143:8,
73:15, 91:6,	202:15, 202:16	77:7, 78:7,	188:8, 210:7
105:19, 111:6,	accomplished	98:8, 100:12,	again
111:17, 112:6,	14:18	131:10, 135:19,	12:15, 17:2,
113:20, 139:8,	accordance	136:4, 136:7,	18:3, 20:4,
149:13, 157:6,	98:8, 98:15,	153:14, 179:3	23:13, 24:8,
157:18, 158:10,	98:17, 99:8,	add	24:21, 26:5,
159:12, 159:21,	100:13, 135:20,	164:22	26:9, 28:19,
190:20, 198:10,	153:14	added	30:9, 31:9,
200:10, 210:13	accordingly	102:2, 183:1,	32:10, 32:18,
aboard	102:4	183:21, 187:14	33:1, 40:8,
14:2, 25:7	account	adding	44:1, 48:12,
about	77:10	185:3	51:5, 53:3,
21:17, 21:18,	accurate	addition	54:3, 54:18,
21:20, 26:9,	37:16, 65:8,	71:14, 71:22,	56:1, 56:14,
33:19, 33:21,	71:22, 72:5,	107:6, 174:14,	60:8, 61:5,
35:12, 36:12,	72:6, 93:21,	196:19	61:11, 63:19,
36:14, 38:1,	99:17	additional	65:19, 71:7,
39:10, 50:6,	achieved	112:18, 149:6	72:10, 72:16,
50:7, 76:3,	202:19	additionally	72:20, 84:19,
81:10, 81:15,	acknowledge	28:13	87:22, 91:20,
83:13, 84:9,	217:3	address	93:11, 96:15,
88:11, 89:10,	acknowledgment	103:19, 194:7	100:16, 102:5,
92:5, 93:9,	217:1	addressed	107:18, 114:10,
96:15, 114:4,	acronym	54:6, 64:21,	115:2, 117:12,
114:22, 115:19,	119:19, 144:9	118:20, 119:6	117:19, 120:22,
147:21, 150:22,	acronyms	addressing	129:4, 129:21,
151:4, 151:10,	124:18, 124:19,	73:14, 192:17,	132:10, 141:7,
152:1, 155:16,	124:20, 149:16	195:8, 195:17	152:13, 162:8,
158:5, 171:5,	across	adjacent	166:5, 171:14,
181:16, 182:4,	48:1, 48:2,	62:19	171:17, 171:21,
182:13, 185:11,	204:12	adjourn	173:14, 174:3,
186:21, 191:20,	acting	116:4	176:9, 187:2,
192:6, 193:13,	12:7, 13:9,	admit	190:17, 192:5,
199:12, 201:13,	14:22	120:22	192:15, 193:6,
207:19, 209:20,	active	admitted	193:10, 194:6,
210:9, 212:21	33:4	212:16	195:13, 199:18,
above	actually	advanced	203:13, 203:17,
70:3, 77:13,	13:15, 15:13,	56:9, 58:19	206:16, 212:4,
	50:14, 51:10,	advantage	213:12, 213:20
		65:9	

Transcript of Mark R. Lanning
Conducted on June 4, 2020

221

<p>against 187:2 ago 29:17, 37:5, 195:21 agree 8:18, 15:9, 25:15, 26:15, 34:3, 34:10, 37:6, 38:19, 40:8, 44:12, 45:9, 45:13, 45:22, 46:1, 46:5, 47:11, 47:17, 48:20, 49:4, 50:13, 53:13, 55:9, 55:14, 55:17, 55:22, 57:5, 57:18, 57:19, 58:12, 58:15, 59:21, 63:7, 63:10, 72:4, 78:22, 79:3, 79:6, 90:14, 90:17, 94:2, 94:5, 97:2, 106:7, 121:17, 126:3, 134:20, 149:3, 149:7, 164:7, 167:7, 170:13, 170:14, 170:18, 171:3, 171:14, 172:13, 174:13, 181:19, 183:19, 191:22, 198:1, 199:22, 203:22, 204:20, 212:10, 212:13, 214:20 agreed 7:2, 214:17 agreement 10:16 ahead 63:19, 155:12 air 47:19, 48:21,</p>	<p>63:8, 77:20 airborne 10:18, 10:19, 10:21, 11:2, 11:8, 11:12, 11:19, 12:7, 12:12, 12:13, 12:21, 13:6, 13:10, 13:13, 13:16, 13:22, 14:14, 14:16, 15:6, 15:19, 15:22, 16:15, 16:21, 17:5, 17:16, 17:18, 17:20, 17:21, 18:5, 18:8, 18:15, 18:16, 19:2, 21:9, 21:22, 23:5, 25:1, 25:5, 25:9, 31:7, 32:16, 44:11, 44:21, 45:4, 45:10, 48:17, 49:6, 53:5, 55:20, 62:3, 70:5, 71:11, 71:12, 71:14, 71:15, 74:14, 75:20, 77:17, 78:10, 79:22, 84:12, 85:4, 86:3, 86:20, 87:5, 89:6, 89:13, 90:1, 90:16, 92:7, 96:17, 98:2, 101:10, 102:16, 103:16, 104:13, 105:6, 106:14, 107:16, 109:9, 113:1 airborned 63:5 aircraft 12:12, 14:2, 25:7, 25:21,</p>	<p>26:16, 27:8, 29:4, 41:21, 47:17, 48:20, 49:8, 54:7, 54:10, 57:3, 59:9, 59:12, 61:12, 61:13, 72:7, 73:1, 75:20, 80:1 aircraft's 47:4 airplane 11:4, 11:14, 11:15, 12:15, 12:16, 48:1, 58:2, 59:4, 59:12, 62:1, 77:18, 78:10, 78:14 aka 174:20 al 51:1, 52:22, 53:8, 54:22 algorithm 59:9, 62:15 algorithms 61:9, 61:12 all 19:14, 37:3, 43:2, 69:19, 78:14, 83:15, 86:8, 92:13, 100:9, 100:10, 106:6, 106:11, 107:3, 107:6, 110:9, 116:6, 122:10, 124:17, 124:19, 124:20, 129:21, 130:13, 132:13, 138:10, 141:12, 144:10, 145:11, 154:8, 160:9, 160:22, 161:4, 163:3, 168:7, 171:9, 174:6, 177:3, 182:2, 182:13,</p>	<p>186:12, 186:14, 190:17, 191:7, 192:19, 196:4, 197:18, 198:16, 201:7, 201:10, 203:17, 209:7, 209:21, 213:13, 213:16, 213:22, 215:22, 216:2 allegedly 103:4 allocates 92:13 allowing 87:18 allows 145:18 almost 122:11, 151:2, 186:10 along 6:11, 81:10, 81:15, 81:20, 82:16, 82:18, 173:2 already 31:18, 34:22, 39:17, 74:11, 208:11 also 4:3, 7:10, 9:8, 9:10, 12:21, 16:11, 25:21, 37:17, 45:13, 47:16, 49:20, 57:6, 62:10, 62:15, 63:5, 73:9, 74:22, 75:9, 77:17, 90:21, 95:17, 95:18, 95:20, 99:8, 107:21, 110:4, 110:18, 115:14, 126:5, 134:22, 137:14, 140:6, 159:17, 161:18, 164:22, 174:15, 175:4,</p>
---	---	---	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

222

176:1, 177:16, 183:20, 184:15 alternate 13:4, 14:7, 14:10, 15:5, 15:8, 15:16, 16:10, 17:12, 17:14, 19:4, 19:8, 22:16, 23:19, 25:4, 31:10, 40:17, 45:20, 56:6, 56:8, 62:6, 86:2, 86:19, 87:5 alternative 13:15, 13:21, 17:17, 18:16, 44:10, 44:15, 44:19, 86:2 altitude 62:2 always 124:16 america 1:5 among 147:15 amount 74:19, 74:20, 75:17, 112:16, 190:21, 204:1 amplifier 110:19 amplitude 93:15 amps 56:19 analog 56:19 analysis 26:21, 77:5, 78:5, 78:6, 79:5, 80:20, 91:18, 99:22, 102:3, 150:4, 154:8, 155:2 analyzed 29:2, 149:14,	151:11, 153:1 analyzing 151:16 annotated 104:15, 106:1, 163:5, 163:20, 164:11, 170:2, 170:5, 172:21 annotations 176:12 another 11:18, 42:14, 48:1, 49:14, 56:8, 58:1, 58:21, 76:15, 95:18, 106:22, 108:6, 129:12, 141:7, 160:11, 196:6, 209:11 answer 15:15, 18:7, 36:8, 36:13, 37:20, 38:7, 38:17, 57:8, 57:11, 57:12, 65:14, 65:15, 87:8, 90:5, 113:9, 114:2, 118:18, 121:8, 124:21, 124:22, 125:7, 131:8, 136:17, 144:16, 145:12, 151:8, 152:15, 152:20, 156:12, 165:20, 178:2, 178:15, 179:19, 186:1, 188:22, 189:16, 190:7, 191:10, 191:13, 191:14, 195:21, 195:22, 196:18, 199:21, 206:18, 207:13 answered 37:9, 170:10, 186:2, 194:17, 200:4 answering 151:9	answers 211:19 antenna 47:4, 48:16, 49:6, 74:13, 181:4, 181:8, 181:20, 181:21, 182:3, 182:5, 200:20, 204:7 antennas 69:18, 177:19, 178:8, 178:13, 182:16, 183:15, 185:17, 186:18, 187:14, 188:5, 188:6, 188:16, 189:10, 193:16, 194:10, 195:9, 199:1, 199:6, 204:22, 205:7 any 8:22, 9:22, 12:11, 29:11, 36:1, 36:13, 36:18, 37:20, 38:7, 42:11, 43:11, 43:15, 43:17, 46:3, 46:7, 46:12, 55:18, 56:21, 65:2, 65:6, 84:12, 84:13, 88:7, 89:6, 89:9, 89:13, 90:1, 91:2, 91:14, 92:6, 94:8, 97:6, 104:9, 107:4, 107:13, 107:22, 109:7, 114:8, 116:18, 125:8, 136:20, 140:10, 143:14, 143:15, 148:11, 148:12, 149:22, 150:6, 151:4, 151:9, 153:18, 154:5, 154:21, 155:16,	172:17, 173:8, 184:4, 188:1, 188:4, 188:10, 190:3, 191:4, 192:4, 192:15, 192:17, 195:8, 195:10, 195:16, 217:6 anything 33:21, 36:14, 60:11, 85:15, 88:7, 94:15, 106:20, 114:4, 167:12, 182:4 anything's 186:4 anywhere 65:2, 73:19, 73:20, 85:8, 154:4 apologize 60:12, 166:5 apparatus 65:3, 97:14, 97:18, 98:8, 98:11, 98:15, 98:17, 99:9, 100:12, 100:16, 104:21, 105:3, 135:19, 153:14, 153:16, 163:6 appeal 1:3 appear 10:7, 64:11, 117:17, 217:6 appears 10:5, 40:2, 104:5, 140:15 applicable 59:11 applied 78:15, 79:4 applies 206:18 apply 7:3, 77:5 applying 78:19
---	--	--	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

223

<p>appreciate 79:16, 87:13, 87:18, 90:12 appropriate 42:8, 61:12, 113:1, 123:12, 145:20 approximately 67:4 area 123:3, 163:9, 165:8, 165:13, 165:17, 166:16, 167:4, 167:17, 167:21, 168:6, 168:9, 168:10, 168:12, 168:16, 168:20, 168:22, 169:1, 169:7, 169:16, 169:18, 169:20, 170:16, 170:19, 170:21, 171:1, 171:4, 171:11, 171:18 areas 66:5, 128:15 arguing 95:19 argument 101:12, 101:21 around 66:18, 76:10, 147:20 array 181:4, 181:9, 181:20, 181:21, 182:3, 182:6 art 75:19, 82:20, 107:8, 108:21, 112:8, 112:11, 113:20, 185:9, 186:7, 186:20, 190:19, 193:2, 196:6, 198:13, 200:12, 205:13, 206:11, 207:2, 207:7, 207:16,</p>	<p>208:11, 209:1, 209:6, 209:18, 211:4, 214:6, 215:9, 215:14 aside 88:21, 89:10, 113:15, 114:21, 175:1, 179:16, 187:12, 192:21, 199:14 ask 34:1, 35:10, 40:7, 63:18, 68:10, 81:7, 84:6, 125:8, 147:2, 150:22, 151:4, 151:20, 155:13, 155:16, 155:18, 157:13, 166:4, 170:12, 188:20, 199:17, 212:17, 214:1 asked 35:12, 37:6, 60:4, 101:19, 116:13, 121:6, 126:15, 145:4, 168:1, 186:2, 199:22, 211:20 asking 17:21, 21:13, 21:15, 21:17, 21:18, 21:20, 36:11, 38:1, 38:14, 85:11, 88:10, 88:22, 89:11, 105:4, 106:9, 121:22, 142:12, 175:20, 181:13, 181:15, 199:11 asserted 64:20 assertion 118:14 assigned 51:1, 52:22, 137:15</p>	<p>associated 88:15, 154:21 assume 42:20, 114:8, 206:17 assuming 12:16, 68:11, 189:8 at&t 159:7, 159:10 attached 5:5, 7:16, 9:15, 39:8, 64:6, 117:8, 176:8, 217:7 attempt 108:21 attempting 30:22 attention 37:11 automobile 80:16 automotive 80:4, 80:10, 80:17, 81:1, 81:3, 82:11, 83:1, 83:6 autonomy 205:15 av 4:4, 8:4, 8:8, 64:3, 117:2, 117:6, 176:4 available 28:13, 62:6, 128:4, 205:21 avenue 3:6 average 80:3 aware 9:3, 81:14 away 122:4, 141:8, 184:3, 203:18 <hr/>B<hr/>b1 5:11</p>	<p>back 14:6, 14:12, 18:20, 19:3, 19:8, 19:12, 32:10, 36:6, 36:9, 40:22, 42:17, 42:21, 42:22, 43:6, 48:10, 54:21, 58:8, 61:17, 76:22, 83:11, 83:21, 96:14, 96:16, 99:17, 116:7, 122:11, 128:20, 135:8, 138:14, 147:5, 149:18, 155:4, 159:6, 170:2, 175:14, 178:18, 182:10, 186:14, 196:2, 209:8, 212:5 background 73:6, 73:7, 208:18 band 131:13, 179:6 bandwidth 212:20 bank 46:18, 46:21, 47:3, 47:12, 48:22, 109:21, 110:13, 110:17 bars 94:12, 94:17, 94:19 based 11:22, 14:20, 16:19, 27:22, 39:22, 46:9, 53:7, 55:12, 55:19, 56:16, 56:22, 57:6, 57:10, 58:4, 58:6, 58:13, 58:16, 59:12, 59:17, 60:16,</p>
--	---	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

224

61:9, 62:16, 63:8, 63:10, 66:9, 73:10, 73:12, 74:7, 74:8, 74:12, 75:3, 79:22, 81:6, 82:8, 82:9, 83:6, 91:10, 92:17, 93:2, 93:15, 93:16, 93:22, 95:9, 95:15, 95:20, 95:22, 96:5, 96:18, 97:1, 107:2, 120:15, 120:19, 121:3, 123:18, 132:2, 138:2, 144:21, 145:22, 168:7, 191:17, 207:1, 207:16 baseline 207:6, 209:4 basic 130:20, 170:1, 187:22, 200:17, 204:5, 204:6, 204:7, 209:6 basis 207:6, 208:17 bear 104:1 beat 114:22 became 35:16 because 19:21, 20:15, 21:13, 22:6, 23:8, 24:16, 28:9, 31:17, 37:4, 46:6, 59:3, 59:8, 60:6, 60:20, 61:8, 62:5, 62:22, 65:22, 72:13, 73:2, 77:21, 78:13,	93:14, 94:5, 97:1, 98:4, 100:8, 101:21, 105:7, 105:10, 108:2, 108:12, 110:14, 119:21, 120:18, 121:4, 121:8, 122:9, 129:17, 131:8, 132:12, 136:20, 137:16, 149:10, 153:20, 162:9, 163:20, 165:15, 168:1, 170:5, 170:21, 172:11, 183:5, 187:2, 187:17, 189:20, 191:18, 196:21, 210:14, 214:20 becomes 48:4 been 6:3, 21:8, 25:10, 34:22, 35:19, 41:3, 49:18, 72:15, 74:17, 81:14, 83:22, 91:5, 97:12, 112:21, 115:8, 115:19, 116:16, 117:2, 144:4, 160:10, 169:11, 170:2, 172:5, 176:4, 186:10, 196:20, 209:8, 214:11 before 1:3, 2:11, 35:15, 36:13, 37:20, 38:7, 42:7, 44:3, 44:18, 50:7, 55:6, 65:15, 84:16, 86:4, 86:21, 91:12, 99:11, 116:12, 116:17, 136:2, 164:19, 175:20,	195:13, 199:20, 204:4, 214:12, 218:9, 218:11 began 89:2, 178:19 begin 7:5, 58:10, 73:2, 73:17 beginning 14:9, 31:6, 34:16, 40:16, 40:18, 42:4, 42:6, 46:10, 48:11, 50:20, 53:18, 71:1, 72:11, 74:6, 126:1 begins 13:13, 13:20, 26:1, 26:18, 27:9, 29:5, 29:7, 32:3, 34:15, 42:1, 42:2, 54:5, 72:8, 74:3, 130:13, 147:21, 150:8 behalf 3:2, 3:10, 18:9, 23:20, 25:12 being 9:19, 13:8, 24:4, 24:13, 28:19, 30:2, 31:16, 31:22, 33:19, 39:15, 41:2, 41:14, 44:21, 47:17, 48:7, 48:20, 53:19, 54:6, 55:5, 66:15, 71:15, 73:7, 73:15, 95:18, 95:19, 96:8, 98:1, 101:8, 105:7, 107:15, 120:8, 130:19,	130:20, 131:16, 132:10, 136:10, 153:6, 154:1, 154:12, 164:9, 174:18, 179:10, 179:13, 190:13, 195:10, 196:3, 202:12, 203:15, 210:7, 210:13, 210:16, 218:18 belief 196:9 believe 7:8, 10:15, 12:19, 14:21, 15:4, 16:10, 45:18, 45:19, 55:8, 57:9, 59:2, 59:5, 65:14, 70:16, 78:15, 79:10, 79:13, 81:5, 81:16, 82:17, 83:5, 90:6, 90:9, 94:21, 100:4, 100:5, 101:20, 102:20, 103:1, 103:6, 103:17, 104:14, 113:3, 113:13, 114:4, 115:2, 118:20, 137:19, 138:19, 139:14, 139:18, 140:1, 146:12, 150:5, 165:5, 165:20, 178:1, 185:20, 189:3, 189:5, 210:11, 215:12 believed 113:10 believes 190:3 bellinger 1:22, 2:12, 218:3 below 43:14, 120:10,
--	---	---	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

225

161:8, 162:1, 163:8, 177:9, 177:16 benefit 69:2, 183:1 benefits 69:16 best 24:3, 57:8, 57:12, 69:18, 105:21, 114:2, 178:2, 188:10 better 189:13 between 14:6, 19:6, 19:8, 21:3, 21:10, 22:1, 23:9, 45:6, 63:11, 67:2, 72:14, 79:8, 105:13, 105:16, 105:20, 105:21, 113:2, 113:5, 118:16, 119:7, 119:15, 120:1, 120:18, 124:13, 128:2, 128:7, 128:8, 129:1, 129:10, 131:6, 132:1, 132:7, 132:9, 132:19, 138:8, 140:15, 141:5, 142:3, 143:4, 144:20, 149:20, 163:21, 163:22, 164:16, 164:20, 172:1, 172:9, 174:8, 191:20, 192:2, 193:3, 194:14, 195:1, 195:5, 198:3, 198:11, 200:2, 200:10, 202:17 big 140:2 bill 31:3	bit 46:16, 76:6, 115:12, 156:16, 188:21, 193:8, 194:18 block 44:9, 44:15, 77:15, 77:16, 78:4, 85:21, 86:1, 86:10, 86:15, 86:18, 87:4, 112:13, 133:10, 134:8, 155:16, 162:4, 165:1, 165:2, 165:5, 204:17, 205:4, 206:1 blocked 192:10 blocks 46:18 board 1:3, 191:3 boost 194:4 boosts 199:9 both 22:11, 22:20, 23:17, 23:19, 24:22, 25:8, 25:10, 25:15, 34:22, 106:18, 112:19, 114:11, 123:12, 143:12, 145:21, 148:14, 159:9, 162:6, 194:1, 198:1, 199:22 bottom 45:16, 84:21, 140:16, 165:2, 165:6 box 84:22, 110:5, 205:1, 211:12, 212:2, 212:9, 212:12, 214:18	boxes 190:17, 190:18, 190:20, 191:2, 191:4, 191:5, 196:4, 196:6, 196:10, 204:22, 206:2, 215:5, 215:8 break 39:11, 42:13, 42:15, 76:4, 76:16, 83:9, 115:21, 116:3, 146:22, 160:11, 175:8, 175:20 bridgette 4:4 brief 146:7 briefly 116:17 bring 39:3 broadcast 202:19, 203:3, 203:12, 203:15, 204:2, 204:9 broke 17:3, 86:8, 116:12, 135:13, 212:3 brought 9:19, 39:15, 151:11 built 111:19 bunch 68:8 buy 158:22 <hr/> C <hr/> call 12:14, 12:18, 32:22, 33:5, 62:22, 71:15, 84:22, 88:20, 90:8, 90:9,	90:18, 92:11, 92:13, 92:18, 158:6, 205:12, 205:13 called 25:18, 165:10 calls 11:20, 12:11, 21:2, 21:5, 21:22, 22:3, 23:8, 23:11, 23:12, 41:17, 71:13, 210:22 came 10:16, 55:2 can't 51:12, 51:13, 51:16, 51:22, 57:19, 71:2, 81:16, 94:15, 121:8, 128:13, 136:19, 148:22, 152:15, 152:20, 166:2 cannot 16:1, 21:22, 63:1, 63:12, 72:13, 97:17, 103:15, 104:12, 105:2, 105:6, 113:13, 119:14, 128:16, 163:10, 163:17, 163:22, 164:20, 168:16, 168:20, 174:20 capabilities 157:16, 159:16, 159:18 capability 19:20, 20:14, 20:20, 24:18, 28:21 capable 11:3, 30:20, 119:1, 119:21, 155:22, 156:4, 157:10, 159:21 car 33:10
---	--	---	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

226

<p>careful 12:2, 132:11 carefully 140:21 carried 57:17 carucel 1:8, 218:15 case 1:11, 1:14, 32:15, 66:19, 111:16, 119:3, 124:15, 124:16, 138:9, 145:3 cases 94:9, 119:4, 119:17, 123:12, 128:4, 128:17, 134:18, 152:16, 152:18 cause 38:10 caveat 63:8 cdma 11:13, 32:7, 32:11, 33:3, 33:6, 50:20, 51:4, 51:6, 52:20, 53:7, 53:20, 55:12, 56:11, 56:16, 56:17, 72:18, 73:10, 159:9 cell 13:14, 14:17, 16:17, 18:6, 18:9, 24:11, 25:2, 25:22, 26:17, 27:9, 28:6, 28:7, 28:10, 28:11, 28:13, 29:4, 29:9, 29:10, 29:15, 30:11, 31:17, 31:20, 31:21, 32:3, 32:4, 32:5,</p>	<p>33:8, 33:9, 33:14, 33:15, 33:20, 34:18, 34:19, 35:17, 35:18, 41:10, 41:14, 41:22, 42:8, 47:22, 54:7, 54:11, 54:15, 54:17, 55:2, 57:2, 57:4, 58:21, 60:22, 61:1, 61:3, 61:5, 61:13, 61:14, 63:4, 63:11, 63:13, 70:20, 70:22, 71:3, 71:5, 71:16, 72:8, 72:12, 72:14, 72:17, 72:22, 73:3, 74:7, 74:10, 75:2, 75:4, 105:13, 106:22 cell's 71:17 cells 32:19, 47:19, 48:3, 62:2, 62:14, 62:16, 62:19, 63:11, 66:6, 66:9, 66:17, 67:2, 68:3, 68:4, 68:9, 69:6, 69:13, 72:14 cellular 12:5, 12:8, 12:9, 15:2, 19:20, 20:14, 20:20, 23:15, 30:12, 32:11, 56:5, 57:15, 122:5, 132:15, 133:5, 135:11, 135:14, 135:17, 136:2, 136:12, 136:14, 137:1,</p>	<p>137:8, 137:9, 137:16, 137:19, 138:2, 138:4, 138:5, 139:8, 140:5, 140:8, 141:9, 143:20, 146:14, 146:15, 155:22, 156:2, 156:3, 156:5, 156:10, 157:1, 157:3, 157:4, 157:7, 157:8, 157:10, 157:12, 157:16, 157:19, 158:1, 158:2, 158:11, 158:21, 159:5, 159:11, 159:13, 159:16, 159:17, 159:22, 160:7, 162:6, 162:8, 162:11, 162:13, 181:5, 181:22, 182:6, 182:7, 184:6, 207:2, 207:5, 207:16, 208:12, 209:21, 210:7, 210:12 central 215:20 certain 65:19, 134:18, 181:17 certificate 218:1 certified 2:13, 218:3 certify 218:6, 218:14, 218:17 cgrrn 123:14 challenge 130:1 challenged 105:11, 118:9, 120:18, 121:14, 130:21, 131:5,</p>	<p>133:7, 134:6, 135:10, 135:16, 137:4, 155:21, 156:9, 156:13, 156:19, 157:15, 161:11, 177:8, 178:9, 178:11, 178:20 chance 84:6, 155:13 change 38:11, 120:14, 122:9, 144:7, 144:9, 174:17, 174:19 changed 41:3 changes 112:16 changing 24:20, 175:10 characteristics 69:19, 74:22, 93:17, 146:3, 146:11 characterization 17:15, 55:10, 79:7, 150:13, 214:7 characterized 148:5 charles 4:5 chart 138:20, 139:2, 139:17 charts 138:20 check 76:12, 100:4, 173:16 checked 202:18 chooses 68:3 choosing 69:18, 146:4 choppy 196:7</p>
--	---	--	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

227

<p>chose 54:18, 54:19, 55:1, 96:18, 114:14, 172:20</p> <p>chosen 123:17</p> <p>circuit 111:12, 200:19, 206:9, 206:11</p> <p>circuitry 43:11, 43:16, 43:17, 46:12, 108:3, 108:8, 109:14, 109:15, 110:11, 110:21, 111:21, 112:12, 112:20, 112:22, 114:12, 182:18, 186:16, 188:4, 188:5, 188:7, 188:10, 188:16, 189:5, 189:6, 189:9, 190:15, 190:16, 191:6, 196:22, 197:20, 204:1, 204:7</p> <p>circuits 95:9, 110:1, 113:2, 114:9, 205:9, 205:10, 205:17, 205:18, 205:20, 205:21, 206:6</p> <p>circumstances 149:8</p> <p>citations 127:10</p> <p>cite 49:21, 50:14, 53:14, 107:11</p> <p>cited 27:20, 34:11, 37:7, 37:14, 37:18, 38:5, 40:11, 40:15, 41:7, 53:16, 53:19, 70:9</p> <p>cites 34:4</p>	<p>citing 55:18, 58:12, 59:19, 60:18</p> <p>civil 77:6, 78:6, 79:4, 81:13, 81:17, 81:19, 82:4, 82:13</p> <p>claimed 65:3, 153:6</p> <p>claiming 102:8</p> <p>claims 98:6, 105:11, 105:12, 108:14, 108:17, 118:9, 120:18, 121:15, 130:21, 131:5, 132:3, 133:7, 134:6, 135:11, 135:16, 137:4, 149:5, 152:1, 152:12, 155:21, 156:9, 156:14, 156:19, 157:15, 161:11, 177:8, 178:10, 178:11, 178:17, 178:20</p> <p>clarification 19:11, 40:14, 42:12, 52:16, 67:18, 79:17, 90:12, 120:5, 180:14</p> <p>clarify 67:13, 87:19, 89:14, 99:13, 121:17, 156:8, 194:20, 198:6, 200:5</p> <p>clarifying 63:3</p> <p>clarity 51:9, 136:20, 136:21</p> <p>clean 8:9, 10:2, 39:20, 64:8,</p>	<p>117:9, 176:13</p> <p>clear 6:18, 14:8, 16:7, 17:9, 18:12, 66:8, 73:16, 85:20, 87:13, 102:10, 107:5, 114:18, 149:4, 149:19, 169:11, 173:3, 188:20</p> <p>cleared 52:11</p> <p>clearly 24:22, 28:21, 32:13, 80:22, 89:15, 132:12, 184:3, 209:5</p> <p>close 57:3, 129:15, 189:21, 191:19</p> <p>closely 62:16, 62:19</p> <p>closer 42:11</p> <p>code 11:13, 12:14, 56:5</p> <p>cognizant 76:2</p> <p>column 13:1, 13:2, 13:3, 13:12, 13:19, 13:20, 14:4, 14:6, 14:9, 15:4, 15:15, 16:15, 18:2, 18:13, 18:20, 18:22, 19:1, 24:8, 24:17, 25:17, 26:6, 26:7, 29:18, 30:5, 31:7, 31:9, 32:1, 32:6, 35:1, 35:2, 40:17, 40:19, 41:21, 44:13,</p>	<p>44:20, 45:3, 47:2, 48:11, 48:15, 49:3, 50:19, 52:18, 53:4, 54:5, 54:22, 55:14, 56:2, 56:20, 56:21, 57:13, 58:9, 64:17, 65:18, 65:21, 71:9, 72:2, 72:6, 74:2, 74:6, 75:8, 76:1, 92:9, 95:2, 95:6, 122:22, 125:12, 141:16, 145:15, 147:19, 151:2, 151:3, 151:17, 166:6, 169:5, 170:9, 170:17, 173:13, 180:19, 202:6, 202:7, 205:3, 207:17, 207:18, 207:21, 208:1, 209:12, 210:19, 212:14, 213:8, 213:15, 214:4, 214:22, 215:6, 215:12</p> <p>combination 93:13, 101:16, 102:1, 113:16, 182:22, 185:10, 185:13, 185:21, 189:9, 206:21</p> <p>combine 49:19, 102:5, 107:8, 111:17, 112:6, 112:9, 112:12, 113:11, 113:18, 113:20, 185:16, 186:7, 186:17, 188:11, 189:2, 189:7, 196:20</p> <p>combined 102:8, 103:8,</p>
--	---	--	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

228

111:7, 113:14, 114:9, 114:15, 215:6 combiner 110:6, 110:7, 110:12, 110:18 combining 107:4 come 23:15, 42:22, 83:11, 175:13 comfortable 151:9 coming 23:2, 42:21, 45:16, 180:8, 180:10, 180:11 commencement 218:9 commencing 218:21 comments 46:10, 63:21, 144:10 commercial 183:3, 183:16, 183:20, 184:8, 187:3, 187:6, 187:10, 187:19 commercially 205:21 commission 219:3 commonality 155:4 communicate 58:21, 124:2, 130:15, 133:4, 139:8, 140:7, 141:10, 141:14, 143:3, 157:4, 157:7, 157:19, 158:11, 159:13, 159:22, 173:17, 198:3, 198:5, 200:2, 200:5 communicates 127:12, 127:14,	130:4, 130:6 communicating 11:3, 127:6, 127:19, 156:1, 156:2, 157:10, 158:3 communication 57:15, 97:17, 105:1, 105:16, 105:20, 106:2, 130:15, 138:1, 140:11, 145:18, 147:9, 147:12, 150:9, 181:5, 181:22, 182:6, 182:7, 193:2, 208:10, 209:15, 210:5, 210:20 communications 21:10, 27:22, 32:4, 53:5, 55:19, 55:20, 57:7, 158:4, 158:7, 164:2, 198:11, 200:10, 205:16, 209:21 comparable 77:8, 77:19, 78:11, 82:7 compared 209:2 comparing 80:2 comparison 201:15, 201:20, 206:13, 207:5 compatible 110:1, 159:4 complete 35:13, 73:21, 75:10, 128:22, 198:7, 200:7, 217:5 completed 34:22 completely 193:4, 193:7, 193:9, 194:16,	194:19 complex 183:4, 184:4 complexity 183:1, 183:21, 184:8, 184:19 component 95:18, 99:10, 100:18, 105:11, 129:19, 198:20 components 46:2, 46:3, 46:8, 96:22, 99:6, 109:5, 109:8, 147:18, 153:17, 206:10, 207:4, 209:10 composite 110:15 comprised 45:4 comprising 153:17 computer 159:2 computes 95:7 concept 108:1, 122:13, 179:9 concepts 113:21, 113:22, 121:7, 121:9, 122:2, 189:7 condition 11:22 conducted 2:1 configurations 69:5 configured 120:12 confined 82:17 confirm 8:12, 26:12, 36:18, 39:17, 39:21, 85:17,	117:12 confirmed 87:4 confirms 177:16 conflict 185:4 confused 21:13, 121:4 confusing 14:5 confusion 35:19, 60:3, 122:1 conjunction 116:20 connect 29:10, 68:4, 126:12, 128:4, 143:9, 143:13 connected 31:19, 47:3, 48:4, 48:7, 62:16, 68:2, 121:2, 121:19, 122:10, 122:16, 126:7, 133:17, 148:1, 205:6 connecting 122:5, 143:14, 149:22, 172:12, 172:13, 174:15 connection 28:10, 33:5, 52:9, 60:6, 60:9, 63:13, 105:12, 118:16, 122:17, 124:12, 125:2, 125:4, 126:13, 127:18, 127:21, 128:1, 128:18, 128:20, 129:3, 129:4, 129:10, 129:14, 132:5, 132:9, 132:19, 133:5, 135:11, 135:14, 135:17, 136:14,
--	--	--	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

229

<p>136:17, 137:2, 137:8, 137:10, 137:14, 137:16, 137:17, 137:22, 138:2, 138:4, 138:5, 138:6, 140:15, 142:15, 144:20, 148:19, 148:22, 149:20, 150:3, 150:14, 158:12, 164:16, 164:20, 174:8, 174:12, 174:13, 174:20, 191:20, 194:14</p> <p>connections 118:5, 119:13, 119:14, 141:4, 146:16</p> <p>connects 68:17, 146:9, 149:21</p> <p>consider 69:16, 78:19, 96:8, 185:22</p> <p>consideration 96:10, 96:11</p> <p>considered 81:6, 95:18, 159:19, 164:15</p> <p>considering 80:20</p> <p>consistency 173:11</p> <p>constant 204:8</p> <p>constituent 209:17, 211:2, 211:7, 211:11, 212:1, 212:8, 212:15, 214:5, 214:9</p> <p>constitute 85:3, 138:3, 180:2</p> <p>constituted 133:19, 134:10, 134:13, 134:17,</p>	<p>134:19, 135:2, 146:5</p> <p>constructed 77:7, 82:6</p> <p>construction 77:6, 78:6, 78:16, 78:20, 78:21, 79:4, 79:11, 81:21, 82:1, 82:3, 82:5, 82:8, 82:9, 82:13, 82:20, 82:21, 82:22, 83:3, 139:19, 154:5, 154:20</p> <p>containing 181:5, 181:10, 181:22</p> <p>contains 8:18, 125:14, 166:8</p> <p>context 13:17, 21:1, 44:3, 53:17, 54:3, 56:1, 56:14, 66:14, 87:21, 136:15, 137:6, 137:7, 138:6, 171:9</p> <p>continually 33:11, 204:2</p> <p>continue 6:10, 39:11, 144:13, 146:18</p> <p>contrary 146:15</p> <p>control 8:5, 84:22, 88:20, 90:8, 90:9, 90:18, 92:11, 92:19, 110:19</p> <p>controller 205:14, 205:17</p> <p>controlling 120:13</p> <p>controls 92:12, 92:13</p>	<p>convention 173:22</p> <p>conventional 136:2, 136:12, 137:18, 146:13, 215:8</p> <p>conversation 172:5</p> <p>copies 36:1</p> <p>copy 7:9, 7:22, 8:7, 9:9, 9:11, 10:4, 63:17, 64:8, 94:22, 115:3, 116:13, 175:2, 175:21, 176:2, 176:10, 176:15</p> <p>cordless 161:9, 161:11, 161:17, 161:19, 162:3, 162:6, 162:14</p> <p>corporate 3:19, 218:20</p> <p>corrected 18:20, 35:19, 91:1, 99:21, 100:11</p> <p>corrections 9:1, 217:6</p> <p>correctly 11:16, 15:14, 17:5, 53:12, 66:18, 95:20, 110:13, 125:19, 160:1, 165:4, 192:13, 194:5</p> <p>correlation 87:11</p> <p>correspond 178:8</p> <p>corresponding 93:4, 123:7, 123:10, 166:21</p> <p>corresponds 150:19, 152:6, 166:12</p>	<p>cost 195:12, 207:12</p> <p>costs 184:8, 184:20</p> <p>could 7:10, 7:21, 35:22, 41:5, 45:13, 48:9, 54:19, 54:21, 56:15, 56:16, 56:17, 56:18, 58:13, 60:5, 61:3, 82:15, 83:4, 85:17, 94:6, 109:8, 111:14, 114:6, 114:12, 116:16, 116:21, 117:12, 124:19, 134:18, 138:14, 154:18, 157:2, 159:1, 159:15, 159:17, 172:17, 172:18, 193:22, 194:5, 194:15, 195:4</p> <p>counsel 6:4, 8:4, 117:3, 176:5, 218:16</p> <p>couple 7:21, 70:13, 84:6, 115:1, 123:17, 139:5, 141:12, 164:10, 187:6, 187:8, 213:5</p> <p>coupled 141:19, 142:8, 143:18, 145:19, 145:21</p> <p>course 53:16, 208:14</p> <p>court 51:12, 51:16, 81:13, 81:17, 81:19, 154:6, 166:1</p> <p>court's 77:6, 78:6,</p>
---	--	---	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

230

78:16, 79:4, 79:10, 82:5, 82:13, 83:3 cover 9:17, 10:5, 39:22, 64:10, 64:12 coverage 71:17, 123:3, 123:8, 123:10, 123:14, 123:16, 124:1, 124:5, 124:10, 125:15, 125:16, 125:22, 141:21, 141:22, 142:2, 142:3, 148:4, 148:5, 149:17, 163:9, 165:8, 165:13, 165:17, 166:10, 166:11, 166:16, 166:21, 167:4, 167:17, 167:21, 168:6, 168:9, 168:10, 168:12, 168:16, 168:19, 168:22, 169:1, 169:7, 169:16, 169:18, 169:20, 170:16, 170:19, 171:1, 171:4, 171:11, 171:18 covered 126:16, 132:3 crr 1:22 current 28:10, 30:21, 31:19 currently 28:8, 106:13 cutoff 215:19	173:19, 173:21, 173:22, 174:16, 174:18, 211:12, 212:2, 212:9, 214:18 data 28:9, 33:5, 109:18, 109:19, 158:12, 177:21 date 8:13, 217:10 day 6:9, 6:11, 6:22, 7:2, 54:1, 65:13, 114:3, 219:2 days 6:21, 7:21, 10:13, 12:20, 31:15, 41:1, 115:1, 138:21, 139:5, 193:14 dcmrn 141:21, 142:19, 143:5, 143:12, 148:4, 149:18, 149:21, 150:5, 150:14 deal 189:13 dealing 199:3 deals 15:21 death 114:22 decided 81:20 deciding 203:16 decision 49:21, 208:7 decision-making 209:7 declaration 5:8, 6:14, 7:6, 7:12, 7:22, 8:12, 19:13,	25:12, 27:18, 37:11, 40:9, 43:6, 44:4, 49:13, 49:16, 54:20, 55:6, 58:1, 61:18, 64:22, 69:22, 76:22, 77:15, 83:22, 85:12, 85:20, 85:22, 86:1, 86:10, 86:15, 86:16, 87:15, 88:18, 89:1, 90:22, 91:7, 91:11, 96:14, 97:9, 98:4, 99:1, 99:15, 99:18, 104:7, 109:1, 109:13, 111:10, 117:22, 124:19, 125:6, 126:5, 126:17, 127:3, 127:8, 127:9, 129:7, 130:11, 138:15, 139:21, 141:8, 155:5, 156:21, 161:5, 167:9, 169:11, 172:6, 177:1, 177:16, 182:10, 189:4, 196:14, 197:7, 210:15 decoder 110:7, 110:12, 110:18 deficiency 108:13 defined 31:6, 40:16, 40:20, 61:15, 72:18, 72:19, 74:22, 107:18, 110:11, 147:10, 214:11 defines 73:13 definitely 60:10, 116:3,	154:16, 164:6, 172:3 definition 144:14, 157:5, 157:9 degree 96:1 dependent 98:6 depending 158:8 depends 12:1, 98:6, 152:10, 158:16 depicted 105:7, 204:21 deponent 217:1 deposition 1:17, 2:1, 5:7, 36:2, 39:4, 138:22, 218:8, 218:10, 218:16, 218:17 depositions 6:20, 6:21 describe 27:1, 27:3, 27:5, 29:11, 33:2, 33:21, 179:9, 207:3 described 13:8, 26:2, 26:4, 26:6, 26:18, 27:5, 27:10, 27:14, 29:6, 31:9, 31:16, 31:22, 41:13, 42:2, 42:5, 51:5, 53:7, 53:10, 58:11, 59:6, 59:7, 59:10, 72:9, 76:1, 95:6, 107:19, 126:21, 161:10, 177:8, 203:7 describes 15:8, 23:17,
D dartbrook 3:13 dashed 173:2, 173:15,			

Transcript of Mark R. Lanning
Conducted on June 4, 2020

231

<p>27:15, 31:14, 42:5, 44:20, 51:3, 55:15, 58:17, 58:18, 59:5, 66:16, 74:1, 75:12, 126:10, 192:8, 206:1, 206:2, 207:4, 208:3 describing 16:5, 16:13, 25:18, 29:9, 29:14, 48:7, 62:10, 72:16, 73:6, 75:1, 111:16, 118:22, 140:4, 142:11, 165:12 description 90:8, 92:17, 126:18, 127:8, 145:5, 146:7, 146:14, 146:20 design 185:1, 190:21, 196:22, 197:20 designed 108:3, 110:8, 148:22, 150:10, 160:5, 187:18, 198:21 despite 41:14 destination 138:8 detail 26:20, 27:2, 31:14, 32:9, 45:14, 46:6, 46:7, 50:2, 50:22, 52:21, 56:12, 75:15, 81:3, 124:16, 125:5, 126:4, 149:15, 161:10, 177:8 detailed 43:14, 150:4,</p>	<p>151:9 details 144:17, 196:22, 197:20 detect 177:21 detector 177:20 determine 54:14, 57:2, 58:20, 58:22, 60:22, 75:2, 75:20, 75:21, 167:11, 188:8 determined 61:2 determines 204:11 determining 27:15, 29:9, 70:20, 72:22, 74:16, 185:21 device 27:22, 57:16, 139:7, 156:10, 157:14 devices 111:19 diagram 44:9, 44:15, 87:4, 108:6, 112:14, 135:5, 141:1, 204:17, 205:4 diagrams 106:21, 113:5, 113:8, 114:6, 140:9, 140:11, 206:1 diameter 66:19 did 7:20, 53:14, 55:4, 55:18, 59:18, 60:1, 60:17, 60:19, 77:5, 88:13, 88:14, 110:15,</p>	<p>114:16, 124:22, 151:20, 160:4, 173:7, 197:4, 212:21 didn't 106:19, 134:9, 158:3, 203:4 difference 60:7, 82:2 differences 112:16 different 12:2, 12:3, 16:8, 17:13, 19:7, 19:22, 20:16, 21:15, 21:18, 21:19, 24:17, 26:5, 30:11, 31:21, 34:1, 45:18, 46:8, 48:3, 48:4, 49:1, 49:9, 49:21, 50:10, 55:1, 58:18, 60:7, 65:13, 67:9, 68:10, 69:3, 70:6, 74:20, 78:15, 78:18, 78:22, 81:7, 83:4, 93:17, 94:16, 100:7, 100:18, 106:9, 106:20, 106:21, 109:15, 109:16, 109:21, 109:22, 111:6, 111:9, 111:13, 111:19, 111:20, 111:21, 112:19, 113:4, 113:5, 113:7, 113:10, 122:10, 124:20, 126:22, 128:10, 129:5, 129:18, 129:19, 129:20, 130:18, 132:6, 132:14, 142:11, 147:2,</p>	<p>148:9, 154:18, 154:19, 158:20, 162:11, 178:12, 178:13, 182:20, 184:6, 185:14, 194:7, 194:8, 195:14, 195:18, 197:5, 199:3, 203:4, 203:6, 206:13, 207:4, 207:5, 209:22, 210:4, 210:17, 214:15, 214:16, 214:21 differently 82:4, 92:4, 139:13, 150:6, 188:21, 208:20 difficulty 30:10 digital 109:18, 109:19, 208:12 ding 78:8, 79:2, 79:3, 84:12, 85:7, 85:9, 85:13, 87:9, 87:14, 88:8, 88:13, 88:18, 89:9, 89:10, 91:2, 91:13, 91:18, 99:1, 100:22, 101:12, 101:14, 102:20, 102:21, 103:1, 103:4, 110:1, 114:7, 132:18, 151:12, 162:21, 170:3, 172:6, 172:17 ding's 77:5, 77:15, 85:12, 85:21, 85:22, 86:16, 90:22, 91:7, 101:7, 101:20, 102:12, 102:14,</p>
--	--	---	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

232

<p>103:13, 104:6, 111:10, 182:22 direct 37:10, 76:21, 104:6, 105:12, 119:4, 130:20, 131:6, 131:16, 139:1, 140:11, 141:6, 141:20, 142:15, 144:20, 148:3, 148:5, 149:17, 150:14, 185:4 directed 29:18, 151:21, 196:9, 199:17 direction 66:1, 66:12 directly 138:7, 139:8, 140:7, 141:10, 141:20, 142:8, 143:4, 143:14, 149:22, 155:22, 157:4, 157:6, 157:7, 157:19, 158:6, 158:10, 158:12, 159:12, 159:21 disagree 21:7, 21:9, 118:13, 150:12, 168:3, 169:4, 169:8, 169:9, 170:8, 170:11, 187:12, 189:11, 211:21, 213:7, 213:19, 214:3, 214:7 disagreeing 82:4, 211:10 disagreement 79:12, 79:15 disclose 22:5, 22:7, 27:6, 30:3, 43:10, 43:15, 71:21, 73:21,</p>	<p>84:11, 89:6, 89:12, 89:19, 90:1, 91:22, 92:6, 97:3, 104:17, 105:10, 105:14, 106:6, 111:1, 133:3, 139:15, 179:9, 189:19, 191:16 disclosed 16:8, 27:19, 28:15, 34:17, 43:14, 47:18, 48:20, 70:5, 70:7, 70:11, 74:8, 80:5, 102:9, 106:13, 108:8, 111:5, 113:21, 113:22, 120:10, 136:3, 139:15, 150:10, 163:1, 163:7, 182:18, 187:4, 196:10, 210:16 discloses 10:18, 26:14, 26:22, 28:4, 57:6, 59:16, 60:15, 70:16, 73:17, 75:9, 88:8, 90:6, 90:15, 92:11, 96:20, 105:12, 118:14, 119:18, 121:1, 121:18, 126:5, 140:7, 161:8, 162:1, 177:13, 179:21, 181:3, 198:2, 200:1, 201:15, 201:17 disclosing 60:21, 179:12 disclosure 14:3, 14:4, 81:6, 207:1, 207:15, 209:13, 215:6</p>	<p>disclosures 82:10, 167:13, 215:12 discuss 41:16 discussed 10:11, 30:2, 32:8, 44:18, 50:1, 50:21, 52:21, 53:11, 54:13, 56:12, 59:13, 65:12, 88:19, 100:1, 106:3, 131:22, 134:15, 136:2, 139:4, 162:9 discusses 13:22, 41:15, 41:17, 169:12, 192:22 discussing 83:22, 206:17 discussion 7:14, 9:13, 10:16, 12:19, 39:6, 50:6, 52:13, 55:20, 109:2, 206:18, 208:5 discussions 183:10 displayed 176:16 dispute 96:17 dissuade 59:18, 60:1, 60:17, 60:19 distance 28:7, 61:10, 73:13 distinct 89:4, 166:12 diversity 110:6, 110:7, 110:12, 110:17 division 56:5, 56:7</p>	<p>document 8:17, 8:18, 9:2, 9:7, 9:17, 10:6, 10:7, 10:10, 36:4, 39:14, 39:19, 39:22, 40:1, 64:10, 117:9, 117:20, 176:13, 176:16, 176:21 documents 36:18, 117:13 does 10:21, 19:20, 19:21, 20:13, 20:15, 20:19, 22:5, 22:12, 27:5, 28:1, 29:11, 30:2, 31:20, 32:17, 33:14, 41:16, 43:10, 43:15, 43:16, 46:2, 50:14, 64:10, 65:2, 66:21, 70:18, 71:21, 72:1, 73:19, 80:1, 82:1, 84:11, 84:13, 87:9, 89:5, 89:8, 89:9, 89:12, 89:19, 89:22, 91:2, 91:3, 91:13, 91:22, 92:6, 97:3, 104:17, 105:10, 105:14, 106:6, 107:11, 108:16, 119:13, 120:13, 130:19, 132:21, 133:3, 134:4, 144:1, 148:10, 148:11, 149:22, 167:21, 201:11, 202:9, 210:3 doesn't 32:18, 32:22,</p>
---	--	---	--

<p>33:21, 46:7, 46:12, 49:3, 69:16, 75:14, 89:19, 93:15, 107:22, 110:3, 111:1, 122:13, 135:1, 140:1, 144:7, 149:5, 156:22, 157:21, 158:8, 174:17, 174:19, 179:9, 180:6, 182:3, 182:4, 189:18, 190:12, 191:16, 192:7, 199:5, 199:6, 210:2, 210:6 doing 6:8, 18:8, 64:1, 87:8, 88:5, 103:7, 116:16, 128:22, 174:4, 183:21, 208:20 don't 36:6, 36:10, 36:17, 48:6, 52:1, 55:22, 57:9, 59:21, 72:4, 76:10, 78:13, 78:15, 79:13, 80:21, 82:2, 83:8, 84:4, 85:8, 90:6, 90:9, 90:19, 91:5, 93:10, 94:2, 94:5, 96:4, 96:6, 106:17, 113:18, 114:7, 115:3, 116:4, 121:7, 121:9, 139:18, 140:3, 140:6, 140:10, 143:13, 150:4, 152:8, 153:18, 154:3, 154:5, 154:19, 154:20,</p>	<p>155:10, 157:2, 157:8, 160:11, 166:3, 174:4, 185:20, 193:6, 193:7, 194:17, 214:10, 214:12 done 30:17, 39:17, 49:4, 94:15, 103:7, 110:16, 199:11, 199:12, 203:7, 203:8, 203:10 down 9:6, 10:10, 13:19, 33:6, 40:4, 117:20, 118:19, 146:18, 168:1, 176:21, 186:11, 202:13 dr 77:5, 78:8, 79:2, 79:3, 84:12, 85:7, 85:9, 85:12, 85:13, 85:21, 85:22, 86:16, 87:9, 87:14, 88:8, 88:13, 88:18, 89:9, 89:10, 90:22, 91:2, 91:7, 91:13, 91:18, 99:1, 100:22, 101:7, 101:12, 101:14, 101:20, 102:12, 102:14, 102:20, 102:21, 103:1, 103:4, 103:13, 104:6, 110:1, 111:10, 114:7, 132:18, 151:12, 162:21, 170:3, 172:6, 172:17, 182:22 drafted 41:2 drafting 55:6</p>	<p>drawback 183:3 drawbacks 187:10 drawn 150:7, 163:21, 171:22, 173:1 drew 106:20 drill 118:19 drive 3:19, 218:20 drives 33:6 dropped 62:22, 63:14 drops 74:19, 75:16 dual-mode 210:9, 210:15 due 52:13, 183:3, 187:10 duly 6:3, 218:8 dumb 203:14, 204:3 dumbed 186:11 duplicate 177:5, 179:19 duplicated 177:18 during 55:6</p> <hr/> <p>E</p> <hr/> <p>each 6:11, 62:20, 68:15, 68:17, 93:3, 93:4, 115:6, 118:7, 118:8, 123:1, 130:22, 131:11, 131:12, 136:8, 136:9, 145:18, 163:16, 165:7,</p>	<p>165:12, 166:12, 166:15, 167:4, 168:4, 168:8, 169:6, 170:18, 171:10, 177:22, 179:4, 179:5, 179:10, 183:5, 202:10, 202:20, 206:2 earlier 14:9, 34:21, 50:1, 51:5, 53:15, 54:13, 59:13, 72:13, 84:16, 87:3, 135:19, 140:20, 140:21, 143:17, 162:9, 183:10, 209:5 early 41:1 easier 108:22, 112:21 edge 71:16 efficient 94:18 either 22:21, 25:8, 32:15, 47:21, 80:2, 101:16, 101:21, 110:3, 110:9, 125:2, 141:20, 142:2, 143:4, 143:11, 159:10, 182:18 electronic 174:4 element 92:1, 92:20, 92:22, 96:15, 150:18, 152:5 elements 106:7, 111:5, 118:9, 147:13, 149:6, 154:14, 204:20 else 105:8, 182:5</p>
---	--	---	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

234

<p>elvin 3:11, 3:12, 35:22, 36:16, 36:17, 51:17, 83:10 embodiment 10:17, 10:19, 12:1, 12:4, 13:4, 13:15, 13:21, 14:7, 14:10, 14:13, 15:5, 15:9, 15:10, 15:11, 15:13, 15:14, 15:17, 15:21, 16:6, 16:9, 16:10, 16:12, 16:14, 17:11, 17:12, 17:15, 17:16, 17:17, 17:20, 18:2, 18:15, 18:16, 19:3, 19:4, 19:9, 22:13, 22:16, 23:18, 23:19, 25:5, 31:8, 31:10, 40:18, 44:10, 44:15, 44:19, 44:20, 45:20, 45:21, 47:21, 56:4, 56:6, 56:8, 87:5, 169:14, 180:22, 181:3 embodiments 12:2, 12:3, 16:8, 22:11, 25:1, 25:8, 28:5, 35:1, 86:3, 86:20, 154:17 enables 24:9, 71:12 encoded 11:13 end 97:16, 105:1,</p>	<p>108:2, 108:12, 134:9, 147:5 ending 9:12 ends 136:17 engineers 203:13 enlightens 210:8 enough 47:10, 63:15, 91:16, 95:22, 96:13, 97:7, 114:4, 114:5, 182:9, 186:3, 187:5, 195:19, 198:9, 201:9, 203:21, 215:16 entire 7:18 entirely 195:3 environment 66:17, 68:11, 68:14, 68:21, 69:1, 123:5, 154:18, 162:9, 166:18, 171:12 environments 162:7 equally 7:3, 206:18 equates 93:19, 174:12 equipped 189:13 errata 217:7 error 93:14, 93:18, 94:3, 94:9, 94:17, 94:20, 95:21, 96:1, 96:9, 96:12 errors 9:1 especially 151:5, 167:16</p>	<p>esquire 3:3, 3:11, 3:17 essentially 71:1 est 216:5, 218:22 establish 105:15, 105:19, 141:13 established 106:3, 137:19 et 51:1, 52:22, 53:8, 54:22 even 15:12, 32:22, 33:8, 35:19, 47:6, 56:18, 65:15, 66:17, 73:2, 78:8, 79:8, 85:7, 87:13, 102:2, 102:5, 106:3, 107:4, 112:17, 112:18, 113:1, 113:16, 119:5, 119:6, 124:18, 130:19, 134:16, 138:11, 154:11, 174:18, 186:21, 186:22, 189:19, 190:2, 190:12, 191:16, 192:7, 197:1 evening 216:3 ever 87:9, 140:4 every 74:20, 122:11, 150:18, 152:5, 152:17, 198:20 everybody 85:19, 213:1 everything 87:8, 104:5 exact 66:12, 87:11,</p>	<p>137:7 exactly 208:15 examination 5:2, 6:4 examined 217:3 example 24:13, 24:15, 80:21, 94:11, 125:22, 126:9, 126:17, 129:12, 135:18, 163:19, 164:5, 167:19, 173:16, 179:2, 182:15 exclusive 63:4 excuse 16:1, 18:13, 23:4, 35:8, 37:13, 61:22, 64:21, 71:11, 75:7, 77:4, 77:20, 78:5, 80:17, 86:2, 96:2, 123:2, 124:2, 124:12, 148:12, 168:17, 170:14, 181:1 exhibit 5:8, 5:9, 5:10, 5:11, 5:12, 5:13, 7:15, 9:14, 39:5, 39:7, 64:3, 64:5, 64:16, 117:1, 117:3, 117:7, 176:5, 176:7 exhibits 5:7, 36:1 exist 62:10, 124:5 existed 57:20 exists 63:5</p>
--	---	--	--

<p>expect 193:2</p> <p>experience 67:6</p> <p>experiencing 93:20, 94:7, 94:14</p> <p>experimentation 190:21</p> <p>expert 7:12</p> <p>expires 219:3</p> <p>explain 32:21, 35:14, 78:3, 122:3, 128:10, 183:22, 200:17</p> <p>explained 26:13, 78:8, 92:3, 125:5, 126:1, 126:4, 132:4, 144:1, 195:13</p> <p>explaining 125:20, 142:7, 142:18, 179:8</p> <p>explains 125:13, 166:7, 167:2, 201:3, 202:8, 202:14</p> <p>explanation 129:5, 145:12</p> <p>explore 46:15</p> <p>expressly 107:11, 149:10</p> <p>extensive 110:16, 111:17, 112:16, 190:21</p> <p>extent 39:16, 192:22</p> <p>external 47:4, 48:16, 49:6, 74:13</p> <p>extreme 193:7</p> <hr/> <p style="text-align: center;">F</p> <hr/> <p>face 117:13</p>	<p>facilitate 20:21, 20:22, 21:4, 22:2, 23:10, 23:11</p> <p>facilitates 21:10</p> <p>facilitating 22:6, 23:6</p> <p>fact 16:22, 17:6, 28:1, 34:9, 59:16, 60:15, 81:19, 91:13, 107:10, 107:13, 118:13, 124:17, 133:5, 142:12, 145:17, 146:1, 150:8, 151:3, 169:10, 174:18, 174:19, 211:15</p> <p>factor 20:18, 74:16</p> <p>factors 19:22, 20:16, 130:19</p> <p>fading 187:16, 189:14, 192:1, 193:1, 193:5, 194:16, 195:1, 195:4</p> <p>failed 77:9</p> <p>fair 47:10, 59:15, 60:14, 63:15, 79:7, 91:16, 95:22, 96:13, 97:7, 106:4, 180:7, 182:9, 187:5, 195:19, 198:9, 201:9, 203:21, 215:16</p> <p>fall 158:13</p> <p>familiar 138:20, 210:6</p> <p>far 75:11, 106:8,</p>	<p>196:8, 214:20</p> <p>fashion 47:7, 95:11</p> <p>fast 214:1</p> <p>faster 59:4</p> <p>fbs 123:18, 130:17, 141:19</p> <p>fbs1 145:22, 163:22, 164:20, 172:13, 174:9</p> <p>fbs1-6 202:18</p> <p>fbs2 145:22</p> <p>fbss 140:22, 150:1</p> <p>feasible 122:12, 126:12</p> <p>feel 33:1, 174:7</p> <p>feeling 198:17</p> <p>feet 66:18</p> <p>felt 112:22</p> <p>few 89:20, 160:16, 195:21</p> <p>field 207:19, 208:3, 208:9, 208:18, 210:7</p> <p>figures 43:17, 46:12, 126:21, 140:9, 211:15, 211:16</p> <p>filed 35:6</p> <p>final 79:20, 139:1, 178:21</p> <p>find 33:19, 37:4,</p>	<p>42:8, 65:15, 75:1, 126:17, 145:6, 164:11, 174:6</p> <p>fine 6:8, 174:10, 175:11, 199:15</p> <p>finish 80:14, 175:14</p> <p>finished 191:8</p> <p>finishes 14:11</p> <p>first 6:22, 7:18, 15:13, 19:18, 34:8, 34:16, 56:18, 70:15, 71:2, 72:11, 73:14, 77:3, 89:14, 91:21, 113:17, 118:2, 130:14, 131:9, 132:4, 135:13, 144:3, 145:14, 162:22, 170:10, 176:15, 189:16, 189:17, 190:6, 190:11, 191:13, 197:11, 197:16, 198:16, 202:12, 202:18, 203:6</p> <p>fit 108:5, 110:22, 112:4</p> <p>fl 127:15, 141:20, 142:4, 143:3, 143:13, 144:4, 202:18</p> <p>flawed 184:22, 185:1</p> <p>flexibility 145:16</p> <p>flies 48:1, 48:2</p> <p>flip 9:20, 63:19,</p>
---	--	---	---

64:17, 116:17, 147:5 fly 149:14, 151:13 flying 62:1 focus 88:22, 179:18, 191:12, 195:20 focusing 97:12, 99:15, 157:22 folder 212:11 follow 76:10, 99:11, 101:4 follow-up 200:9 following 50:2, 50:5, 133:11, 147:13, 197:5, 202:11, 208:8 follows 6:3 force 108:5, 110:22 foregoing 217:4 forgotten 192:6 form 23:6, 30:8, 38:12, 57:16, 80:19, 106:16, 114:1, 149:12, 152:7, 152:19, 173:9, 189:15, 200:18 forms 80:22 forssen 177:17 forssén 175:3, 175:5, 175:21, 176:2, 177:4, 177:12,	179:8, 179:12, 179:21, 180:18, 182:19, 184:1, 185:3, 185:16, 186:8, 187:2, 188:17, 189:2, 190:15, 190:16, 190:22, 193:15, 195:18, 196:3, 196:9, 196:21, 198:20, 199:12, 205:22, 206:8, 206:9, 206:15, 206:21 forssén's 178:8, 182:15, 183:14, 186:17, 187:13, 189:10 forth 7:2, 14:6, 18:20, 19:8, 139:10, 218:8 forward 49:12, 69:21, 161:4, 162:17, 182:11 forwarded 203:15 found 34:19, 173:12 foundation 188:14 four 94:12, 94:19 fox 3:4 frame 159:15, 160:2, 160:4 frankly 46:7, 82:2, 121:9, 172:16, 190:10, 210:2, 212:22, 214:11 free 193:4, 193:7, 193:9, 194:16, 194:19	freeway 33:6 frequency 131:13, 137:10, 137:13, 137:14, 137:17, 137:22, 179:6 fringe 25:22, 26:16, 27:8, 29:4, 41:22, 54:7, 54:11, 57:4, 61:13, 63:13, 72:7 front 10:4, 36:3, 36:19, 40:7, 60:12, 65:8, 94:22, 117:14, 140:13, 176:10, 176:16, 199:14 frozen 34:9 fsb 147:15 fsbl 174:15 ftn 123:15, 146:6 full 21:1 fully 134:19, 171:14, 185:7 function 47:12, 165:8 functional 75:12, 76:1, 109:4, 109:8 functionalities 92:18 functionality 11:19, 13:8, 16:13, 98:1, 100:22, 101:8, 102:15, 103:3, 103:14, 104:11, 104:17, 105:5,	106:6, 106:8, 106:11, 106:13, 106:21, 108:13, 108:16, 110:9, 110:14, 129:21, 158:9, 186:8, 186:12, 186:14, 190:18, 196:5, 196:11, 201:19, 201:22, 203:9, 206:6, 209:7 functionality's 108:7, 111:1 functions 88:5, 98:20, 182:20, 205:12, 206:4 further 32:21, 77:4, 77:9, 95:6, 103:20, 218:14, 218:17 <hr/> G <hr/> gap 63:11 gaps 62:15, 62:21, 63:9 garbled 115:12 gave 144:16, 207:14 gavrilovich 4:5 gcfn 123:11, 123:16, 125:16, 142:3, 166:10 gcrn 123:8, 124:6, 125:17, 142:2, 143:10, 143:12, 166:11, 166:22 gee 103:18 general 74:1, 151:22,
---	--	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

237

152:13, 152:15, 152:21 generally 202:10 generate 204:2 generation 56:18 generic 204:22 get 36:4, 39:9, 44:2, 52:10, 66:20, 76:9, 76:17, 90:21, 94:15, 94:16, 129:16, 136:21, 143:1, 145:9, 196:7, 206:5, 206:9, 213:4, 215:2 gets 14:5, 57:3, 61:13, 63:12 getting 213:9 gilhausen's 23:4, 49:20, 53:22, 59:3, 97:13, 104:20, 106:12, 106:19 give 8:5, 65:16, 80:21, 94:11, 126:18, 135:14, 136:15, 136:19, 146:7, 172:21 given 71:20, 103:12, 203:4, 217:6, 218:12 gives 137:7 giving 39:12 global 123:7, 123:10, 123:14, 123:16,	123:22, 124:5, 124:10, 125:15, 125:16, 125:21, 142:2, 142:3, 166:10, 166:11, 166:21 go 6:11, 12:12, 20:15, 26:20, 27:1, 27:2, 27:11, 28:16, 30:9, 36:9, 47:22, 48:10, 52:5, 52:9, 63:19, 75:11, 75:14, 76:12, 127:10, 140:17, 142:18, 142:21, 143:6, 145:12, 151:1, 151:15, 155:4, 155:11, 158:22, 161:1, 182:19, 187:2, 199:5, 206:5, 206:9, 213:6, 214:20 goes 40:22, 53:4, 81:3, 128:11, 141:6, 143:9, 148:15, 200:16, 207:11 going 17:14, 36:9, 52:17, 76:5, 76:9, 84:6, 86:7, 108:7, 108:18, 115:19, 148:16, 150:21, 151:1, 151:4, 155:16, 160:10, 160:15, 170:1, 191:11, 200:18, 200:20, 212:18, 212:19, 213:10 goldstein 3:4 gone 124:16, 184:18	good 6:6, 6:9, 31:1, 39:10, 83:8, 94:8, 117:11, 162:16, 175:9, 180:13, 216:2 got 8:6, 18:4, 73:9, 115:11, 124:17, 166:4, 197:12, 215:1 gotcha 135:7 grab 9:9, 38:22 great 6:17, 8:10, 8:15, 10:3, 10:8, 19:10, 19:17, 37:1, 64:9, 64:14, 76:16, 79:16, 95:2, 117:4, 117:18, 119:9, 120:4, 125:9, 154:10, 161:3, 176:14, 176:19, 191:9, 211:19 greater 32:8, 50:21, 52:21, 56:12, 131:14, 131:18, 137:22, 179:6, 205:15 greatly 66:2 grossly 162:21 ground 11:12, 14:20, 16:19, 16:22, 17:7, 17:22, 47:13, 48:1, 48:3, 48:4, 48:15, 49:1, 49:5, 49:9, 53:6, 55:12, 55:19, 56:3,	56:15, 56:16, 56:22, 57:6, 57:10, 57:20, 58:4, 58:6, 58:13, 58:16, 59:12, 59:17, 60:16, 61:14, 62:11, 63:6, 63:10, 73:10, 74:12, 77:21, 86:5, 86:22, 96:18, 174:22 ground-based 70:6 ground-initiated 71:13 group 1:5 gsm 159:7, 208:12, 208:19, 208:20, 209:3, 210:3 guess 33:1, 67:8, 79:12, 82:12, 83:3, 112:17, 115:8, 155:10, 165:19 guidelines 6:19, 7:2 guys 83:10, 83:16, 216:4 <hr/> H <hr/> had 29:18, 59:8, 84:6, 87:3, 97:12, 99:14, 111:4, 116:12, 116:14, 126:15, 131:22, 139:4, 144:22, 155:13, 159:7, 159:8, 160:2, 175:7, 181:16, 191:10 halfway 84:9, 182:13
--	--	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

238

<p>hand 57:17, 62:4, 73:8, 219:2 hand-held 162:5 hand-off 26:1, 26:18, 27:10, 27:20, 28:2, 28:9, 29:5, 29:8, 42:2, 58:11, 70:10, 72:9, 74:3 hand-over 28:3, 28:9, 202:10 handed 71:15 handle 187:16, 205:12 handled 198:22 handoff 24:18, 26:3, 26:10, 26:14, 27:6, 27:12, 28:2, 28:21, 29:11, 31:11, 33:22, 34:15, 34:16, 41:17, 42:4, 42:7, 61:1, 62:5, 65:4, 65:6, 70:16, 70:19, 71:1, 71:2, 71:21, 72:12, 72:13, 73:2, 73:7, 73:18, 73:21, 74:2, 74:6, 74:18, 75:10, 75:13, 75:15, 75:21 handoffs 65:11, 66:2, 66:10, 66:15, 66:16, 67:1, 67:6, 67:7, 67:10, 67:14,</p>	<p>67:16, 67:19, 68:1, 68:4, 68:9, 68:21, 69:15, 69:16 handover 28:3, 29:21, 30:3, 30:7, 33:18, 33:20, 62:22, 65:6, 73:15, 75:22, 120:18, 122:13, 208:7 handovers 69:8 handy 9:5, 117:21 happening 31:17 happy 114:22, 136:17, 151:8, 173:5, 190:1, 192:5 has 17:16, 17:18, 31:18, 32:12, 34:22, 41:3, 42:7, 42:8, 46:5, 54:22, 72:14, 74:17, 78:8, 79:2, 79:4, 85:7, 88:5, 90:17, 93:16, 94:17, 94:19, 96:17, 96:22, 99:1, 102:21, 117:2, 119:4, 128:6, 128:19, 132:6, 132:7, 132:9, 137:14, 137:22, 163:9, 164:18, 165:7, 167:4, 168:9, 168:15, 168:19, 169:15, 169:20, 170:2, 170:19, 171:10, 171:22, 172:9, 176:4, 182:7,</p>	<p>184:18, 186:10, 187:6, 189:16, 193:8, 194:18, 198:6, 200:6, 201:18, 205:15, 209:2, 209:6, 209:8, 214:10 hasn't 31:3 haven't 19:5, 35:8, 35:11, 87:21, 91:5, 149:14, 151:10 having 6:3, 17:20, 18:15, 18:16, 45:16, 52:17, 55:12, 62:22, 131:13, 151:16, 165:13, 179:6, 184:4 he's 8:6, 36:5, 54:1, 73:9, 73:11, 78:15, 79:13, 99:4, 103:7, 142:17, 194:9, 209:21, 210:4, 210:11, 214:12 heads-up 39:12 hear 51:12, 51:13, 51:16, 51:18, 51:19, 51:20, 51:21, 51:22, 166:2 heard 135:14 hearing 213:21 held 7:14, 9:13, 39:6, 52:13 hello 51:18</p>	<p>help 109:1, 125:10 helps 13:1, 65:16, 155:15 hence 123:4, 166:17 henceforth 165:10 her 52:11 here 6:9, 6:13, 7:3, 8:22, 12:3, 14:21, 20:1, 24:21, 26:13, 27:3, 28:22, 29:7, 30:1, 30:10, 30:19, 31:17, 53:17, 56:1, 62:10, 64:7, 66:14, 76:3, 76:8, 76:9, 76:19, 77:17, 80:9, 80:20, 81:22, 82:13, 83:9, 83:13, 88:9, 89:21, 90:19, 91:10, 91:21, 95:14, 105:17, 121:11, 122:19, 123:21, 124:4, 127:7, 132:16, 133:16, 135:6, 135:10, 139:5, 139:17, 145:6, 146:8, 147:20, 148:15, 149:14, 150:7, 156:11, 157:9, 158:10, 161:15, 166:7, 167:2, 173:11, 178:6, 179:20, 181:18, 182:14, 182:20, 183:12, 196:1, 196:8, 196:19, 197:13,</p>
--	---	---	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

239

197:18, 206:3, 206:14, 215:3 here's 208:18 hereby 217:2, 218:6 herein 95:7 hereinbefore 218:8 hereunto 219:1 hey 115:17, 175:7 high 46:8, 61:4, 67:1, 94:6, 94:7, 94:13, 94:19, 94:20, 118:18 high-level 111:11, 190:18, 191:2, 191:5, 196:4, 196:5, 196:10, 204:22, 205:1, 206:1, 215:5 high-powered 148:2 higher 56:2, 73:1 highlighted 79:9, 127:5, 127:11 highlighting 79:8 highlightings 8:2, 9:22, 63:20 highlights 39:18, 116:18, 176:11 highly 206:8 him 8:5, 36:4, 60:1, 60:5, 76:12	himself 112:19, 114:13, 187:1 his 49:22, 53:14, 59:19, 79:4, 87:15, 88:18, 107:1, 107:5, 172:6, 190:22, 210:13, 210:14, 210:22 hold 9:4, 144:11 hopefully 6:10, 111:3, 145:6, 147:3, 194:20, 215:2 hoping 121:16 hour 59:14, 76:3, 115:20, 160:10, 175:15, 212:21 hours 151:1, 151:6, 151:16 how 6:7, 13:18, 15:10, 43:17, 46:13, 49:4, 55:14, 58:22, 61:2, 61:3, 71:4, 73:17, 73:21, 75:1, 75:2, 75:9, 75:11, 75:17, 78:3, 83:13, 96:4, 102:6, 111:2, 126:11, 134:4, 142:15, 149:4, 152:1, 156:15, 157:2, 166:4, 167:6, 190:22, 204:11, 207:3, 207:4, 215:10, 215:14 however 26:20, 69:15,	94:16, 106:9, 127:22, 149:7, 162:21 huge 183:6, 184:13 hyphenated 28:2, 28:3 <hr/> I <hr/> i'll 16:5, 16:7, 20:10, 27:11, 27:16, 36:8, 40:7, 48:13, 49:13, 55:15, 60:12, 63:18, 65:14, 80:14, 100:4, 120:8, 122:3, 124:22, 125:7, 127:9, 136:17, 144:13, 145:6, 145:11, 146:7, 150:21, 155:13, 156:12, 186:1, 199:17 i've 25:10, 27:14, 53:21, 58:16, 62:12, 70:18, 72:13, 78:9, 85:9, 88:6, 88:7, 88:14, 89:16, 90:7, 90:19, 101:17, 102:4, 102:18, 102:21, 104:14, 105:17, 107:3, 107:21, 112:9, 112:15, 112:17, 115:8, 118:20, 119:6, 124:16, 125:4, 126:4, 126:20, 127:1, 129:4, 141:7, 144:4, 144:5, 150:20, 152:12, 153:13, 156:13, 156:18, 162:4,	164:10, 167:8, 169:10, 169:11, 170:3, 172:6, 184:12, 186:2, 187:20, 192:5, 192:6, 199:4, 211:18, 214:17 icmrn 142:1, 142:21, 143:8 idea 29:14, 180:9, 191:4, 198:21 ideas 113:10 identification 7:16, 9:15, 30:14, 39:8, 64:6, 117:8, 176:8 identified 71:3, 72:1, 72:15, 73:11, 74:10, 85:7, 104:1, 104:10, 108:12, 163:14, 187:8, 201:2, 211:22, 212:7, 212:9 identifies 55:11, 173:10, 208:5, 208:6 identify 71:5, 72:12, 73:3, 81:21, 87:9, 109:7, 143:22, 190:12 identifying 72:17, 180:15, 211:2, 215:7 ignoring 198:17 il 142:1, 142:4 illustrates 45:10, 153:6 immediately 133:11
--	---	---	--

<p>implement 182:15, 183:14, 206:11, 215:10, 215:14</p> <p>implemented 98:2, 101:9, 102:16, 103:15, 104:12, 106:14, 124:6, 124:10, 124:11, 125:21, 153:7, 153:11, 154:13, 183:5</p> <p>implementing 65:10</p> <p>implements 97:22</p> <p>implies 165:15</p> <p>important 53:17, 56:1, 94:10</p> <p>impossible 183:13, 185:16, 185:20, 186:5, 189:1, 213:9</p> <p>improved 187:16</p> <p>inc 1:5, 51:1, 53:1</p> <p>include 19:20, 20:13, 20:19, 37:17, 50:5, 58:13, 77:14, 82:1, 82:16, 85:21, 86:10, 86:15, 88:14, 133:10, 148:11, 148:12, 152:5, 154:7, 157:16, 158:3, 158:12, 159:16, 159:17</p> <p>included 62:13, 79:11, 85:4, 88:7, 89:20, 101:17, 102:18, 112:9, 112:14, 112:15,</p>	<p>126:21, 127:1, 129:4, 133:15, 135:3, 135:5, 150:18, 154:6, 154:8, 154:15, 155:1, 162:4, 169:10, 170:3, 172:7, 191:5, 208:4, 212:16</p> <p>includes 58:15, 132:5, 139:7, 147:13, 167:3, 202:10, 205:6</p> <p>including 87:15, 107:3, 167:5, 214:5</p> <p>incoming 11:9, 11:20, 12:11, 12:18</p> <p>incorporated 107:16, 109:9</p> <p>incorrect 140:19, 163:7</p> <p>indeed 146:14</p> <p>independent 98:6, 98:7, 98:16, 100:8</p> <p>indicate 139:5</p> <p>indicated 12:20</p> <p>indicating 95:14, 135:16</p> <p>indication 97:6, 107:6</p> <p>indicator 93:9, 93:12, 93:22, 95:8, 95:15</p> <p>indicators 93:3, 93:4</p> <p>indirect 141:22</p> <p>indirectly 141:21, 142:9, 142:21</p>	<p>inexpensive 186:13</p> <p>inform 215:9</p> <p>information 95:8, 129:6, 148:6, 149:6</p> <p>initial 14:7, 14:13, 26:10, 30:17, 31:6, 33:19, 42:7</p> <p>initially 35:15, 149:16, 206:22, 207:15</p> <p>initiate 22:12, 23:19</p> <p>initiated 25:13</p> <p>initiates 22:14, 22:17, 23:5</p> <p>input 203:6</p> <p>insert 159:2, 192:14</p> <p>inserting 193:21</p> <p>inside 141:1, 142:14, 214:18</p> <p>insisting 36:10</p> <p>instance 109:17, 123:7, 131:9, 146:3, 158:4, 166:20</p> <p>instances 118:15, 121:2, 121:19</p> <p>instead 27:21, 28:3, 28:11, 49:22, 53:10, 54:12, 55:1, 56:21, 97:15, 104:22, 106:22, 130:2, 141:11, 144:11,</p>	<p>151:22, 173:6, 179:12, 183:16, 195:9</p> <p>intelligence 183:3, 184:14, 184:19, 187:10, 201:4, 201:8, 201:11, 201:12, 201:14, 201:17, 201:21, 202:8, 203:1, 203:18, 207:11, 209:2, 209:8, 211:18</p> <p>intended 181:9</p> <p>intending 197:11</p> <p>intensity 95:10, 95:16, 96:6</p> <p>intent 165:21</p> <p>interconnected 132:14</p> <p>interface 95:9, 132:7, 173:21, 174:1, 174:2, 205:1, 205:9, 205:10, 205:18, 205:19</p> <p>interfaces 132:7, 198:14, 200:14, 205:7</p> <p>interference 93:19, 94:7, 94:14, 94:20, 195:16, 195:17, 199:4</p> <p>intermediate 142:1, 142:4</p> <p>internal 46:2, 46:3</p> <p>interpret 13:18, 96:4, 96:7, 146:13, 148:16, 149:5, 149:13, 150:2, 150:17, 152:4,</p>
--	--	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

241

154:3, 181:13 interpretation 58:3, 135:4, 148:15, 156:20, 157:14, 214:21 interpreted 82:3, 152:2, 153:9, 153:13, 154:14, 156:13, 156:18, 158:15, 164:18 interpreting 82:9, 144:4, 145:1, 153:22, 214:16 interrupt 34:7, 190:10, 203:5 intervals 61:2 into 26:20, 27:2, 28:17, 35:9, 44:3, 75:8, 75:14, 81:3, 103:3, 107:16, 108:6, 109:9, 110:22, 112:1, 148:15, 159:2, 183:15, 186:14, 188:12, 199:5, 202:4, 203:19, 212:20 introduced 35:9, 35:11 invention 12:7, 12:10, 14:14, 14:16, 15:17, 16:5, 27:19, 28:4, 44:16, 47:22, 53:6, 74:8, 161:9, 162:2, 162:10, 177:4, 181:1, 181:3, 184:5, 184:22, 185:3, 185:6, 187:1, 188:17,	190:22, 193:21, 198:19, 206:11, 207:20, 208:4, 208:9, 208:18, 210:13, 210:21, 210:22 inventions 112:20, 187:4, 193:12, 193:15 inventor 49:21, 50:10, 112:19, 113:3, 114:11, 114:13, 114:16 investments 1:8, 183:6, 183:20, 184:13, 218:15 involved 24:13 involves 138:1 involving 7:13 ipr 1:11, 1:14 irving 3:21, 218:20 is--based 61:14 isn't 54:9, 62:9, 110:14, 180:10, 195:7 issue 54:6, 63:4, 79:19, 180:15, 189:19, 189:22, 190:3, 190:13, 191:17 issues 52:9, 52:14, 55:18, 60:9, 181:16, 189:14, 192:2, 192:4, 195:11, 199:3 it'd 144:12	its 28:12, 28:14, 30:14, 32:3, 34:5, 34:12, 37:7, 37:14, 38:5, 40:11, 40:15, 41:7, 41:14, 42:6, 43:11, 55:20, 69:17, 70:9, 81:21, 88:15, 90:16, 96:17, 97:22, 103:14, 104:11, 105:15, 126:10, 146:10, 161:8, 162:2, 162:10, 165:17, 167:17, 167:21, 168:12, 169:15, 169:18, 170:19, 182:16, 184:9, 184:18, 185:5, 190:13, 193:21, 198:2, 200:1, 200:17, 206:15, 207:3, 209:17 itself 183:19, 197:8 <hr/> J <hr/> job 1:20 judith 1:22, 2:11, 218:3 judy 52:8 jumbled 197:12 jump 44:3 june 1:18, 218:21, 219:2 <hr/> K <hr/> keep 9:5, 76:5,	124:19, 132:11, 144:15, 146:8, 187:18, 198:17, 199:14 kept 184:21 kessler 3:4 key 28:22, 29:7, 59:1, 134:8, 206:3 kind 8:1, 114:22, 136:16, 176:9, 196:16 klein 50:15, 53:13, 55:17, 59:18, 60:17, 71:10, 72:2, 107:11 know 9:1, 12:10, 19:6, 48:6, 76:3, 91:4, 91:5, 93:9, 96:4, 96:6, 108:18, 115:4, 148:14, 152:8, 155:10, 157:2, 157:8, 160:9, 166:3, 173:5, 181:15, 193:6, 193:7, 194:17, 201:16, 214:12, 215:14 knowing 81:19 known 51:6, 125:15, 125:16, 166:9, 166:11, 205:21, 206:8, 208:11, 209:17, 211:3, 214:6 knows 30:15 <hr/> L <hr/> labeled 46:18, 84:22,
--	---	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

242

<p>89:16, 110:6, 142:19, 143:5, 143:8, 143:13, 211:9, 212:11, 212:12, 214:18, 214:19 labelled 177:19 lack 113:11, 113:15, 190:15, 193:11 lacks 20:20, 196:21, 197:19 language 38:19, 78:3, 81:20, 181:18 lanning 1:17, 2:1, 5:2, 5:7, 6:2, 6:6, 7:15, 7:20, 9:8, 9:14, 9:20, 10:11, 35:8, 36:3, 36:15, 36:20, 37:3, 39:7, 39:10, 39:14, 40:6, 63:22, 64:5, 64:17, 76:21, 83:10, 83:21, 88:2, 116:2, 116:12, 117:7, 160:22, 176:7, 176:22, 217:2, 218:7, 218:18 lanning's 7:12 laptop 159:2 large 62:21, 145:9 last 7:21, 8:11, 10:12, 52:17, 61:21, 61:22, 92:22, 156:21, 165:6, 177:3, 184:12, 213:5</p>	<p>later 95:7, 145:16 law 3:12 layer 127:14, 127:21, 128:3, 128:9, 130:6, 130:16, 132:10, 132:11, 132:13, 141:3, 141:5, 141:7, 141:13, 142:14, 142:16, 143:1, 143:3, 143:4, 143:7, 143:17, 143:18, 143:22, 144:1, 144:5, 144:7, 144:9, 144:12, 144:18, 144:19, 146:20, 148:11, 148:13, 149:9, 149:10, 202:4 lead 191:11 leading 70:14, 90:4 leaf 8:1, 176:10 least 10:5, 10:16, 19:6, 19:7, 19:22, 20:15, 22:7, 25:11, 37:17, 38:4, 39:21, 40:10, 47:11, 50:14, 53:14, 59:15, 65:9, 70:3, 70:8, 78:19, 78:22, 90:15, 92:21, 93:1, 93:12, 93:17, 103:18, 104:14, 107:19, 117:13, 118:15, 121:1, 121:18, 123:18, 125:14, 133:5,</p>	<p>133:16, 133:17, 133:18, 134:2, 134:10, 134:17, 146:4, 149:7, 151:1, 151:6, 157:11, 166:8, 176:14, 194:22, 202:11, 203:22, 211:8 left 99:21, 142:19, 143:5 left-hand 140:14, 149:19 legal 149:4, 152:9, 152:14 legal-oriented 151:5 lego 111:7, 111:13, 111:22, 112:4 length 151:3 less 68:5, 69:8, 205:16 lesser 96:1 let 8:17, 11:5, 18:3, 22:20, 27:1, 27:16, 30:9, 34:1, 37:4, 66:20, 68:10, 76:7, 76:21, 80:7, 80:14, 94:3, 100:6, 100:10, 102:12, 118:18, 124:2, 126:17, 126:20, 127:1, 136:6, 139:13, 141:11, 143:1, 145:8, 147:2, 151:19, 155:9, 157:13, 165:3, 166:4, 167:22,</p>	<p>168:17, 170:12, 173:3, 179:19, 187:7, 188:20, 190:5, 199:19, 213:5 let's 7:5, 36:12, 42:12, 42:13, 43:6, 43:7, 46:15, 49:12, 50:18, 50:19, 52:5, 52:9, 61:17, 61:18, 63:16, 64:17, 68:12, 69:21, 76:22, 83:21, 84:1, 117:21, 122:20, 122:21, 124:22, 130:10, 132:22, 140:12, 141:15, 146:22, 152:22, 153:2, 153:3, 155:4, 155:5, 160:15, 161:4, 162:17, 175:1, 175:13, 182:11, 191:12, 195:20, 196:13, 202:5, 202:6, 204:13, 204:16, 209:11, 209:12, 211:5, 213:4, 213:13, 213:15, 213:22, 214:1 level 46:8, 68:3, 68:4, 76:1, 94:19, 118:19, 141:20, 142:1, 142:4, 142:10, 144:6, 144:7, 144:10, 144:11, 144:12, 144:14, 144:18, 144:19, 146:20, 148:11, 148:12, 148:20, 149:1, 149:9, 149:10, 149:20,</p>
--	--	---	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

243

<p>149:21, 164:17, 172:1, 202:18 like 8:4, 12:5, 26:15, 33:2, 37:10, 38:8, 38:22, 50:1, 54:22, 57:11, 76:5, 76:11, 83:11, 87:8, 87:12, 91:12, 111:7, 111:22, 112:4, 115:20, 144:3, 146:13, 152:8, 152:14, 187:1, 193:15, 198:17, 198:19, 199:13, 199:14, 205:17, 205:18, 210:3 liked 144:15 limit 131:14, 131:18, 179:6 limitation 79:3, 87:10, 88:4, 88:11, 88:16, 89:16, 89:20, 90:2, 90:7, 90:11, 90:20, 91:8, 91:9, 91:15, 92:7, 97:1, 104:18, 105:18, 131:9, 132:21, 152:17, 180:5 limitations 106:12, 107:14, 108:9, 149:11 limited 59:13, 183:2 line 13:1, 13:3, 13:9, 13:12, 13:20, 14:4, 14:9, 14:15, 15:4, 15:16,</p>	<p>16:4, 16:13, 16:14, 18:2, 18:13, 19:1, 19:4, 19:18, 24:8, 25:4, 25:17, 26:7, 29:18, 30:5, 31:7, 31:9, 32:1, 35:1, 35:2, 40:17, 40:19, 41:21, 44:21, 45:3, 47:2, 48:11, 48:14, 50:19, 50:20, 52:18, 53:4, 54:5, 54:22, 56:3, 57:14, 65:21, 71:9, 72:6, 73:1, 92:10, 95:5, 122:22, 123:1, 125:13, 126:2, 141:16, 141:17, 143:8, 145:15, 147:20, 163:21, 166:7, 168:4, 169:5, 170:8, 170:17, 173:2, 173:4, 173:8, 173:10, 173:14, 174:1, 174:7, 174:11, 174:18, 174:19, 180:20, 202:6, 202:7, 202:13, 205:4, 207:18, 208:15, 209:13, 210:18, 210:19, 212:14, 213:17, 214:4, 214:22 lines 19:5, 44:14, 56:10, 65:18, 72:2, 75:9, 143:12, 143:14, 143:15, 149:22, 164:1, 172:12, 172:14, 173:15,</p>	<p>173:19, 173:21, 174:14, 174:16, 191:11, 208:1 link 45:6, 97:17, 105:1, 105:16, 105:20, 106:2, 108:2, 119:5, 119:7, 119:18, 120:1, 123:13, 123:14, 126:7, 127:15, 128:7, 128:9, 128:12, 128:16, 128:19, 128:22, 129:1, 130:5, 130:7, 130:15, 130:20, 131:6, 133:18, 133:19, 134:11, 134:13, 134:14, 136:16, 143:5, 148:4, 148:6, 149:18, 150:5, 166:12, 193:2, 195:12 linked 142:1 links 98:16, 120:12, 122:7, 125:14, 125:15, 125:16, 126:1, 145:20, 146:1, 146:4, 146:5, 166:9, 166:10, 171:22, 172:9, 172:11, 202:15, 208:6 list 19:22, 20:16, 130:18, 182:19 listed 99:6, 106:22, 107:21, 110:19, 139:20, 153:17, 167:18 little 14:5, 46:16, 76:6, 92:4,</p>	<p>115:12, 128:10, 156:16, 160:10, 188:21, 193:8, 194:18, 196:7 llp 3:18, 218:19 locate 61:3, 74:7 located 70:21, 97:18, 98:19, 105:2, 105:6, 105:8 locating 70:21, 106:22 location 12:10, 28:12, 28:14, 31:15, 31:20, 32:20, 33:7, 33:11, 33:13, 33:14, 34:19, 34:21, 35:20, 40:22, 41:4, 41:8, 41:9, 41:13, 41:16, 42:9, 54:15, 55:2, 97:22, 104:9 long 137:21, 147:17, 148:15, 148:16, 149:4, 151:2, 151:10, 168:1 longer 76:6, 84:4, 132:3 loo 154:2 look 7:5, 7:21, 20:18, 24:7, 27:7, 35:6, 36:10, 38:9, 38:16, 39:16, 43:7, 43:22, 44:6, 44:13, 46:16, 48:12, 50:18, 50:19, 52:18, 53:3,</p>
--	---	--	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

244

56:20, 61:18, 63:16, 71:6, 71:8, 76:22, 84:1, 84:5, 84:18, 91:6, 91:11, 92:9, 100:7, 108:22, 109:20, 115:2, 117:22, 122:20, 122:21, 125:10, 130:10, 140:14, 140:21, 141:15, 142:17, 147:6, 147:19, 148:18, 153:2, 153:3, 155:5, 155:13, 159:3, 167:12, 172:20, 173:3, 173:13, 173:20, 174:5, 179:19, 180:19, 190:1, 190:14, 190:15, 190:19, 191:3, 196:6, 196:13, 199:6, 202:5, 202:6, 204:13, 204:16, 206:21, 207:17, 209:11, 209:12, 211:5, 213:15 looked 19:5, 88:6, 99:21, 102:3, 138:20, 174:3 looking 57:13, 58:8, 62:20, 64:11, 75:4, 77:14, 85:6, 96:16, 109:11, 109:12, 110:20, 115:6, 129:6, 140:3, 144:13, 144:15, 145:5, 146:8, 149:18, 150:3, 150:7, 156:15, 165:1, 166:6, 179:1, 211:8	looks 117:14, 176:14 lost 34:8, 50:16, 207:21, 213:20 lot 68:9, 75:14, 127:8, 129:5, 148:14, 150:4, 150:22, 151:5 love 124:17 low 94:17, 195:11 lower 131:13, 131:18, 179:6 lunch 76:8, 76:16, 83:9, 83:12, 84:16 luxury 174:4 <hr/> M <hr/> macro 68:3, 68:4 made 9:2, 90:19, 100:4, 102:19, 111:11, 120:8, 188:19 main 79:18, 79:19, 135:5, 159:6, 184:5 make 8:2, 24:2, 52:2, 63:19, 76:7, 85:19, 87:12, 89:3, 121:9, 126:16, 129:16, 144:8, 159:4, 165:3, 176:11, 181:17, 185:9, 185:12, 186:13, 189:9, 190:17, 196:3,	196:17 makes 30:11, 59:17, 60:7, 60:16, 63:2, 129:22, 155:11 making 20:2, 21:4, 22:2, 23:11, 54:20, 98:22, 100:20, 101:12, 103:8, 111:9, 122:19, 168:8, 184:17, 185:2 manner 14:18, 205:14 many 42:6, 63:9, 66:6, 66:9, 94:9, 158:20, 210:8 mark 1:17, 2:1, 5:2, 6:2, 36:11, 36:13, 39:4, 217:2, 218:7, 218:18 marked 7:15, 9:14, 39:7, 39:15, 64:3, 64:5, 117:2, 117:7, 176:5, 176:7 markings 8:3, 9:22, 39:18, 63:20, 116:18, 176:11 maryland 2:14, 218:5, 219:7 match 10:5, 64:11, 108:16 matches 176:16 matter 34:8, 124:17, 150:8, 151:3,	169:10, 211:15 may 15:9, 38:10, 39:1, 57:14, 74:20, 99:12, 119:22, 120:3, 123:6, 123:8, 123:11, 123:17, 124:15, 127:9, 145:8, 152:12, 152:13, 152:18, 166:19, 166:22, 171:13, 187:9, 188:9, 192:1, 198:7, 200:6, 205:8, 205:10 maybe 13:1, 15:12, 52:5, 57:19, 60:6, 81:7, 108:22, 115:11, 125:10, 146:22, 151:15, 151:18, 157:8, 167:22, 194:20, 197:12 mcn 123:5, 145:18, 147:9, 147:10, 148:21, 148:22, 150:9, 150:11, 166:18, 184:10, 207:3, 209:15, 210:20, 211:7, 211:12, 212:1, 212:8, 212:12, 214:19 mean 13:15, 62:12, 119:14, 144:2, 158:17, 169:17, 172:9, 172:10, 192:19, 192:20, 201:12 meaning 94:13, 134:13, 139:6, 139:16, 139:20, 140:1, 158:14, 168:22,
---	--	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

245

169:1, 172:2, 184:22, 186:11, 206:5, 207:11 means 24:6, 47:8, 95:17, 134:18, 137:5, 174:19, 193:8, 194:18, 201:16, 201:21 meant 42:20, 85:18, 144:19, 158:19, 173:10, 208:14 measurement 203:8 mechanism 195:9 meet 72:1, 92:7, 106:11, 130:19, 132:21, 139:19, 140:1 meets 79:2, 90:10 megahertz 131:14, 131:19, 137:15, 138:1, 138:12, 179:7 memory 91:6 mention 135:10, 173:8, 192:7, 207:14 mentioned 81:9, 99:14, 175:7 merely 32:19, 73:17 merged 114:6 message 23:1 messages 21:2, 22:1, 23:9 messing 213:2 met 24:6, 78:21	method 27:21, 28:1, 59:2, 59:5, 59:6, 72:17, 72:22, 143:19, 198:18, 199:3 methods 54:13, 58:20, 59:1, 60:21, 61:5, 61:6, 70:21, 74:8 micm 143:1 micro-cell 165:10 microprocessor 205:9, 205:11 middle 17:3, 84:21, 105:14, 165:6 might 52:9, 65:17, 76:19, 78:17, 94:11, 94:16, 96:7, 96:9, 109:1, 114:21, 115:20, 152:16, 154:18, 175:8, 185:12 miles 59:14 mind 36:18, 41:5, 59:8, 83:11, 90:3, 93:10, 198:22, 201:21 minimal 62:14, 62:15, 184:7, 184:8, 201:4, 204:1, 207:11, 207:12, 209:2, 211:18 minimize 184:18, 184:19, 184:20 minimum 137:14, 137:22, 183:2, 184:14,	187:9, 201:7, 201:11, 201:14, 201:16, 201:17, 201:21 minute 44:2, 49:15, 76:11, 158:5, 172:22 minutes 76:15, 160:16, 195:21 mischaracterizat- ions 164:3 mischaracterizes 101:19, 150:20 mischaracterizing 162:22 misrepresents 38:13 missed 88:14 missing 92:20 misspoke 99:20 mistaken 79:21 ml 144:5 mlse 177:20 mobiles 163:9, 168:16, 168:20 mode 58:6 modem 158:13, 158:17, 158:19, 159:1, 159:3, 159:15, 159:19, 159:20 modems 159:8, 159:9, 159:10, 159:16, 159:17, 160:2, 160:3 modified 130:16	moment 84:5 money 114:4, 114:5, 186:3 more 27:2, 30:19, 36:13, 37:20, 45:14, 46:6, 46:16, 47:1, 50:2, 58:17, 59:11, 61:11, 63:3, 63:9, 82:16, 87:13, 89:21, 92:5, 94:10, 94:18, 96:8, 96:9, 136:15, 136:20, 146:19, 150:22, 151:4, 151:9, 152:9, 152:14, 155:11, 157:22, 160:16, 162:14, 165:19, 177:8, 188:1, 206:14, 215:2 morning 6:6, 74:12, 87:3 most 27:4, 43:13, 106:18, 200:17, 204:5, 204:6, 211:15 motivated 49:19, 112:11, 185:9, 185:12, 186:7, 196:20 motivation 112:8, 113:11, 113:16, 113:18 mounted 57:16, 123:9, 126:11, 127:17, 129:12, 166:22, 167:5, 191:22 move 42:12, 49:12,
--	---	--	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

246

<p>69:21, 77:7, 80:1, 82:6, 98:8, 100:12, 132:22, 135:20, 153:14, 161:4, 162:17, 165:18, 168:12, 174:20, 182:11 moveable 65:10, 66:22, 67:5, 67:16, 68:7, 68:18, 69:12, 98:13, 98:18, 98:19, 99:2, 99:3, 100:17, 101:1, 102:9, 103:5, 120:17, 136:11, 163:2, 163:6, 163:10, 165:16, 168:16, 168:20 moved 24:16, 35:18, 209:8 movement 65:22, 98:9, 99:8, 100:13, 135:20, 153:15 moves 28:6, 33:14, 77:17, 78:10, 78:14, 165:18, 167:12, 167:19, 167:20, 168:11, 168:13, 169:16, 169:19, 171:1, 171:2, 171:19, 171:20 moving 19:21, 20:14, 21:3, 21:5, 21:11, 22:1, 22:3, 22:8, 23:9, 23:12, 23:13, 23:16, 28:10, 59:4, 61:4, 66:5, 66:11, 67:3,</p>	<p>67:11, 67:20, 67:21, 68:2, 68:8, 68:19, 69:2, 69:5, 69:7, 69:10, 69:14, 69:17, 69:20, 77:21, 81:10, 81:15, 81:20, 82:16, 82:18, 97:14, 98:9, 98:12, 99:7, 100:14, 104:21, 119:1, 119:2, 119:4, 119:21, 126:13, 131:7, 132:1, 132:17, 135:21, 138:9, 153:6, 153:10, 153:15, 154:12, 156:3, 169:18, 180:14, 204:18, 204:21, 205:5, 205:15, 215:10, 215:15 mt 123:4, 147:14, 148:3, 170:17 mt1 163:21, 174:15, 202:17, 203:8 mtgrn 127:16, 127:20, 128:2, 133:18, 133:19, 134:11, 164:16, 164:19 much 58:17, 59:11, 61:11, 68:5, 96:10, 112:21, 182:17, 186:11, 189:4, 189:6, 189:8, 201:18, 201:22, 206:14 multipath 187:16, 189:19, 190:2, 190:12, 191:16, 192:1, 192:6, 192:7,</p>	<p>192:18, 192:20, 192:22, 193:5, 194:16, 194:22, 195:4, 195:15, 198:22 multipath-type 193:13 multiple 10:22, 11:3, 11:8, 27:3, 28:4, 43:13, 46:18, 48:4, 48:7, 49:1, 56:5, 56:7, 65:17, 98:6, 98:12, 100:1, 109:19, 112:10, 118:22, 121:3, 121:20, 122:6, 122:7, 126:21, 145:22, 146:9, 154:17, 177:7, 177:13, 177:19, 177:21, 178:3, 178:7, 179:12, 179:18, 179:22, 180:1, 180:4, 188:4, 188:6, 188:11, 188:16, 189:13, 189:16, 190:9, 193:10, 193:15, 193:17, 194:10, 195:8, 195:9, 199:1, 199:5, 199:6, 199:7, 208:21, 211:15, 211:18 must 139:7 mute 166:1, 166:4 <hr/>N<hr/>name 115:5, 165:15 narrow 167:22 natural 76:4, 83:8,</p>	<p>115:20, 116:1, 215:18 nature 80:3, 81:2, 189:20, 191:18, 206:15 nearest 13:14, 14:17, 16:17, 18:6, 18:9, 25:2 necessarily 107:14, 122:2, 156:22 necessary 38:18, 112:8, 151:17, 196:22, 197:20 need 9:2, 15:9, 22:8, 32:18, 32:22, 33:2, 34:9, 36:8, 37:21, 38:16, 44:2, 49:14, 52:1, 60:11, 67:1, 67:6, 67:16, 67:20, 71:11, 72:1, 75:12, 76:11, 89:14, 110:10, 110:11, 110:16, 110:21, 111:6, 112:4, 118:19, 120:14, 122:14, 129:16, 135:13, 136:15, 151:1, 151:6, 152:16, 157:1, 157:21, 160:16, 167:12, 172:20, 175:8, 183:22, 198:14, 200:13 needed 32:5, 137:7, 137:8, 193:22, 204:2 needing 24:5</p>
--	--	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

247

<p>needs 23:14, 32:19, 36:3, 54:15, 54:16, 58:20, 60:22, 61:1, 70:20, 75:3, 75:21, 105:19, 112:8, 116:2, 150:17, 152:5, 198:22 negate 183:1 netflix 213:1 network 12:9, 12:22, 16:2, 28:6, 28:12, 28:15, 30:12, 30:15, 30:21, 31:2, 31:3, 32:17, 32:19, 33:3, 33:7, 33:11, 56:17, 56:18, 56:19, 122:5, 123:5, 123:8, 123:10, 123:14, 123:15, 123:16, 124:1, 124:6, 124:10, 125:13, 125:15, 125:17, 125:22, 132:15, 139:9, 140:6, 140:8, 141:9, 141:21, 141:22, 142:2, 142:3, 145:18, 146:6, 146:14, 146:15, 147:9, 147:12, 148:4, 148:6, 150:9, 156:5, 157:5, 157:7, 157:11, 157:19, 158:11, 159:5, 159:11, 159:13, 159:22, 162:11, 166:8, 166:10, 166:11, 166:18,</p>	<p>166:21, 184:6, 184:10, 198:20, 198:21, 202:16, 203:16, 203:18, 203:19, 204:10, 204:11, 204:12, 208:10, 208:12, 208:19, 208:20, 209:10, 209:15, 209:21, 210:4, 210:5, 210:10, 210:12, 210:17, 210:20, 211:1, 211:3, 214:14 networks 56:22, 73:11, 126:22, 158:22, 160:6, 160:7 never 73:1 new 3:6, 28:6, 28:11, 28:13, 29:15, 31:21, 32:3, 32:4, 32:5, 33:19, 34:18, 35:17, 35:18, 42:8, 54:15, 54:16, 59:9, 60:21, 61:1, 61:5, 63:12, 70:20, 70:22, 71:3, 71:5, 72:12, 72:14, 72:17, 72:21, 72:22, 73:3, 73:12, 74:7, 74:10, 75:2, 75:4, 110:10, 182:17, 189:4, 189:6, 189:8 next 24:10, 57:2, 71:16, 120:6, 132:22, 153:7, 166:14, 166:20, 182:21, 196:13,</p>	<p>197:14, 208:8 noise 193:9, 194:19 none 211:19 nonexistent 186:19 nor 43:16, 61:7, 72:18, 89:8, 151:11, 154:8, 188:10, 198:21 normal 91:11, 173:22 notary 2:13, 218:1, 218:5, 219:6 notations 116:19 note 35:21, 77:4 noted 209:14 notes 8:3, 10:1, 39:18 nothing 148:20, 164:8, 213:21 notice 2:11, 9:22 novel 59:6, 61:6, 72:17, 72:21 november 219:3 now 12:1, 17:8, 18:12, 19:13, 20:9, 24:16, 24:20, 26:9, 30:1, 35:20, 36:13, 36:22, 37:5, 40:3, 40:6, 40:21, 41:2, 42:20, 51:6, 53:20, 55:15, 77:14,</p>	<p>91:22, 100:21, 101:4, 103:11, 109:22, 110:1, 110:15, 114:19, 115:1, 117:21, 130:9, 133:15, 150:4, 151:19, 155:4, 175:9, 175:12, 175:13, 176:22, 177:3, 187:6, 191:8, 195:20, 201:13, 208:16, 213:21 number 6:19, 9:12, 10:12, 45:5, 65:11, 66:2, 66:10, 66:16, 67:1, 67:10, 67:14, 67:15, 67:19, 68:1, 68:21, 69:15, 201:2 numbered 6:15 numerous 87:15, 87:16 nw 3:6 <hr/>O<hr/> object 114:1, 149:12, 152:19 objection 30:8, 38:12, 106:16, 152:7, 189:15 objectives 185:5, 187:3 obtained 146:3 obvious 8:2, 9:22, 90:3, 106:18, 107:7, 114:14, 168:12, 169:17 obviously 43:15, 51:22,</p>
--	--	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

248

<p>80:1, 81:14 occur 42:7, 63:1, 72:14, 183:4 occurred 218:18 occurs 142:16 off 7:14, 9:13, 36:21, 39:6, 52:6, 52:9, 52:13, 62:4, 64:16, 71:16, 73:8, 89:14, 96:19, 216:5 office 1:1, 218:19 offices 3:12 oh 20:6, 115:6 omit 81:20 once 25:21, 26:16, 27:8, 29:3, 41:21, 72:7, 74:10, 84:5, 155:13 one-word 60:7 ones 167:5, 167:18 only 27:15, 29:12, 29:14, 33:18, 41:17, 70:19, 75:1, 80:19, 82:17, 94:17, 96:22, 105:5, 105:12, 119:1, 127:18, 137:13, 159:19, 162:22, 164:14, 173:14, 177:5, 177:17, 187:19, 196:9, 201:6, 204:20,</p>	<p>209:6 onto 64:2 operate 110:12, 159:10 operates 53:6, 111:2 operating 11:16, 14:16, 30:21 operation 33:2, 54:2 operational 12:17 operations 56:16 operators 159:7 opine 114:7 opinion 13:11, 14:3, 24:12, 32:2, 40:13, 46:11, 49:18, 70:4, 73:16, 79:1, 85:3, 88:8, 91:21, 92:19, 97:21, 102:21, 103:13, 105:4, 131:4, 131:20, 156:8, 161:18, 163:13, 163:16, 177:12, 178:5, 178:7, 180:1, 194:13, 194:21, 197:19, 213:2, 215:4 opinions 103:17, 135:4 opportunity 90:21 opposite 133:7, 134:5, 150:15, 213:22 optimize 74:21 order 57:1, 110:11,</p>	<p>112:5, 145:7, 178:15 ordinary 75:18, 82:19, 107:8, 108:21, 112:7, 112:11, 113:20, 139:6, 139:16, 139:20, 146:12, 158:14, 185:8, 185:22, 186:6, 186:20, 190:19, 193:1, 196:5, 198:12, 200:12, 206:4, 207:7, 208:22, 209:5, 209:18, 215:9, 215:13 orient 49:15 original 14:13 originate 22:21, 179:17, 180:17 other 9:1, 15:10, 19:19, 20:13, 33:15, 46:7, 49:22, 50:14, 53:11, 53:22, 59:7, 62:20, 65:13, 69:19, 80:22, 81:5, 87:16, 91:8, 104:9, 107:1, 107:5, 108:1, 111:15, 112:1, 114:3, 115:6, 116:18, 120:14, 122:9, 122:11, 122:12, 125:8, 125:11, 128:15, 147:15, 152:18, 156:19, 160:6, 163:3, 169:11, 169:14, 171:9, 171:15, 172:18, 173:13, 175:8,</p>	<p>193:14, 209:9, 214:13 otherwise 76:5 our 6:20, 12:19, 48:10, 65:18, 70:15, 76:8, 79:14, 83:12, 83:13, 109:2, 138:21, 151:19, 178:19, 183:10, 206:18 ourselves 199:21 out 7:18, 24:3, 38:18, 45:16, 47:18, 63:18, 102:7, 103:2, 110:10, 111:14, 116:13, 140:19, 158:22, 174:21, 175:2, 175:21, 184:7, 184:18, 186:12, 187:5, 200:16, 202:1, 204:8, 215:2 outlined 92:18 outside 85:12, 85:15, 107:10, 107:13 oval 141:2, 143:13, 149:1 over 6:19, 18:4, 34:9, 84:5, 86:7, 94:4, 100:10, 127:15, 130:4, 133:4, 136:6, 143:1, 143:4, 143:7, 151:3, 160:10, 181:1, 212:19, 213:11 overall 51:4, 54:2,</p>
--	---	--	---

<p>68:5 overlap 62:2, 62:14 overlapping 63:4 overlooked 192:6 own 49:20, 84:5, 190:22 owner 1:9, 3:10</p> <hr/> <p style="text-align: center;">P</p> <hr/> <p>page 5:2, 5:7, 7:18, 8:12, 9:17, 10:5, 19:19, 20:7, 39:22, 61:4, 64:10, 64:12, 99:21, 103:10, 106:2, 108:11, 109:4, 127:2, 154:11, 164:12, 165:2, 165:6, 173:6 pages 1:21, 42:6, 164:11, 176:15 paging 190:16, 196:2 paid 31:3 pan-european 208:12 paper 64:8 paradigm 143:19, 194:7, 194:9, 198:18 paragraph's 13:18, 19:1 paragraphs 27:3, 50:2, 50:5, 70:13, 87:16, 87:21, 90:4, 91:5, 91:7, 104:1,</p>	<p>104:4, 104:9, 104:15, 184:1 paraphrase 27:16, 127:9 paraphrasing 197:4, 197:6, 207:10 parens 41:8 part 10:15, 11:7, 21:1, 21:14, 22:7, 24:17, 48:13, 57:22, 61:6, 61:7, 92:22, 98:4, 102:7, 103:2, 111:22, 127:3, 129:3, 141:1, 145:14, 147:4, 155:1, 157:11, 162:14, 164:13, 165:15, 189:16, 189:17, 190:6, 190:11, 190:14, 191:12, 191:14, 195:20, 195:22, 203:11, 210:9 partially 133:18, 134:17, 135:2 particular 9:2, 9:7, 9:17, 10:12, 10:17, 11:19, 20:12, 25:17, 29:19, 36:3, 43:9, 52:19, 55:4, 55:11, 64:18, 80:9, 85:17, 88:20, 104:8, 115:5, 115:15, 117:20, 122:21, 126:10, 137:21, 145:17, 147:4, 155:20, 203:1 particularly 19:15, 24:8,</p>	<p>44:7, 71:7 partly 134:10, 134:13, 146:4 parts 79:9, 98:10, 99:7, 126:22, 145:12, 189:17, 190:9, 191:10, 209:17, 211:3, 211:7, 211:12, 212:1, 212:8, 212:15, 213:14, 214:5, 214:9 party 218:15 passage 65:12, 65:21, 86:18, 143:6, 163:8, 209:11 passing 68:14 past 103:20, 181:16, 193:14 patents 50:1, 53:15, 53:22, 106:19, 107:1, 112:19, 113:6, 114:11, 181:17 path 127:5, 127:12, 127:16, 189:14, 198:7, 200:7 paths 202:16 pause 190:5, 190:8 per 157:22 percent 96:10, 96:11 perform 34:19, 54:15, 56:15, 62:5, 65:3, 67:17, 69:7, 69:13,</p>	<p>69:14, 75:22, 198:10, 200:10 performance 74:21 performed 24:22, 42:10, 67:20, 75:13, 122:14, 205:12 performing 12:5, 68:9, 108:9 performs 91:15, 98:20 person 33:6, 33:10, 82:19, 94:11, 108:20, 113:19, 185:8, 186:6, 193:1, 198:12, 200:12, 206:3, 207:7, 208:22, 209:17, 211:3, 215:9 person's 33:8 personal 57:15 petitioner 1:6, 3:2, 6:4, 101:12, 101:14, 102:11, 102:13, 102:20, 114:7, 132:17, 151:12, 162:21, 170:3, 172:17, 182:17 petitioner's 77:5, 101:7, 101:20 phone 12:8, 12:17, 22:9, 22:12, 23:15, 29:15, 30:11, 30:14, 30:18, 30:19, 30:20, 30:22, 31:1, 31:18, 32:17, 33:4, 33:6, 33:7,</p>
---	---	--	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

250

<p>33:9, 33:12, 33:14, 35:18, 41:10, 41:14, 56:9, 60:22, 61:3, 61:5, 61:13, 63:12, 94:12, 94:15, 99:2, 105:13, 155:22, 156:10, 157:1, 157:3, 157:5, 157:8, 157:9, 157:12, 157:22, 161:9, 161:12, 161:17, 162:3, 162:13, 162:15 phones 140:4, 140:7, 161:20, 210:14, 210:15, 210:17 phrase 11:18, 137:2, 159:14, 162:14, 187:7 physical 7:8, 7:22, 8:7, 9:9, 36:1, 63:17, 115:2, 116:13, 175:2, 175:21 pick 215:19 pieces 111:7, 111:14, 111:22, 112:4, 203:6 pilot 24:10, 74:17, 74:19, 96:21, 97:4 place 32:22, 113:17, 163:4, 169:20, 170:22 placed 132:1 places 87:15, 87:17</p>	<p>plain 139:6, 139:16, 139:19, 158:14 plane 21:12, 77:22 please 7:11, 8:3, 9:7, 9:11, 9:12, 36:1, 36:18, 39:2, 39:4, 40:5, 60:9, 64:1, 64:2, 88:22, 115:14, 116:21, 138:15, 160:17, 161:5, 162:18, 175:5, 176:2, 176:21 pllc 3:12 plug 112:1 plurality 43:18, 43:19, 46:13, 46:14, 69:18, 93:1, 93:2, 93:4, 93:5, 98:10, 99:7, 100:13, 100:14, 105:17, 105:20, 118:6, 118:7, 118:8, 120:15, 121:12, 122:6, 122:15, 130:22, 131:1, 131:10, 131:11, 131:12, 133:4, 134:6, 135:21, 136:5, 136:8, 136:9, 137:11, 145:19, 153:16, 177:6, 178:9, 178:13, 179:3, 179:4, 179:5, 179:10, 179:11, 180:3, 180:5, 180:8, 180:9, 180:10, 180:11, 180:16, 181:6,</p>	<p>181:10, 182:1, 182:8, 186:17, 188:12, 208:6 point 47:17, 48:9, 48:13, 50:16, 54:20, 62:18, 65:14, 74:18, 75:2, 76:4, 79:18, 83:8, 88:10, 88:21, 89:7, 89:8, 98:22, 99:13, 100:5, 100:20, 104:8, 111:9, 112:18, 120:8, 122:18, 138:9, 143:11, 147:3, 155:3, 168:8, 171:21, 188:1, 196:8, 196:12, 196:16, 196:17, 206:3, 215:18, 215:19 pointed 54:21, 99:2, 101:8, 140:19, 187:5 pointing 13:2, 99:4, 100:22, 178:6 points 57:1, 73:12, 89:4, 90:19, 140:21, 184:17, 185:3 poorly 60:4 port 122:17, 179:15, 180:11, 205:19 portable 57:17 portion 49:14, 49:15, 52:19, 65:2, 71:9, 75:6, 75:7, 84:21,</p>	<p>89:10, 91:21, 92:10, 99:14, 99:18, 119:10, 125:11, 125:18, 126:10, 133:11, 134:14, 134:15, 134:16, 140:14, 147:22, 148:10, 158:1, 168:18, 180:21, 181:2, 209:13 portions 21:8, 185:10 ports 43:19, 46:14, 93:2, 93:6, 100:15, 100:19, 118:8, 131:1, 131:6, 131:13, 133:4, 134:7, 135:22, 136:1, 136:10, 137:12, 137:18, 153:16, 179:5, 179:11, 180:9, 180:12 posa 108:20, 112:5 posita 49:18, 70:4, 182:14, 196:19, 197:1 position 71:20, 91:18, 101:7, 102:12, 102:14, 103:13, 106:5, 106:8, 108:15, 108:18, 108:19, 114:19, 129:8, 130:9, 151:14, 174:11, 185:8 possible 29:15, 34:18, 57:2, 114:5, 134:2, 146:1, 186:4, 186:11, 186:14, 187:22, 188:2, 192:16,</p>
--	---	---	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

251

<p>195:3, 214:13 possibly 172:19, 194:22 power 110:19, 165:9, 168:7 pre-determined 74:19, 75:16 precede 100:2 preceded 97:11 precedent 149:4 precise 145:1 preclude 149:5 predetermined 28:7, 146:2, 146:11 prefer 145:10 preferably 205:11 preferred 15:11, 15:14, 16:6, 16:9, 16:12, 16:14, 17:11, 17:14, 17:16, 17:19, 18:1, 18:14, 19:2, 19:9, 22:13, 23:18, 31:8, 45:19, 56:4, 115:4 premise 121:5, 211:10 premises 123:12 presence 144:18, 144:19 present 4:3, 25:22, 26:17, 27:9, 29:4, 41:22, 44:16, 53:5, 54:7, 54:11,</p>	<p>56:8, 72:8, 172:14, 173:15, 180:22, 181:3, 207:19, 208:4, 208:9, 218:19 presented 117:15 pretty 144:17, 145:1, 168:11, 168:21, 169:17, 171:17 prevent 107:14 prevents 164:8 previous 6:21, 12:20, 37:3, 60:14, 113:9, 138:21, 139:5, 144:16, 148:10, 170:7, 183:22, 188:22, 194:12, 195:21, 196:18, 199:20, 206:17, 207:13 previously 18:17, 97:12, 151:11, 151:20, 168:2, 215:7 primarily 93:22, 95:10, 95:15, 96:5, 96:7 primary 44:19, 65:9, 197:2 prior 205:13, 206:11, 207:1, 207:16 private 75:16 probable 186:6 probably 15:9, 27:2, 41:5, 83:8, 89:20, 106:17, 155:11, 158:8,</p>	<p>173:12 problem 20:10, 52:12, 60:10, 62:10, 62:21, 73:9, 73:10, 73:15, 157:9, 193:20, 199:10, 212:21 problems 192:13, 192:16, 193:11, 195:11, 195:14 procedure 29:22, 65:4, 70:17, 70:19, 71:21, 73:12, 75:10, 75:13 procedures 6:20 proceed 13:19, 45:2, 202:13 proceeding 55:7 proceeds 207:3, 208:19 process 6:11, 13:12, 23:6, 24:14, 24:16, 25:18, 26:1, 26:4, 26:6, 26:10, 26:11, 26:14, 26:18, 27:10, 27:12, 28:19, 29:6, 29:8, 29:11, 29:21, 30:6, 30:7, 30:13, 30:17, 30:18, 31:5, 31:6, 31:12, 33:18, 33:20, 34:15, 34:17, 34:20, 41:17, 42:2, 42:4, 43:13, 58:11, 58:12, 72:9, 72:12, 73:2,</p>	<p>73:18, 73:22, 74:2, 74:3, 74:7, 91:11, 148:16, 151:16 processing 92:13, 192:4, 204:1, 205:12 processor 84:12, 85:1, 85:4, 88:5, 88:9, 88:20, 89:6, 89:13, 89:17, 89:18, 89:19, 90:1, 90:7, 90:8, 90:9, 90:10, 90:11, 90:16, 90:18, 90:20, 91:14, 92:1, 92:6, 92:11, 92:19, 95:7, 98:14, 98:19, 105:19, 205:2, 205:6, 205:8 professional 2:12, 194:13, 194:21 programmed 205:11 prohibitive 98:1 pronounce 115:11 pronouncing 115:4, 115:8 proof 79:15 properly 11:16, 189:7 proposed 182:22, 185:9, 185:12 proposes 182:17 protocol 156:2, 156:4, 202:10 proven 79:2, 79:13</p>
---	--	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

252

<p>provide 6:13, 38:20, 43:17, 46:12, 69:17, 84:13, 89:9, 91:2, 91:14, 118:5, 119:12, 123:3, 145:11, 145:12, 166:16, 168:5, 169:7, 170:16, 188:1, 188:15, 193:15, 206:4, 210:2 provided 79:9, 91:19, 102:21, 102:22, 156:20, 187:20, 199:20, 203:5, 206:7 provides 45:14, 128:17, 140:10, 199:7 providing 66:14, 93:10, 206:14 proving 78:20 proximity 189:21, 191:19 public 2:13, 218:1, 218:5, 219:6 pull 7:11, 9:6, 9:11, 9:16, 10:9, 40:4, 64:1, 64:15, 115:15, 116:13, 116:21, 117:19, 175:2, 175:5, 175:21, 176:2, 176:20 pulling 63:18 purported 120:17 purpose 41:12, 41:15</p>	<p>purposes 65:18, 151:19, 197:14, 199:13 pursuant 2:11 push 186:14 pushes 203:17 put 89:10, 92:4, 103:3, 110:2, 111:15, 112:17, 113:15, 114:20, 124:18, 128:14, 175:1, 179:16 puts 195:11, 203:19 putting 88:21, 186:21, 187:11, 192:21</p> <hr/> <p>Q</p> <hr/> <p>qualcomm 51:1, 53:1 quality 74:17, 93:3, 93:8, 93:12, 93:16, 93:22, 95:8, 95:15, 96:2, 97:2, 97:6, 151:6 quarter 116:5 question 8:17, 15:15, 17:3, 18:7, 20:11, 21:16, 21:18, 30:4, 34:8, 35:14, 36:7, 36:9, 37:4, 38:14, 38:17, 40:8, 52:17, 57:11, 57:12, 60:3, 60:8, 60:14, 63:3, 65:15, 67:8, 67:13,</p>	<p>68:18, 73:19, 80:15, 81:4, 82:12, 87:9, 88:1, 90:5, 101:19, 106:12, 108:20, 112:2, 113:19, 114:3, 118:18, 118:21, 121:4, 121:5, 121:6, 121:8, 121:16, 121:21, 124:3, 124:21, 125:1, 126:16, 136:18, 145:4, 147:3, 151:13, 151:20, 151:22, 152:3, 152:9, 152:14, 152:21, 152:22, 153:9, 155:14, 155:19, 156:12, 165:20, 166:5, 167:22, 168:1, 170:7, 170:12, 178:1, 178:15, 185:13, 185:15, 186:1, 188:20, 194:13, 197:9, 199:18, 200:9, 211:20, 211:21, 212:6, 213:7, 214:1, 214:8, 215:2 questioning 89:2, 178:19, 191:12 questions 29:17, 36:12, 36:14, 37:20, 38:7, 84:7, 88:11, 100:1, 125:8, 142:12, 150:22, 151:4, 151:6, 151:9, 155:16, 186:3, 197:15, 199:11, 199:16, 213:5 quick 35:21, 76:4,</p>	<p>76:7, 173:7 quickly 9:21, 103:22, 104:4, 176:9 quite 83:13, 145:9, 188:19 quote 28:16, 77:15, 77:16, 78:9, 79:10, 86:1, 86:18, 133:10, 134:8, 142:20, 162:3, 162:4, 165:2, 165:5, 184:11, 184:15 quoted 78:4 quotes 85:21, 86:15, 101:17, 104:6, 155:16, 165:1</p> <hr/> <p>R</p> <hr/> <p>radiate 47:5, 47:7 radio 17:9, 17:10, 43:19, 46:14, 93:2, 93:6, 95:9, 95:10, 95:16, 96:5, 96:8, 98:10, 100:15, 100:19, 118:8, 122:17, 123:8, 123:13, 123:14, 124:1, 124:5, 124:10, 125:16, 125:17, 125:22, 126:1, 126:7, 131:1, 131:6, 131:13, 131:17, 133:19, 134:7, 134:11, 134:13, 134:14, 135:21, 136:1, 136:10, 137:10, 137:11, 137:13,</p>
--	---	--	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

253

<p>137:17, 141:21, 141:22, 142:2, 148:4, 148:6, 149:17, 153:16, 158:13, 158:17, 158:19, 159:1, 159:3, 159:8, 159:9, 159:15, 159:19, 159:20, 160:2, 160:3, 166:10, 166:11, 166:21, 169:6, 179:5, 179:11, 179:15, 180:9, 180:11, 180:12, 198:14, 200:13, 202:15, 202:16, 205:1, 205:7, 205:9, 205:10, 205:18, 205:19 radiophone 57:15, 72:8 radiotelephone 11:10, 11:15, 11:21, 12:15, 12:16, 13:5, 13:14, 14:2, 14:17, 14:19, 14:20, 15:1, 15:18, 16:16, 16:18, 16:19, 18:1, 18:3, 18:6, 18:9, 23:2, 23:20, 23:22, 24:6, 25:2, 25:7, 25:13, 25:14, 26:1, 26:17, 27:9, 29:5, 32:8, 32:15, 42:1, 45:6, 47:5, 47:8, 50:21, 51:4, 52:20, 53:7, 53:20, 55:13, 56:6, 56:11, 71:12, 71:14, 71:15, 73:8</p>	<p>radiotelephones 11:1, 11:4, 11:8, 11:14, 12:22, 16:2, 16:22, 17:7, 17:22, 22:15, 22:18, 24:9, 24:13, 48:18, 49:7, 58:10, 74:15, 86:21, 92:12 rail 153:7, 153:11, 153:21, 154:13 raising 115:21 rake 193:14 ran 202:16 rast 4:4 rate 59:10, 61:4, 77:8, 77:18, 78:11, 80:2, 93:14, 93:18, 94:3, 94:9, 94:18, 94:20, 95:21, 96:1, 96:9, 96:12 rather 52:3, 174:12 ratio 96:6 re-ask 60:2 reaches 25:21, 26:16, 27:8, 29:4, 41:21, 54:7, 71:16, 72:7 reaching 54:11 read 21:14, 22:11, 25:16, 26:15, 27:12, 28:16,</p>	<p>29:1, 29:19, 49:13, 53:11, 53:16, 53:19, 53:21, 55:22, 56:1, 56:11, 58:16, 60:12, 65:5, 74:11, 75:8, 78:4, 82:20, 90:7, 90:22, 95:20, 119:11, 125:19, 133:11, 134:9, 135:18, 137:9, 142:20, 143:6, 145:8, 148:10, 152:12, 155:10, 155:12, 167:8, 171:15, 181:18, 197:11, 199:19, 210:18, 212:5, 212:14, 215:7, 217:3 reading 18:14, 20:2, 20:3, 20:6, 27:17, 41:6, 41:20, 46:9, 47:2, 74:6, 75:19, 79:8, 82:12, 101:22, 111:10, 136:20, 138:11, 145:14, 149:15, 152:11, 165:3, 167:6, 167:7, 196:2, 197:6, 197:10, 205:3, 214:15 reads 19:19, 52:20, 62:1, 77:4, 77:17, 84:11, 86:19, 95:6, 118:3, 120:10, 130:14, 133:2, 133:16, 182:21 ready 39:10, 155:18, 160:22</p>	<p>reality 62:17 realize 62:3 realized 29:2, 144:5 realizes 73:9 really 136:19, 193:8, 194:18, 214:1 realtime 2:13 reason 20:19, 34:3, 34:4, 34:10, 34:13, 37:6, 105:5, 106:18, 109:8, 120:15, 121:12, 122:8, 135:5, 139:22, 143:16, 158:5 reasonable 76:19, 171:18, 185:21 reasonableness 114:8 reasoning 104:10 reasons 37:12, 37:13, 37:18, 38:4, 40:10, 70:3, 70:8, 103:20, 105:9, 107:3, 107:6, 107:21, 109:16, 111:20, 112:10, 112:15, 114:14, 154:19, 183:17, 183:19, 185:11, 187:7, 208:21 rebuttal 88:6, 88:7, 88:12, 102:22, 103:8 recall 48:6, 111:4,</p>
--	---	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

254

<p>140:4, 140:6, 192:19, 214:10 recalling 146:21 receive 11:17, 12:17, 22:9, 23:21, 24:5, 43:12, 43:18, 46:13, 47:5, 47:7, 47:8, 47:13, 48:22, 63:12, 131:10, 136:4, 136:7, 177:19, 179:3, 188:5, 194:3 received 11:11, 48:16, 49:5, 49:9, 71:13, 74:13, 75:3, 95:8, 96:19, 128:13, 136:11, 177:22, 178:8, 188:6, 188:9, 193:18, 194:5 receiver 43:11, 43:15, 43:18, 46:13, 109:18, 131:10, 136:4, 136:7, 177:14, 179:2, 181:4, 181:8, 182:15, 183:14, 185:16, 193:13, 193:14, 193:18, 199:9, 200:16, 200:19, 200:22, 204:6 receivers 46:22, 47:1, 109:19, 192:18 receives 177:20, 178:3, 199:8, 204:10 receiving 21:5, 22:3, 23:12, 94:12,</p>	<p>130:21, 177:13, 177:17, 192:13, 193:12, 194:7, 194:8 reception 195:11, 199:4 recess 43:3, 83:18, 116:9, 160:19, 175:17 recite 134:6 recited 92:1, 157:15, 178:9 recites 147:22 recognizing 72:21 record 6:18, 7:14, 9:13, 17:10, 35:9, 36:2, 36:5, 36:9, 36:19, 39:6, 42:18, 52:2, 52:6, 52:10, 52:13, 52:16, 75:8, 87:13, 87:19, 99:13, 100:6, 216:5, 218:11 record's 16:7 rectangle 45:15 redrawn 150:6 reduce 65:11 reduced 66:3, 66:10, 67:11, 67:21, 68:2, 68:22, 74:17 reducing 66:15 redundant 14:4</p>	<p>refer 13:21, 15:10, 16:6, 16:7, 25:11, 54:4, 55:15, 128:5 reference 8:11, 10:12, 10:17, 25:18, 35:6, 35:9, 37:22, 38:21, 39:1, 39:3, 40:5, 40:7, 50:6, 50:9, 54:5, 55:1, 55:12, 57:6, 59:7, 60:20, 73:21, 78:21, 97:3, 115:3, 115:5, 115:7, 115:13, 115:15, 116:14, 122:21, 175:3, 175:6, 197:2, 208:16, 210:3 referenced 34:14, 35:13, 61:8, 85:9 references 59:17, 60:16, 74:3, 111:6, 112:3, 112:9, 114:15, 129:5, 173:13, 175:10 referred 28:20, 31:11, 31:15, 35:17, 35:20, 40:21, 53:21, 54:4, 56:19, 66:15, 69:6, 98:11, 99:17, 103:4, 141:2, 193:14, 203:12 referring 13:7, 14:21, 15:4, 16:17, 17:11, 17:19, 19:1, 21:8,</p>	<p>24:17, 24:19, 25:10, 26:3, 29:3, 29:20, 29:21, 30:6, 32:10, 33:13, 36:5, 38:15, 45:3, 50:11, 50:17, 54:1, 54:9, 54:12, 56:21, 59:3, 67:14, 67:15, 75:17, 83:1, 84:17, 85:9, 85:13, 85:15, 85:16, 86:9, 89:18, 89:21, 99:16, 100:21, 115:7, 115:9, 115:10, 132:11, 145:6, 149:17, 164:3, 166:15, 172:8, 178:12, 178:17, 178:20, 178:21, 197:15, 206:20, 209:4, 209:22, 210:4, 210:11, 214:8, 214:12 refers 15:13, 16:15, 18:14, 51:3, 58:9, 80:10, 82:14, 86:1, 87:14, 99:19, 109:20, 127:15, 128:5, 129:17, 129:19, 144:6, 156:16, 184:10, 190:2, 210:19 refresh 91:6 refute 139:12 regard 32:7, 41:9, 53:19, 70:20, 71:4, 87:22, 88:2, 98:5,</p>
--	---	--	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

255

171:10, 172:5, 173:15 regarding 6:13, 8:19, 36:7, 36:14, 37:21, 38:8, 81:3, 89:16, 125:6, 153:18, 167:13, 171:16, 178:14, 184:1, 184:2, 210:15 regardless 33:4, 106:10, 120:10, 142:15, 171:5 regenerate 194:4 region 122:12 register 16:1, 16:22, 17:6, 17:21, 24:11, 30:22, 31:2, 32:18, 41:18, 86:4, 86:21, 139:7, 140:5, 157:3, 157:6, 157:18, 159:12 registered 2:12, 28:8, 31:13, 31:18 registering 13:13, 15:1, 16:16, 16:18, 18:8, 25:10, 29:10, 35:17, 86:4, 86:21, 156:4, 159:21 registers 12:8, 12:21, 14:2, 14:17, 14:19, 18:5, 25:2, 25:6, 28:5, 30:14, 32:16 registration 20:21, 20:22,	21:4, 22:2, 22:6, 22:9, 22:13, 22:15, 22:17, 22:19, 22:21, 23:1, 23:5, 23:7, 23:11, 23:13, 23:14, 23:20, 23:21, 24:5, 24:14, 24:16, 24:21, 26:6, 26:10, 28:1, 29:20, 30:6, 30:13, 30:16, 30:17, 31:4, 31:5, 31:6, 31:13, 31:22, 32:4, 34:5, 34:12, 34:20, 34:22, 35:5, 37:8, 37:14, 38:5, 40:11, 40:15, 40:16, 40:20, 41:7, 70:9 registration's 24:21 reiterated 70:15 reject 31:4, 187:1 related 55:19 relates 147:8 relation 6:14 relative 98:9, 99:7, 100:14, 135:21, 153:15, 201:13, 201:20 relayed 23:15 relays 11:9 relevant 27:4	remainder 98:21 remaining 129:3 remarks 103:9 remember 15:14, 66:18, 145:10 remembering 57:22 remote 6:20, 8:5, 164:15, 167:7 remove 35:19, 36:1 removed 201:19 reorient 199:21 repeat 20:10, 42:1, 52:17, 60:11 repeated 48:17, 49:7, 74:14 repeater 10:18, 10:20, 10:22, 11:2, 11:8, 11:12, 11:20, 12:5, 12:6, 12:21, 13:5, 13:9, 13:13, 13:22, 14:14, 14:16, 14:22, 15:19, 15:22, 16:16, 16:18, 16:21, 17:6, 17:9, 17:10, 17:17, 17:20, 17:21, 18:5, 18:8, 18:15, 19:2, 19:20, 20:13, 20:19, 21:10, 21:22, 22:14, 22:22, 23:5, 23:18, 25:1,	25:5, 25:9, 31:8, 32:16, 43:12, 44:21, 45:15, 46:3, 128:6, 128:8, 128:14, 128:17, 128:19, 129:19, 129:20, 130:4, 130:5, 131:21, 132:6, 132:8, 132:9, 132:21, 192:11, 192:14, 192:16, 194:2, 194:9, 195:12, 199:8 repeater-type 202:3 repeats 192:17, 202:3 rephrase 8:17, 11:6, 80:7, 102:12, 124:3, 139:13, 168:17 replace 161:9, 161:16, 162:2 replaced 13:5, 13:16, 14:1, 15:19, 25:5, 44:21 report 85:6, 85:16, 88:12, 140:3, 164:12 reported 1:22 reporter 2:12, 2:13, 51:12, 51:16, 166:1, 218:1, 218:4 represent 88:17 representation 204:18, 205:5 represented 172:19, 218:15
---	--	---	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

256

<p>representing 164:2, 174:8</p> <p>request 22:9, 22:10, 23:14, 23:21, 24:5, 191:3</p> <p>requests 22:19, 22:21</p> <p>require 65:3, 131:5, 134:5, 135:11, 135:16, 153:10, 155:21, 156:9, 182:17, 183:6, 184:13</p> <p>required 43:11, 62:4, 74:18, 75:15, 75:22, 90:20, 96:22, 97:14, 97:16, 97:18, 101:2, 104:21, 105:1, 105:2, 105:11, 105:16, 105:18, 118:4, 118:6, 119:2, 119:12, 120:2, 120:17, 120:19, 121:14, 130:21, 137:3, 146:2, 154:4, 163:6, 177:7, 186:17, 188:13, 188:17, 189:6, 192:14, 199:8, 206:10</p> <p>requirement 24:2, 24:4, 90:11, 130:20, 131:15, 132:16</p> <p>requirements 24:1, 65:6, 154:1, 187:19, 187:20, 187:21</p> <p>requires 108:4, 119:7, 133:6, 138:6, 138:11, 150:13, 154:6, 179:2,</p>	<p>205:16</p> <p>requiring 150:5</p> <p>reside 130:17</p> <p>resources 92:14</p> <p>respect 91:18, 108:14, 172:14</p> <p>respective 159:13</p> <p>respectively 123:16, 205:8</p> <p>responded 102:4</p> <p>response 29:19</p> <p>rest 147:1</p> <p>restate 60:5</p> <p>restrict 83:2, 215:11</p> <p>result 23:1, 173:16</p> <p>resulting 189:12</p> <p>results 145:16</p> <p>return 83:21, 91:20</p> <p>reverse 170:12</p> <p>review 55:4, 151:7</p> <p>reviewing 140:8, 146:22</p> <p>rf 177:5, 177:18, 177:20, 178:7</p> <p>rhoades 3:18, 218:19</p> <p>richardson 3:3, 5:3, 6:5, 7:10, 7:17, 8:6, 9:6, 9:10, 9:16, 10:9, 35:22,</p>	<p>36:17, 37:1, 37:2, 39:2, 39:13, 40:4, 42:14, 42:17, 42:22, 43:5, 51:8, 51:20, 52:5, 52:8, 52:15, 63:22, 64:4, 64:15, 76:13, 76:18, 76:20, 83:7, 83:14, 83:17, 83:20, 115:14, 115:18, 116:1, 116:6, 116:11, 116:20, 117:4, 117:10, 117:19, 160:9, 160:14, 160:18, 160:21, 166:3, 175:4, 175:11, 175:16, 175:19, 176:1, 176:6, 176:20, 213:3, 215:17, 215:22, 216:4</p> <p>right 19:14, 28:18, 37:3, 43:2, 44:3, 50:11, 50:15, 51:11, 52:4, 63:5, 74:2, 80:12, 83:15, 100:3, 100:9, 110:5, 112:2, 116:6, 129:17, 130:13, 145:11, 151:19, 160:9, 160:22, 161:4, 177:3, 182:13, 197:18, 211:1, 213:13, 213:16, 213:22, 215:22, 216:2</p> <p>right-hand 46:17, 140:18, 143:7</p> <p>rip 174:21</p>	<p>ripped 110:10</p> <p>rl 212:12</p> <p>rn 125:13, 166:8</p> <p>roadway 80:4, 80:11, 80:18, 81:2, 81:10, 81:15, 81:21, 82:2, 82:16, 82:18, 83:3, 83:5, 153:8, 153:18, 153:21, 154:4, 154:6, 154:7, 154:20, 154:21, 155:1</p> <p>roadways 154:12</p> <p>roaming 119:19, 119:20, 120:2, 126:6, 127:6, 127:12, 127:13, 127:17, 127:19, 128:2, 128:7, 128:18, 129:1, 130:3, 132:8, 132:19, 133:16, 141:18, 163:2, 163:17, 164:1, 164:6, 164:9, 164:21, 165:14, 165:15, 165:18, 167:4, 167:11, 167:13, 167:15, 167:16, 167:20, 168:11, 168:13, 169:2, 169:14, 169:15, 170:6, 170:15, 170:22, 171:1, 171:6, 171:16, 171:19, 172:3, 172:19, 183:2, 183:5, 187:9, 192:8, 192:9, 193:3, 194:1,</p>
--	---	---	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

257

195:1, 195:5, 197:1, 197:21, 198:2, 200:1, 201:3, 201:6, 201:10, 202:1 rockwall 3:14 rolling 184:7 route 11:20, 21:2, 21:22, 23:8, 204:11 row 139:2, 156:21 rpr 1:22 rrs 119:20, 130:15, 133:3, 163:3, 163:18 rs 123:2, 123:17, 123:22, 124:5, 140:18, 147:14, 163:4, 163:8, 166:13, 166:15, 167:2, 167:7, 168:15, 168:19, 211:22, 212:7, 212:10, 212:11, 214:5 rs1 163:14, 164:8, 164:14, 165:12, 165:22, 167:18, 172:14, 173:18 rs1-rs3 173:18 rs1-rs6 165:7, 202:20 rs2 163:22, 164:5, 164:19, 164:20, 170:5, 172:9, 172:12, 172:13, 173:4, 174:8, 174:15, 174:20	rs3 145:21, 164:8 rs4 164:8 rs5 173:18 rs6 163:14, 164:14, 165:12, 165:22, 167:18 rules 6:19 run 175:15 running 212:20 rx 123:2 ryan 3:3, 39:9, 51:7, 51:19, 52:2, 60:2, 76:7, 76:14, 83:13, 115:17, 166:1, 175:7, 212:18 <hr/> s <hr/> said 14:8, 15:5, 25:21, 27:11, 34:21, 41:7, 51:10, 51:14, 57:10, 67:14, 132:18, 148:2, 148:3, 150:20, 158:7, 179:18, 179:21, 195:7, 196:2, 199:4, 208:15, 211:18, 214:11 same 9:20, 10:7, 14:18, 22:16, 40:1, 62:21, 66:1, 66:11, 66:12, 67:4, 67:12, 67:22,	68:6, 68:20, 69:6, 69:9, 69:15, 87:22, 100:5, 103:10, 108:11, 113:2, 114:11, 114:12, 117:15, 117:17, 125:12, 142:14, 151:20, 154:11, 156:19, 162:5, 169:2, 171:4, 178:3, 179:13, 179:22, 180:2, 180:4, 184:15, 193:16, 193:17, 206:4, 206:5, 206:6, 212:20, 215:21, 217:4 sanford 3:17, 76:8 satellite 210:12, 210:13, 210:16, 214:13 satellite-type 210:10 satisfied 149:8 say 17:10, 24:3, 31:19, 36:8, 36:10, 37:12, 41:5, 49:3, 59:16, 60:15, 65:8, 68:12, 71:22, 75:14, 79:21, 89:22, 92:3, 92:21, 93:15, 93:21, 101:18, 108:6, 124:8, 126:3, 134:22, 137:3, 137:15, 152:9, 152:10, 157:11, 158:6, 158:8, 168:14, 171:17, 171:18, 182:3, 182:4, 186:22, 197:7, 205:1,	207:12, 208:17, 208:19 saying 17:5, 30:19, 38:14, 51:17, 56:14, 60:4, 82:5, 92:1, 101:21, 103:1, 108:5, 111:15, 123:1, 123:21, 124:4, 134:12, 141:11, 144:8, 146:8, 154:21, 158:10, 161:15, 161:21, 161:22, 162:12, 171:10, 181:14, 187:18, 190:9, 195:15, 195:16, 196:8, 198:17, 200:4, 206:9, 211:2 says 13:12, 15:18, 17:15, 17:17, 18:2, 23:8, 24:22, 26:16, 27:8, 28:22, 32:7, 33:17, 34:15, 44:14, 44:17, 45:1, 45:3, 45:8, 50:20, 55:14, 56:3, 58:10, 70:12, 75:15, 78:9, 79:14, 98:14, 103:7, 110:2, 119:11, 132:12, 134:1, 134:3, 134:10, 134:17, 134:22, 148:21, 162:5, 162:8, 165:7, 168:4, 169:6, 169:13, 173:4, 173:14, 180:22, 181:12, 181:20, 182:2, 182:5, 187:8, 197:22,
--	---	--	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

258

<p>205:2, 206:3, 211:17, 212:15 scan 173:7 scanning 29:15, 57:9, 165:1, 173:6, 173:12 scenario 62:9, 68:7, 69:11, 132:2, 133:6, 134:5 scenarios 69:3 screen 7:11, 9:7, 9:12, 9:18, 10:6, 10:10, 39:3, 39:15, 40:1, 40:5, 64:2, 64:12, 64:16, 115:15, 116:22, 117:16, 175:5, 176:2, 176:17 se 157:22 search 24:10, 34:17, 55:3, 61:1, 96:21, 174:5 searcher 109:17 searching 54:16, 58:21, 97:3 seat 33:9 second 12:4, 52:6, 52:10, 62:5, 76:11, 86:1, 86:18, 89:8, 113:12, 113:17, 120:9, 133:2, 147:1, 155:8, 162:4, 179:17, 187:12, 190:14,</p>	<p>195:20, 195:22, 196:8, 196:17, 203:11, 204:14 section 27:1, 74:11, 89:16, 161:10, 210:14 sections 125:5 see 9:21, 36:8, 37:4, 37:21, 43:20, 45:3, 46:17, 48:14, 50:3, 51:21, 52:10, 55:18, 57:10, 65:6, 67:6, 71:18, 76:8, 77:11, 78:1, 78:2, 80:13, 82:2, 83:15, 84:14, 84:22, 85:2, 85:7, 85:8, 85:17, 86:6, 87:1, 92:15, 95:12, 97:19, 100:5, 109:14, 110:4, 116:17, 118:9, 118:11, 120:20, 123:19, 125:18, 131:2, 132:16, 133:8, 133:13, 135:12, 140:10, 140:22, 142:5, 143:14, 147:17, 148:7, 148:8, 148:18, 151:17, 153:18, 153:20, 154:3, 154:5, 154:19, 156:6, 156:15, 161:13, 161:15, 163:11, 168:18, 172:21, 177:10, 183:7, 190:17, 191:4, 196:4, 197:3, 202:13,</p>	<p>202:21, 208:13, 209:19, 211:6, 211:8, 213:4 seeing 88:6, 109:15 seemed 144:22 seems 87:7, 115:20 selector 46:18, 46:21, 47:3, 47:12, 48:22, 109:20, 110:13, 110:17 selling 159:7, 159:8 semicircle 45:16 send 193:16, 204:8 sending 28:12, 177:5, 177:6 sends 199:9, 202:4 sense 63:2, 121:10, 155:11 sentence 13:11, 21:1, 21:2, 25:16, 26:15, 29:3, 29:19, 30:5, 51:3, 61:22, 77:3, 79:13, 79:14, 79:15, 79:20, 79:21, 80:10, 84:10, 85:17, 85:18, 89:2, 91:1, 91:12, 97:11, 118:3, 120:9, 130:14, 136:6, 155:8, 166:14, 166:20, 170:10, 171:8, 171:14, 177:3, 178:21, 182:2, 182:21,</p>	<p>184:12, 197:12, 197:15, 197:16, 208:8, 214:15, 214:22 sentences 171:9, 171:15 separate 89:3, 99:9, 99:10, 185:17, 191:11 separated 182:16, 183:15, 185:17, 187:13, 189:10 service 10:22 served 68:12 servicing 11:7 serving 30:16, 33:8, 120:11 session 70:15 set 7:2, 54:13, 74:21, 139:10, 199:13, 218:8, 219:1 several 29:17, 59:17, 60:16, 188:20 shapes 62:17 shared 205:13, 205:16 she 51:21, 51:22 sheet 217:7 shift 116:2 shoot 175:14 short 22:20, 84:11, 89:5, 89:22,</p>
--	--	---	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

259

<p>92:5, 128:18, 145:7, 175:8 shorthand 218:1 should 7:8, 12:17, 41:6, 66:8, 81:6, 89:20, 138:19, 152:2, 154:21, 164:22 show 32:13, 46:2, 85:12, 106:1, 109:4, 165:22, 190:2 showing 43:17, 45:18, 46:13, 62:14, 104:16, 164:19 shown 7:19, 43:14, 87:21, 102:6, 105:17, 107:22, 109:10, 112:12, 127:11, 127:20, 152:5, 153:12, 154:14, 163:15, 173:18, 174:11, 174:16, 211:12, 211:14, 212:1, 212:7, 215:5 shows 44:14, 45:15, 46:1, 150:15, 154:11, 164:16 side 35:21, 36:21, 46:17, 140:14, 140:18, 142:19, 143:5, 143:7 signal 11:11, 11:17, 12:14, 13:5, 15:18, 24:10, 42:8, 62:5, 63:12, 69:18, 70:21, 74:17, 74:19, 75:3,</p>	<p>75:16, 75:18, 93:2, 93:3, 93:8, 93:12, 93:13, 93:14, 93:15, 93:16, 93:18, 93:20, 93:22, 94:1, 94:3, 94:6, 94:8, 94:10, 94:12, 94:13, 94:14, 94:17, 94:19, 95:7, 95:10, 95:15, 95:16, 96:1, 96:2, 96:5, 96:8, 96:11, 96:19, 96:21, 97:2, 97:4, 120:16, 121:13, 137:10, 177:18, 177:21, 177:22, 178:4, 179:22, 180:2, 180:4, 188:10, 188:12, 192:4, 192:10, 192:12, 192:13, 192:16, 192:17, 193:11, 193:12, 193:16, 193:17, 194:3, 194:4, 194:8, 195:8, 195:11, 198:7, 198:8, 199:3, 199:4, 199:9, 200:7, 200:8, 202:19, 203:3, 203:12, 203:14, 204:3, 204:9 signal's 94:7 signaling 92:12 signals 11:9, 43:13, 43:18, 46:14, 47:5, 47:9, 47:13, 48:15, 49:1, 49:4,</p>	<p>49:9, 74:12, 93:5, 105:21, 118:6, 118:7, 122:17, 130:22, 131:11, 131:16, 131:18, 136:5, 136:8, 136:9, 136:10, 177:5, 177:7, 177:13, 177:20, 177:21, 178:7, 178:9, 178:14, 179:3, 179:4, 179:10, 179:13, 179:17, 180:3, 180:5, 180:8, 180:10, 180:16, 182:4, 184:9, 188:5, 188:8, 188:9, 188:12, 194:7, 198:3, 198:5, 199:1, 199:7, 200:2, 200:5, 202:4, 204:12 signature 8:13, 217:10 signature-pykwo 219:4 signed 217:7 significant 102:19 significantly 69:8, 70:6, 111:20, 113:4, 113:5 similar 7:20, 53:6, 65:12, 65:21, 120:8, 138:21, 139:4, 183:9, 186:2, 186:3 simple 30:4, 202:2, 204:8, 211:20 simply 36:12, 54:21, 78:9, 82:5,</p>	<p>82:14, 85:16, 93:14, 111:14, 182:5, 194:3, 199:7, 203:14 since 35:18, 140:12, 175:9 single 121:2, 121:19, 177:5, 179:14, 180:11, 188:12, 204:6 singularly 101:16, 101:22 site 14:18, 16:17, 18:6, 18:10, 25:3, 25:22, 26:17, 27:9, 29:5, 41:22, 54:8, 54:11, 57:4, 61:1, 72:8, 74:7, 74:10, 105:13, 205:13 sites 29:16 sitting 8:22, 33:9 situated 123:6, 166:19, 171:13 situation 68:16, 68:22, 124:9, 126:19, 131:22, 192:8 situations 65:19, 119:6, 126:6, 128:11 six 172:18 skill 75:18, 82:19, 107:8, 108:21, 112:7, 112:11, 113:20, 146:12, 185:8, 185:22, 186:6, 186:20,</p>
--	---	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

260

<p>190:19, 193:1, 196:5, 198:13, 200:12, 206:4, 207:7, 208:22, 209:5, 209:18, 215:9, 215:14 skilled 211:4, 214:6 skimmed 104:3 skimming 103:22 slightly 7:17, 67:8, 106:9, 147:2, 148:9, 185:13 small 66:6, 66:9, 66:17, 67:2, 129:2, 213:14 smaller 68:8 smith 3:11, 3:12, 30:8, 36:21, 38:12, 39:9, 42:16, 42:19, 43:2, 51:7, 51:9, 51:14, 52:1, 52:7, 52:12, 60:2, 76:7, 76:14, 83:12, 83:15, 106:16, 114:1, 115:17, 115:19, 116:4, 116:8, 149:12, 152:7, 152:19, 160:13, 160:17, 175:7, 175:13, 189:15, 212:18, 213:10, 213:20, 216:2 solely 199:17 solid 163:21, 164:1, 172:11, 172:14, 173:2, 173:4,</p>	<p>173:8, 173:10, 174:1, 174:7, 174:11, 174:14, 174:19 solution 192:12 solve 193:11, 195:14 solved 193:19, 193:20, 199:10 solving 192:15 some 44:2, 50:6, 52:9, 60:3, 60:9, 66:14, 90:15, 91:7, 118:15, 119:4, 121:1, 121:18, 140:9, 144:17, 149:7, 152:16, 160:1, 160:3, 160:5, 173:11, 173:12, 181:16, 183:10, 186:9, 193:12, 194:22, 195:4, 198:14, 200:13, 204:1, 210:14 somebody 185:11 somehow 110:22 something 57:10, 83:4, 85:11, 106:9, 142:11, 162:11, 181:19, 184:6, 201:16, 209:22, 210:5, 213:2 somewhat 140:20 somewhere 105:8 soon 109:14 sorry 18:3, 18:22,</p>	<p>20:2, 20:9, 23:10, 57:22, 80:14, 86:11, 165:3, 166:3, 184:2, 207:21 sort 198:14, 200:13 sounded 197:5 sounds 152:8, 152:14 spatially 182:16, 183:14, 185:17, 187:13, 189:10 speak 81:16 speaking 36:16 speaks 183:18, 197:8 specialized 184:10, 206:8 specific 12:14, 48:13, 57:11, 88:5, 92:5, 123:3, 123:5, 126:17, 127:10, 139:22, 144:17, 146:19, 152:22, 153:1, 154:17, 159:4, 163:9, 165:8, 165:13, 165:17, 166:16, 166:18, 167:4, 168:5, 168:15, 168:19, 168:22, 169:1, 169:7, 170:16, 170:19, 171:4, 171:11, 171:12, 171:18, 173:3, 187:20, 189:4, 194:12, 195:10, 197:9, 206:15, 210:2 specifically 13:22, 15:18,</p>	<p>21:14, 31:16, 41:20, 49:3, 51:2, 57:1, 86:16, 91:8, 92:9, 95:5, 100:2, 103:19, 112:12, 143:12, 150:10, 151:21, 154:3, 163:8, 165:19, 165:20, 167:10, 173:9, 178:12, 178:16, 179:20, 206:16, 206:20, 210:6, 211:17, 214:11, 214:13 specification 77:10, 80:22, 81:18, 139:10 speed 59:9, 59:10, 61:4, 61:9, 66:12, 67:4, 67:12, 67:22, 68:6, 68:20, 73:10, 73:13, 77:8, 77:9, 77:18, 77:19, 78:11, 80:3, 82:6, 82:7, 82:14, 82:22 speeds 73:1, 78:15 spend 151:16 spot 39:10, 115:20 squares 141:1 stand 38:3, 40:13, 76:13, 89:11, 90:22, 91:1, 99:20, 100:10, 107:20, 108:19 standard 32:12, 32:14, 35:16, 41:2,</p>
---	---	---	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

261

<p>41:3, 72:18, 73:11, 137:18, 156:2, 156:3, 159:5, 205:8, 205:10, 206:7, 215:8 standing 31:1, 91:13 start 18:3, 33:20, 34:9, 36:6, 54:16, 58:20, 67:18, 75:4, 86:7, 94:3, 100:10, 120:8, 124:22, 126:20, 127:1, 136:6, 140:12, 140:13, 143:1, 181:1, 186:21, 212:19, 213:11 started 56:3, 111:16, 121:5, 171:21, 172:4 starting 16:14, 19:4, 25:1, 25:16, 31:22, 35:1, 42:20, 48:14, 56:2, 103:18, 107:19, 118:21, 122:22, 129:7, 213:1 starts 13:3, 14:10, 15:16, 16:4, 33:17, 89:17, 92:22, 145:15, 208:16, 214:22 state 2:14, 27:17, 49:17, 53:4, 70:13, 70:19, 80:16, 89:5, 97:13, 101:13, 104:10, 104:19, 105:14, 155:9,</p>	<p>155:21, 177:15, 196:19, 218:5, 219:7 stated 43:10, 47:6, 59:22, 60:21, 70:3, 70:18, 72:13, 103:18, 104:14, 107:3, 114:3, 141:7, 143:17, 152:11, 156:11, 164:19, 167:8, 167:9, 170:20, 185:5, 191:15, 198:6, 200:6, 204:4 statement 37:16, 38:3, 40:9, 72:4, 89:12, 89:15, 101:5, 102:1, 134:1, 135:8, 169:8, 169:9, 169:10, 170:11, 170:13, 170:15, 187:13, 189:12, 211:22, 212:14, 213:8, 214:4 statements 102:19, 111:11, 111:12, 169:12 states 1:1, 5:9, 5:10, 5:11, 5:12, 5:13, 20:12, 24:9, 27:21, 54:1, 56:10, 57:14, 58:1, 65:20, 70:2, 70:22, 71:10, 72:6, 81:1, 127:22, 128:14, 131:9, 135:19, 141:4, 145:16, 161:7, 162:20, 168:19, 177:4, 181:2, 182:14, 207:1, 207:8,</p>	<p>207:15, 208:9, 209:14 stating 21:16, 101:15, 107:7, 121:11, 197:18, 202:9 station's 183:2, 202:20 station-type 14:1, 25:6, 43:12, 44:22 stationary 169:21 stays 169:2 step 33:19, 34:16, 42:7, 71:2, 72:11, 73:14, 74:3, 202:12, 202:15, 203:6 steps 75:12, 202:11 sterne 3:4 still 13:20, 46:9, 46:11, 59:19, 60:18, 83:5, 87:7, 89:11, 90:5, 90:22, 94:21, 97:10, 100:17, 107:7, 107:20, 142:14, 144:7, 144:9, 144:10, 144:11, 147:20, 148:19 stop 22:20, 76:8, 76:17, 80:7, 125:7, 180:6 stop-and-go 80:3 stopping 76:4, 83:8, 215:18 straight 170:4</p>	<p>straightforward 168:21 streamline 6:10, 155:15 strength 42:9, 93:13, 93:16, 93:18, 94:1, 94:3, 94:6, 94:10, 94:13, 95:10, 95:16, 96:2, 96:5, 96:9, 96:11 stripped-down 207:9, 207:10 strongest 24:10, 96:19, 96:21, 97:4 strongly 174:7 subject 24:20 submitted 6:14, 7:6 subpoint 140:20 subscriber 31:3, 123:12 subscription 31:1 substance 101:4 substantively 99:12 subsystem 46:18, 48:17, 49:6, 56:4, 74:14, 80:1, 109:21 subsystems 46:21, 47:3, 47:12, 48:22, 110:13, 110:17 such 131:21, 145:22, 183:4, 208:10, 218:9, 218:10, 218:12</p>
--	--	---	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

262

<p>sufficient 106:11, 215:8, 215:13 suggest 101:17, 102:2 suite 3:20, 218:20 suited 209:15 summarized 79:19 summary 22:20 support 84:13, 89:9, 91:2, 91:14, 114:10, 126:19, 134:1, 135:3, 163:6, 188:4 supported 49:20, 127:18 supports 54:19 sure 8:2, 20:2, 35:12, 42:11, 42:16, 48:10, 50:18, 52:2, 59:15, 63:20, 83:12, 85:19, 114:21, 117:6, 126:16, 129:16, 135:15, 137:6, 144:8, 159:4, 165:3, 173:9, 176:11, 181:18, 190:17, 196:3 switch 14:12, 19:6 switched 166:4 switches 18:20, 19:3, 19:7, 32:19 switching 14:12 sworn 6:3, 218:9</p>	<p>system 14:20, 15:1, 15:2, 16:19, 32:2, 32:8, 32:11, 32:12, 32:14, 34:5, 34:12, 37:8, 37:15, 38:5, 40:11, 40:15, 40:20, 41:7, 50:21, 51:4, 51:6, 52:20, 53:5, 53:7, 53:20, 54:2, 54:10, 55:13, 55:21, 56:6, 56:7, 56:9, 56:11, 57:7, 57:19, 57:20, 58:13, 58:16, 59:17, 60:16, 61:7, 67:11, 67:15, 68:5, 70:5, 70:7, 70:10, 71:12, 73:9, 74:20, 74:21, 84:12, 85:5, 86:5, 86:22, 89:7, 89:13, 90:1, 90:16, 92:7, 113:1, 132:6, 143:20, 153:7, 153:11, 154:13, 181:5, 181:9, 181:22, 182:6, 182:7, 194:12, 205:13, 207:2, 207:3, 207:5, 207:16, 209:16, 210:1, 214:10 systems 56:15, 59:13, 61:14, 63:5, 63:6, 63:8, 63:10, 107:2 <hr/>T<hr/>table 124:18, 156:21</p>	<p>tablet 157:16, 157:18, 158:8, 158:9 take 7:21, 39:16, 42:13, 43:7, 43:22, 44:6, 48:12, 50:18, 61:18, 63:16, 71:6, 71:8, 76:4, 76:22, 84:1, 84:4, 84:18, 92:9, 103:2, 108:22, 111:14, 111:17, 111:22, 115:1, 115:21, 117:22, 122:21, 130:10, 141:15, 146:22, 153:2, 153:3, 155:5, 160:11, 174:10, 175:12, 175:13, 191:3, 201:22, 202:5, 204:13, 204:16, 209:11, 213:13 taken 43:3, 83:18, 102:7, 116:9, 160:19, 175:17, 186:12, 218:10 taking 7:5, 21:1, 140:13 talk 147:21, 185:11 talked 50:7, 93:9, 193:13 talking 26:9, 33:18, 96:15, 171:5, 201:13, 209:20 talks 14:6, 81:10, 81:14, 207:19, 210:9 tdma 56:17</p>	<p>teach 101:16, 102:1 teaches 122:4, 162:10, 184:3 teaching 141:8 teachings 107:15 technical 52:14, 107:13, 109:7, 183:21, 186:10, 187:3, 187:20, 187:21, 187:22, 207:19, 208:3, 208:9, 208:17 technically 113:13, 183:13, 185:15, 185:19, 186:5, 188:14, 189:1 technician 4:4, 8:4, 8:8, 64:3, 117:2, 117:6, 176:4 technology 183:4, 184:4, 188:1 telecommunication 123:15, 146:5, 209:16, 210:1, 214:10 telephone 71:13, 109:5 telephones 86:4, 210:10 tell 20:3, 136:16, 137:1, 137:4, 149:15, 150:21, 210:6 telling 76:14 tells 136:10, 141:17, 209:5 ten 68:12, 68:15,</p>
--	--	---	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

263

69:6, 69:9, 69:13, 76:15 ten-minute 42:14 term 17:8, 77:6, 78:7, 93:8, 93:11, 136:14, 137:4, 143:21, 144:1, 158:1, 158:19, 171:4 terminal 99:5, 101:1, 103:3, 120:12, 120:13, 141:10, 142:18, 142:22, 143:2, 143:6, 161:8, 162:2, 162:5, 165:9, 166:19, 172:10, 172:12, 173:17, 202:17, 203:9 terminals 105:21, 108:1, 123:4, 123:6, 139:15, 139:18, 140:16, 141:13, 141:18, 142:8, 144:21, 147:14, 148:3, 161:16, 161:19, 166:17, 170:17, 171:11, 171:13, 198:4, 198:11, 200:3, 200:11 terminology 35:14, 35:16, 41:3, 113:2, 129:16, 129:22 terms 16:11, 17:13, 145:2, 154:22, 174:5, 186:10, 201:13 terrestrial 14:19, 56:22, 63:9 terrestrial-based 107:2	test 114:8, 185:20 testified 6:3, 18:17, 111:4, 111:8, 188:22 testimony 6:13, 8:19, 15:3, 15:20, 16:20, 17:4, 21:21, 23:3, 26:13, 30:1, 38:1, 38:11, 75:5, 183:12, 217:4, 217:6, 218:11 texas 218:20 text 88:15, 168:3, 169:4, 170:8, 170:18, 181:16, 205:3 th 219:2 than 21:16, 26:5, 30:19, 31:21, 45:14, 46:6, 46:7, 47:1, 52:3, 53:11, 56:2, 58:17, 59:12, 63:9, 69:8, 70:6, 82:16, 83:4, 94:10, 94:18, 96:1, 96:9, 129:21, 131:14, 131:18, 132:14, 137:22, 142:12, 148:9, 150:6, 162:12, 162:14, 174:12, 179:7, 184:6, 188:2, 195:18, 206:15, 214:13, 214:16 thank 10:10, 18:11,	19:10, 36:15, 37:1, 43:2, 64:4, 64:16, 90:13, 116:8, 117:5, 120:4, 135:7, 138:13, 176:6, 176:21, 216:4 thanks 6:8, 83:16, 83:17, 146:1 that" 200:14 their 31:3, 94:12, 94:15, 101:22, 120:16, 121:13, 163:5, 168:9, 189:21, 191:18 them 63:9, 86:4, 86:22, 112:5, 112:6, 186:13, 188:2, 191:6, 202:4 there 8:22, 19:7, 19:16, 25:20, 31:12, 39:18, 43:8, 61:20, 69:3, 69:5, 70:1, 71:10, 77:2, 84:2, 86:1, 88:13, 89:2, 97:10, 99:12, 107:13, 110:14, 110:16, 113:7, 113:11, 113:18, 118:15, 119:3, 119:14, 119:17, 120:3, 120:8, 120:14, 121:11, 121:12, 124:11, 125:3, 125:7, 126:5, 127:4, 127:22, 129:9, 129:11, 130:12, 131:15,	138:18, 139:22, 140:15, 140:20, 144:20, 146:10, 147:7, 153:4, 154:18, 155:7, 158:12, 158:20, 158:21, 162:19, 163:21, 164:8, 167:9, 167:11, 172:11, 174:15, 174:18, 175:15, 177:2, 180:6, 181:14, 183:16, 183:22, 185:10, 188:10, 189:6, 190:9, 191:2, 192:1, 194:22, 195:4, 195:15, 207:6, 216:1 there's 8:2, 12:3, 19:6, 44:18, 44:19, 58:18, 60:3, 63:11, 63:20, 65:17, 66:5, 66:8, 69:3, 69:11, 72:21, 90:18, 95:17, 106:2, 108:8, 109:17, 109:18, 110:4, 110:7, 110:18, 114:14, 116:18, 118:22, 120:7, 122:8, 131:15, 146:19, 148:14, 148:20, 154:16, 154:17, 169:13, 173:11, 173:12, 176:11, 178:12, 181:20, 181:21, 182:5, 183:20, 186:5, 186:16, 188:7, 188:14, 191:6, 193:10, 195:14, 195:15, 199:2, 201:19 therefore 71:22, 79:22,
---	--	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

264

<p>97:17, 105:2, 111:21, 118:3, 154:22, 163:4, 165:13, 182:22 these 6:20, 22:19, 31:15, 43:13, 46:21, 61:5, 61:11, 67:2, 91:6, 101:22, 106:18, 107:2, 109:8, 110:15, 112:20, 114:6, 114:9, 114:15, 122:10, 128:15, 132:3, 145:8, 145:10, 184:9, 189:7, 190:20, 191:4, 191:5, 193:22, 196:6, 206:4, 206:10, 211:11, 211:17 they 10:7, 13:14, 17:13, 22:15, 22:18, 47:1, 61:7, 81:18, 87:22, 94:14, 94:16, 95:14, 101:21, 102:5, 111:19, 111:21, 113:3, 113:13, 117:17, 126:4, 128:4, 128:5, 131:16, 146:1, 149:10, 156:16, 163:5, 168:21, 172:20, 191:4, 193:22, 194:5, 198:5, 200:4 they're 36:21, 45:18, 47:1, 76:14, 88:2, 102:8, 170:21, 191:2 they've 102:2, 102:6 thing 9:20, 144:3</p>	<p>things 45:19, 78:18, 78:22, 147:15, 170:1, 208:20 think 15:12, 25:15, 27:4, 28:22, 33:1, 39:10, 45:13, 47:16, 51:9, 51:10, 51:14, 51:15, 52:2, 52:8, 54:19, 57:8, 57:12, 57:18, 59:15, 60:3, 63:2, 63:7, 63:8, 63:17, 65:17, 70:14, 72:5, 75:18, 76:18, 78:17, 79:7, 79:18, 82:19, 83:7, 87:11, 90:19, 91:10, 99:12, 102:18, 103:10, 106:7, 106:17, 108:11, 110:20, 111:3, 113:18, 114:2, 114:8, 114:10, 114:18, 114:20, 120:7, 121:21, 122:18, 124:21, 125:19, 129:15, 134:8, 154:10, 155:3, 157:20, 162:13, 172:16, 173:2, 178:2, 179:18, 180:13, 183:9, 183:22, 188:19, 195:3, 196:16, 198:1, 199:22, 203:22, 212:20, 212:22, 214:8, 214:21, 215:1, 215:17, 215:18 thinking 65:20, 92:4,</p>	<p>146:19, 186:21 third 105:10, 130:19 those 7:1, 11:5, 24:1, 49:8, 56:21, 61:2, 67:6, 68:9, 68:15, 68:17, 69:13, 74:21, 87:20, 104:3, 107:20, 107:21, 109:20, 110:2, 119:22, 128:4, 128:17, 131:17, 140:11, 143:11, 144:6, 145:2, 147:17, 148:8, 153:22, 154:14, 159:9, 163:17, 164:1, 165:13, 167:10, 170:1, 172:11, 172:13, 172:18, 179:17, 180:16, 184:21, 186:21, 188:9, 198:10, 200:10, 200:17, 200:22, 206:2, 211:6, 211:19, 212:8, 212:15, 214:6, 215:7 though 33:8, 47:6, 121:17, 154:11, 174:13 thought 126:15, 158:5, 194:14 thousands 152:12 three 6:9, 19:7, 19:22, 20:16, 46:7, 56:22, 129:17, 130:18, 147:18, 182:19, 211:9, 211:11,</p>	<p>215:4 through 7:22, 8:1, 9:21, 30:9, 39:16, 47:19, 48:3, 48:21, 58:16, 60:8, 63:19, 65:5, 65:18, 68:8, 68:14, 68:18, 68:20, 69:1, 69:6, 69:9, 69:13, 72:2, 75:9, 84:10, 85:6, 98:5, 103:22, 104:3, 107:20, 111:10, 116:17, 124:16, 128:11, 130:7, 140:3, 140:17, 141:6, 142:21, 143:7, 143:9, 143:10, 145:13, 148:20, 149:1, 151:1, 151:15, 163:14, 164:14, 165:1, 165:12, 165:22, 167:18, 173:6, 174:6, 176:10, 182:13, 190:16, 196:3, 207:18, 208:1, 213:4, 215:1 thrust 184:5 thursday 1:18, 218:21 thus 62:1, 120:10 tie 121:7 tied 122:3 tiedemann's 62:18 tightly 143:17 till 116:5</p>
---	---	---	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

265

time 55:2, 56:7, 59:10, 75:3, 76:2, 76:19, 83:11, 83:13, 114:4, 114:5, 125:12, 147:4, 151:7, 159:15, 160:2, 160:3, 175:9, 186:3, 215:21 time-based 59:2 times 10:12, 19:8, 98:12, 128:1, 187:6, 187:8, 188:20, 199:5, 201:3, 211:18 title 27:21 today 6:12, 8:22, 70:15, 70:18, 183:10, 199:13 together 62:17, 62:19, 110:2, 112:4, 114:6, 114:9, 121:7, 121:9, 122:3, 132:14, 141:12, 186:22 told 87:20, 91:4, 152:20 tomorrow 215:19, 215:21 too 49:16, 100:6 took 88:4, 175:20 top 20:6, 109:4, 110:5, 112:18, 140:17, 141:1 topics 116:2 totally 38:13, 195:18,	199:15, 209:22 touched 113:9 towards 173:6, 180:14 track 124:20 tracking 202:12, 202:15, 202:19, 203:3, 203:12, 204:3, 204:9 tracks 33:3, 33:12 trademark 1:1 traditional 73:8, 122:5, 141:9, 143:19, 146:15 traffic 77:8, 77:9, 77:18, 77:19, 78:10, 78:12, 78:14, 80:2, 80:3, 80:10, 80:16, 80:19, 81:2, 81:3, 81:5, 81:10, 81:15, 82:6, 82:8, 82:11, 82:15, 82:16, 82:18, 82:21, 82:22, 83:1, 83:4, 83:6 train 123:9, 124:6, 124:11, 125:1, 125:22, 126:11, 126:13, 127:17, 127:20, 128:11, 129:10, 130:3, 167:1, 167:5, 167:17, 167:20, 167:21, 192:1, 193:3 transceiver 200:15	transceivers 45:5 transcript 5:5, 7:16, 9:15, 37:5, 39:8, 60:13, 64:6, 117:8, 176:8, 196:1, 199:20, 212:5 transcription 217:5 transmission 197:13 transmit 47:8, 110:4, 110:18, 120:16, 121:13, 165:9 transmitted 11:13, 93:5, 118:7, 128:13, 130:22, 131:12, 131:16, 131:17, 136:9, 137:11, 138:7, 178:4, 179:4, 179:10, 179:14 transmitteds 131:17 transmitter 43:16, 200:18, 204:6 transmitting 108:1 transportation 58:7 travel 47:18 traveling 66:1, 66:11, 66:20, 66:22, 67:12, 67:21, 68:6, 68:20, 69:1, 69:4, 69:9, 69:12, 80:4, 80:11, 80:18, 81:1, 153:7 travels 32:3, 47:19,	48:3, 48:21, 49:8, 68:14 treating 111:12 trial 1:3 triangle 212:10 triangles 211:9, 212:7, 212:11 tried 115:11 tries 31:2 true 8:19, 152:13, 172:16, 174:17, 217:4, 218:11 trusty 48:10 try 94:8, 113:16, 145:10, 213:12, 213:22, 214:1 trying 24:2, 60:8, 85:7, 88:12, 136:21, 190:8, 196:17 tuesday 212:21 tunnel 128:12, 129:13, 131:22 tunnels 128:15 turn 19:12, 43:6, 61:17, 92:8, 95:2, 96:14, 120:6, 138:14, 176:22, 178:18, 180:18, 182:10 turned 164:10 turning 164:10
--	--	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

266

<p>two 10:13, 12:3, 16:7, 17:13, 45:18, 72:14, 78:17, 78:21, 85:21, 86:10, 86:15, 89:3, 90:18, 93:17, 94:17, 109:22, 110:16, 111:5, 112:3, 112:9, 112:20, 113:5, 113:6, 113:10, 114:6, 114:9, 114:15, 117:13, 121:6, 121:9, 122:2, 125:14, 131:15, 132:6, 151:1, 151:6, 151:16, 159:6, 166:8, 167:3, 167:9, 170:1, 186:22, 189:7, 191:6, 191:10, 191:11, 203:4, 203:5, 204:22</p> <p>tx 3:14, 3:21</p> <p>type 31:10, 90:15, 119:1, 123:2, 123:7, 123:9, 123:21, 124:4, 127:15, 159:3, 163:1, 166:12, 166:13, 166:15, 166:20, 167:4, 168:4, 169:6, 186:17, 190:3, 192:18, 194:12, 195:4, 195:8, 195:9, 195:10, 202:8, 203:1, 210:17</p> <p>types 30:11, 81:5, 109:22, 118:22, 125:14, 129:18,</p>	<p>132:6, 158:20, 158:21, 160:6, 163:3, 166:9, 167:3, 167:9, 167:10 typical 32:7, 47:7, 50:20, 52:20, 56:11, 81:17 typically 31:14, 47:22, 57:16, 68:1, 93:19, 154:7, 162:6, 162:8, 162:12</p> <hr/> <p>U</p> <hr/> <p>ultimately 98:5 uncover 173:8 under 158:13 underlying 114:10 understand 6:12, 7:1, 8:16, 17:4, 27:12, 35:4, 75:19, 78:13, 78:14, 79:1, 81:18, 82:15, 82:21, 88:13, 91:17, 101:6, 101:11, 101:13, 102:13, 102:20, 103:6, 106:4, 108:15, 108:17, 112:3, 112:7, 113:17, 114:16, 121:21, 121:22, 122:18, 129:8, 130:8, 154:16, 160:1, 170:20, 178:16, 185:7, 189:3, 189:5, 190:20, 194:11, 198:13, 200:13,</p>	<p>207:8 understanding 18:12, 30:10, 74:5, 81:4, 81:17, 93:8, 93:11, 102:11, 103:12, 111:5, 136:13, 150:16, 152:1, 152:4, 158:18, 187:11 understands 72:10, 209:1 understood 39:13, 70:4, 99:11, 101:3, 113:3, 113:7, 114:18, 130:8, 180:13, 188:18 unfortunately 136:19 unique 206:8 unit 14:1, 25:6, 31:10, 43:12, 44:22, 57:17, 62:3, 66:2, 66:13, 66:19, 66:20, 67:1, 67:3, 67:5, 67:12, 67:22, 68:6, 68:8, 68:13, 68:16, 68:19, 68:22, 69:4, 69:8, 97:16, 98:9, 99:6, 99:9, 101:9, 102:15, 103:15, 104:12, 104:22, 109:5, 135:21, 139:2, 139:6, 139:16, 153:15, 156:14, 156:15, 156:17, 156:18, 157:14, 157:17, 157:18, 157:20, 158:14, 159:20</p>	<p>united 1:1, 5:9, 5:10, 5:11, 5:12, 5:13 units 100:14, 100:18, 105:15, 105:17 universal 209:16, 210:1, 214:9 unless 72:14, 72:21, 90:21, 174:21 unlike 205:22 until 36:11, 71:3, 91:1, 108:12, 116:4 update 28:12, 28:14, 31:15, 31:20, 32:20, 33:14, 34:19, 34:21, 35:20, 40:22, 41:4, 41:8, 42:9, 54:15, 55:2 updates 30:11, 33:7, 33:11, 41:10, 41:13, 41:16 updating 33:13 upon 158:9 use 17:13, 28:2, 29:16, 41:10, 41:11, 58:19, 61:12, 75:19, 86:3, 86:20, 94:8, 106:19, 112:21, 137:2, 159:1, 181:4, 181:21, 186:9, 190:22, 193:12, 198:19, 201:1, 209:15, 210:13</p>
---	---	---	--

used 21:19, 25:20, 31:12, 35:5, 35:15, 35:16, 53:10, 54:14, 57:3, 61:9, 78:9, 95:19, 109:15, 112:19, 114:12, 119:18, 123:3, 123:8, 123:11, 123:22, 128:16, 130:15, 132:21, 133:22, 143:19, 143:20, 143:21, 154:22, 158:21, 159:14, 161:9, 162:2, 162:5, 163:5, 163:19, 166:16, 166:22, 168:5, 169:7, 170:2, 170:15, 172:6, 172:17, 181:9, 184:13, 185:19, 189:9, 192:11, 194:1, 197:1, 202:16 uses 16:11, 54:13, 56:7, 56:8, 119:20, 156:17, 171:4 using 15:7, 17:8, 33:9, 33:10, 66:5, 78:6, 107:4, 122:7, 126:1, 146:10, 149:16, 156:1, 156:3, 184:8, 184:11, 187:19, 193:6, 194:6, 194:9, 194:12, 203:13 ut 141:18 <hr/> V <hr/> validation 30:20	variable 167:19 variations 156:14 various 47:19, 49:1, 91:4, 101:17, 140:9, 174:5, 204:12 vary 156:16 vehicle 57:16, 58:1, 58:3, 58:4, 66:21, 80:4, 80:11, 80:17, 81:1, 82:11, 83:1, 83:6 vehicle-mounted 57:19 vehicle-operated 148:2 vehicles 58:14, 59:18, 60:17 vehicular 70:7 venture 186:22 verbatim 60:13 vercauterer's 145:9, 161:16, 161:19, 183:15, 185:18, 186:7, 187:14, 189:11, 191:15, 192:12, 195:1, 198:18 verifies 30:18 verify 100:6 verizon 159:8, 159:11 vernacular 186:10, 203:13 versa 114:13	version 7:11, 193:16 versions 178:3, 178:13, 178:14, 179:13, 179:22, 180:2, 180:4, 193:17 versus 68:7, 96:10, 96:12 vertical 143:8, 143:15, 149:19 very 9:21, 21:15, 21:19, 30:4, 32:13, 41:1, 46:8, 53:17, 60:7, 62:19, 66:17, 108:12, 109:15, 113:5, 127:10, 128:17, 132:11, 169:11, 174:7, 195:10, 204:8, 206:13, 208:8, 211:16, 211:20, 213:13 via 126:7, 126:13, 133:17, 141:22, 145:20, 173:17, 205:6 vice 114:13 view 188:1 vii 161:10 virtual 1:17 virtually 2:2, 186:16 voice 28:9, 158:3, 158:6, 158:7 volkswagen 1:5 volume 1:17	<hr/> W <hr/> want 9:8, 15:10, 19:12, 35:13, 36:4, 44:6, 48:12, 65:13, 71:8, 84:18, 113:15, 139:1, 144:8, 175:12, 176:22, 203:5 wanted 52:2, 126:16, 158:22, 181:17 wanting 87:14 wants 174:21 warren 3:17, 3:18, 218:19 was 13:7, 29:20, 35:6, 35:14, 36:15, 37:5, 37:14, 37:18, 38:5, 40:11, 41:2, 57:9, 60:4, 60:14, 62:4, 62:20, 63:3, 65:20, 67:8, 68:8, 69:1, 70:5, 70:9, 72:19, 73:9, 75:1, 85:16, 90:3, 99:16, 100:11, 100:20, 100:21, 111:4, 111:8, 111:9, 113:1, 113:10, 113:11, 113:13, 115:10, 121:16, 121:17, 132:1, 140:3, 140:8, 140:20, 144:20, 145:5, 146:19, 151:11, 151:21, 151:22,
--	---	---	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

268

<p>152:3, 158:5, 158:12, 159:3, 159:4, 159:8, 159:20, 164:22, 168:1, 170:7, 170:11, 172:21, 175:20, 176:3, 178:1, 183:4, 189:9, 190:8, 190:9, 194:13, 195:22, 196:8, 197:6, 197:11, 200:9, 206:20, 209:4, 211:21, 218:8, 218:10, 218:15 washington 3:7 wasn't 108:3, 197:5 watch 213:1 way 11:18, 23:16, 24:3, 34:2, 53:6, 57:8, 57:12, 59:8, 68:10, 73:5, 73:6, 81:7, 92:4, 110:8, 114:2, 115:4, 115:11, 122:4, 128:11, 141:20, 142:22, 143:2, 145:1, 145:20, 146:12, 146:15, 148:21, 150:2, 150:6, 156:13, 157:13, 164:14, 171:5, 178:2, 184:18, 186:2, 187:7, 193:19, 195:18, 200:17 ways 58:19, 193:11, 195:14 we'll 8:7, 27:2,</p>	<p>34:9, 42:17, 42:22, 76:9, 76:13, 83:15, 116:6, 151:15, 151:17, 175:14, 215:22 we're 24:16, 26:9, 42:11, 76:3, 77:14, 103:10, 138:11, 147:20, 154:10, 166:6, 175:9, 180:14, 199:12, 201:13, 212:20, 213:20, 215:18 we've 53:21, 74:11, 83:22, 98:11, 100:1, 114:22, 115:19, 116:16, 136:1, 137:19, 160:10, 167:8, 181:15, 193:13 weak 194:8 well 9:18, 10:10, 12:1, 17:13, 27:16, 35:11, 36:6, 45:1, 46:15, 71:6, 74:11, 89:14, 101:13, 132:4, 135:18, 144:3, 145:8, 148:14, 151:15, 156:12, 157:13, 157:17, 158:2, 173:11, 176:3, 181:20, 187:3, 187:18, 198:16, 199:15, 205:20, 206:7, 206:20, 209:17, 211:3, 213:4, 214:6 well-known 95:11, 211:6</p>	<p>went 6:19 were 18:14, 61:6, 61:7, 61:8, 61:9, 61:15, 62:1, 68:20, 69:9, 84:16, 87:22, 96:15, 97:8, 99:15, 102:5, 107:1, 108:11, 111:11, 113:3, 115:6, 145:1, 158:6, 158:20, 158:21, 159:7, 160:5, 166:15, 182:15, 187:14, 187:22, 190:9, 191:22, 193:22, 196:17, 197:4, 206:16, 211:19, 214:6 what's 31:11, 31:12, 31:14, 31:16, 31:17, 148:16, 152:11, 206:2 whatever 178:20, 206:12 when 11:11, 14:22, 15:8, 16:5, 17:10, 23:3, 27:16, 28:6, 29:17, 32:2, 32:18, 35:17, 39:9, 41:2, 41:15, 54:6, 54:10, 54:14, 54:16, 55:1, 56:20, 57:3, 58:20, 61:12, 63:12, 67:14, 69:4, 70:20, 72:6, 74:16, 74:18, 75:3, 75:16, 75:21, 76:9, 76:17,</p>	<p>80:2, 89:22, 100:20, 109:19, 125:20, 128:1, 132:20, 150:16, 152:4, 168:14, 172:8, 192:9, 192:19, 196:1, 206:21, 207:8, 209:2, 210:9 where 12:4, 13:9, 13:12, 13:15, 13:17, 13:20, 14:13, 14:15, 15:5, 15:17, 16:15, 22:16, 23:17, 27:4, 28:5, 29:8, 30:13, 33:13, 38:15, 39:11, 54:3, 55:11, 56:2, 57:13, 58:9, 60:21, 62:2, 62:13, 63:11, 66:5, 66:8, 66:17, 68:16, 68:22, 69:3, 69:6, 69:11, 79:14, 82:14, 85:7, 85:9, 85:13, 88:7, 89:3, 90:3, 95:17, 104:10, 111:1, 111:22, 118:21, 119:3, 119:6, 119:11, 119:17, 124:9, 126:6, 126:11, 127:16, 128:11, 128:15, 130:16, 132:13, 134:9, 141:9, 143:18, 145:15, 154:4, 165:5, 168:19, 171:12, 172:4, 173:5, 178:19, 179:16, 180:16, 182:3,</p>
---	---	--	--

Transcript of Mark R. Lanning
Conducted on June 4, 2020

269

183:9, 187:8, 190:2, 192:14, 199:8 whereas 123:9 wherein 123:6, 166:19 whereof 219:1 wherever 169:12, 193:21 whether 30:5, 30:18, 38:19, 41:10, 60:22, 77:19, 77:20, 78:20, 91:6, 106:10, 171:5, 185:21, 192:21, 194:13 which 16:12, 20:3, 26:16, 29:9, 40:8, 41:1, 41:13, 43:15, 44:20, 45:15, 58:13, 77:8, 82:7, 87:13, 89:1, 91:21, 93:19, 97:16, 97:22, 98:5, 99:16, 104:22, 114:21, 120:9, 121:16, 132:14, 132:17, 134:18, 137:18, 138:9, 142:19, 142:20, 149:1, 150:18, 151:21, 152:6, 156:21, 165:8, 165:9, 168:4, 169:14, 175:6, 178:16, 178:19, 185:20, 188:9, 192:11, 196:2, 203:8, 204:17, 207:21, 209:5, 209:20, 211:12, 211:21, 212:15	while 9:19, 37:5, 39:14, 46:2, 63:18, 63:22, 65:7, 94:6, 144:16, 183:19 whoa 42:19 whole 34:8, 41:8, 41:12, 41:14, 92:22, 122:13, 148:16, 172:4, 184:22, 198:18, 198:20, 199:2 whose 218:7 why 18:19, 20:19, 34:13, 35:13, 36:6, 75:14, 79:2, 83:8, 84:4, 97:21, 103:20, 104:11, 107:7, 109:8, 113:4, 114:15, 114:16, 116:4, 121:22, 139:22, 144:17, 155:10, 158:5, 160:10, 183:17, 185:11, 190:8 will 7:3, 28:14, 46:5, 48:22, 60:10, 63:13, 67:5, 72:22, 73:1, 88:17, 95:6, 97:2, 100:6, 111:16, 125:10, 151:18, 165:16, 165:18, 168:12, 204:5, 212:5, 212:10, 212:17 wire 122:7 wired 122:16, 124:12,	125:3, 126:13, 128:9, 128:20, 129:4, 130:7, 132:9, 134:14, 164:2, 174:2, 174:8, 174:20 wireless 118:5, 118:15, 119:5, 119:7, 119:12, 119:14, 119:18, 119:22, 125:2, 128:1, 128:7, 128:12, 128:15, 128:18, 129:2, 129:3, 130:5, 132:7, 133:5, 134:15, 135:11, 135:14, 135:17, 136:14, 137:2, 137:8, 137:9, 137:16, 138:4, 138:5, 138:7, 138:10, 160:6, 161:8, 161:16, 161:19, 162:1, 173:21, 174:1, 174:13, 198:7, 198:8, 200:7, 200:15, 200:16, 200:18, 200:19 wires 174:21 within 32:19, 101:9, 103:15, 104:12, 106:14, 122:12, 123:13, 123:15, 131:13, 179:5, 202:15, 218:5 without 62:21, 69:1, 69:10, 97:6, 149:8, 149:9, 150:4, 159:17, 171:9, 190:20 witness 51:17, 51:21,	117:9, 160:12, 160:15, 212:22, 213:9, 215:20, 218:7, 218:13, 218:18, 219:1 won't 28:16, 73:3, 94:8, 108:7, 151:18 wondering 115:7 word 25:20, 35:4, 35:5, 53:10, 62:20, 102:2, 144:11, 156:17 wording 80:9 words 13:4, 14:10, 15:7, 15:16, 19:19, 20:13, 20:22, 21:19, 28:2, 28:22, 29:7, 79:10, 89:17, 89:21, 90:18, 95:19, 120:14, 124:8, 126:3, 136:20, 146:10, 148:8, 153:18, 153:21, 153:22, 154:19, 156:18, 159:1, 185:19, 189:4, 191:6, 193:7 work 60:8, 65:17, 76:10, 108:7, 110:3, 110:16, 111:17, 160:6 working 210:7 works 83:14 wouldn't 75:11, 82:3, 83:2, 107:7, 149:13, 154:7,
--	--	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

270

186:4, 190:10, 195:15, 215:11 write 91:12 writing 91:10 written 139:17, 149:11, 169:5, 170:8, 170:17 wrong 18:4, 100:11, 100:21, 170:4, 183:11	131:8, 133:9, 133:14, 133:21, 139:10, 142:6, 147:10, 156:7, 158:2, 158:20, 161:2, 161:14, 163:12, 168:8, 176:18, 177:11, 181:7, 183:8, 196:12, 197:22, 202:22, 208:14, 209:20, 213:18, 215:20 yesterday 93:10, 111:3, 183:11 yet 36:2, 83:13 york 3:6 you'd 76:5, 83:11, 136:15, 144:15, 204:20 you'll 17:2, 62:21, 212:3 you're 13:2, 17:8, 20:3, 20:6, 21:13, 21:15, 24:20, 34:9, 36:10, 36:11, 38:14, 50:10, 50:17, 62:9, 63:18, 64:11, 86:7, 87:8, 88:10, 91:22, 108:18, 115:7, 115:9, 121:22, 129:15, 135:15, 142:12, 150:21, 151:4, 153:22, 157:22, 161:15, 166:1, 178:17, 180:15, 193:6, 197:6, 197:18, 198:17, 200:18,	200:19, 206:14, 212:18, 212:19, 213:10 you've 35:12, 41:13, 53:11, 56:10, 84:6, 87:20, 91:4, 95:19, 101:19, 124:17, 126:21, 144:1, 145:4, 156:11, 163:19, 163:20, 167:8, 174:3, 185:19, 187:5, 187:7, 188:19, 203:4, 203:11 yourself 49:15, 155:12	01101 1:11 01105 1:14 02 175:18 04 160:19 05 216:5, 218:22 08 218:22 <hr/> 1 <hr/> 1 83:13, 83:14, 83:16, 83:18 1-5-9 196:15 10 173:13, 202:6, 202:7, 209:13, 210:19, 212:14, 213:17, 214:4, 214:22, 215:20 100 66:18, 205:7 101 205:7 102 109:1, 109:3 105 56:4 11 42:15, 42:18, 42:20, 42:21, 43:1, 53:4, 92:10, 145:15, 218:22 1100 3:6 112 117:22, 118:2, 119:10 113 120:7, 121:12 115 77:16, 118:21
<hr/> Y <hr/> yeah 14:5, 20:8, 51:20, 52:5, 52:8, 52:12, 83:14, 100:7, 154:2, 212:19 years 210:8 yep 188:18 yes 6:16, 6:22, 7:4, 8:14, 8:21, 10:14, 13:17, 20:17, 42:22, 43:21, 45:8, 45:12, 46:20, 47:15, 49:11, 50:4, 50:8, 50:12, 51:2, 51:8, 62:8, 62:12, 64:13, 65:1, 70:12, 71:19, 77:12, 80:6, 81:12, 84:15, 85:2, 87:2, 92:16, 95:13, 97:20, 107:18, 115:18, 118:12, 120:21, 123:20, 124:8, 125:19, 131:3,		<hr/> Z <hr/> zero 201:12 zoom 7:18 <hr/> ' <hr/> 's 21:9, 21:22, 23:4, 44:10, 85:4, 98:2, 101:9, 101:10, 102:14, 102:16, 103:14, 103:15, 104:11, 104:13, 105:5, 106:5, 106:10, 106:14, 107:16, 108:13 <hr/> . <hr/> .2475 3:15 .2955 3:22 .8729 3:8 <hr/> 0 <hr/> 00 175:14, 215:20	

Transcript of Mark R. Lanning
Conducted on June 4, 2020

271

<p>117 5:12 118 106:2 12 43:3, 43:4, 64:17, 177:19, 178:8 120 134:1 121 129:7, 130:10 1212 3:19, 218:20 122 133:1, 133:2, 135:9, 135:15, 136:21, 137:3, 137:7, 138:3, 138:6 123 87:16, 127:3 125 155:6, 155:9, 155:12 129 165:2, 165:6 13 54:22, 56:3 130 205:6, 205:8 132 164:12, 205:7, 205:10, 205:17 134 161:5, 161:7, 161:22, 205:7 136 177:1, 177:4, 178:18, 180:16 139 177:15, 178:6 14 42:20, 43:3 143 87:16 15 13:1, 13:3,</p>	<p>13:9, 13:12, 14:4, 14:15, 15:4, 16:4, 16:13, 16:14, 18:2, 18:13, 18:22, 19:1, 26:7, 31:7, 32:1, 35:1, 40:17, 42:15, 42:18, 42:20, 160:13, 160:14, 202:13 150 95:7 154 95:9, 205:18 158 182:11, 183:12, 184:12 159 197:6, 197:7, 197:10, 197:12, 197:16, 199:16 16 219:2 164 205:20 17 57:14, 65:18, 65:21 173 77:13 175 77:1, 77:3, 79:20, 81:22, 82:14 176 5:13 18 47:2, 50:19, 50:20, 52:18, 147:6, 147:8, 147:13, 147:20, 149:8, 150:13, 150:22, 151:2, 151:5, 151:7, 151:21 181 85:22, 86:17</p>	<p>19 47:2, 65:18 191 87:16, 88:18 1991 35:7, 41:1 1995 158:19, 159:2, 159:6, 159:15, 160:2, 160:3 <hr/>2 <hr/>2 83:19 2-0-6 84:1, 84:9 20 160:15, 160:17, 160:18 20005 3:7 2019 1:11, 1:14 202.772 3:8 2020 1:18, 218:21, 219:2, 219:3 204 101:14, 103:19, 104:6, 107:19 206 84:3, 84:5, 88:22, 90:4, 97:8, 99:16, 103:20, 103:21, 104:15, 104:19, 105:15 207 104:15 21 160:20, 207:18, 208:1 210 46:3 211 107:20 219 1:21</p>	<p>22 64:18, 65:3, 65:5, 98:7, 98:17, 99:6, 99:17, 118:10, 131:9, 135:19, 138:11, 147:19, 153:3, 153:10, 153:13, 153:21, 154:4, 154:7, 154:9, 154:15, 154:20, 154:22, 155:1, 156:15, 156:17, 156:18, 173:14, 179:1, 179:2 226 170:4, 172:7 227 162:17, 162:20, 163:16, 168:15, 168:18 231 164:13 24 177:20 25 42:21, 43:1 250 3:20, 218:20 27 205:4 28 98:16 29 43:4, 98:15, 98:16, 98:18 <hr/>3 <hr/>3 116:9, 116:10 30 83:13, 83:14, 83:16, 98:5, 98:14, 99:16, 99:22, 205:5, 205:6 300 131:14, 131:19,</p>
--	---	--	---

Transcript of Mark R. Lanning
Conducted on June 4, 2020

272

137:15, 138:1, 138:12, 179:7 300800 1:20 301 16:17, 51:10, 51:14, 52:3, 52:7 307 3:13, 51:10, 52:3, 52:7, 55:16, 56:13, 59:7, 61:7, 61:16, 72:19 309 114:12 31 180:20 315 47:4 32 116:9 34 83:19, 99:19, 99:22, 100:7, 100:8, 100:22 34.3 88:4, 88:16, 89:17, 90:11, 90:20, 91:9, 91:15, 92:1, 92:20, 92:22, 96:16, 97:1, 100:2 36 98:21 39 5:10 390 49:20, 50:1, 70:7, 70:11, 97:13, 101:9, 101:15, 102:6, 102:7, 102:14, 103:2, 103:3, 103:14, 104:11, 104:16, 104:20, 105:5, 105:7,	105:10, 106:3, 106:5, 106:10, 106:20, 107:5, 107:9, 107:12, 107:15, 107:22, 108:9, 108:13, 109:6, 109:14, 110:5, 111:18, 112:13, 112:22, 113:12, 113:21 <hr/> 4 <hr/> 4 160:13, 160:15, 160:17, 160:18 4,901,301 50:22 4,901,307 32:9, 52:22, 55:5 420 85:1, 90:9, 90:10, 92:11, 92:19 43 19:19, 20:7 44 71:9, 72:2, 125:13, 126:2, 166:7 440 46:19, 46:22, 47:3, 47:12, 48:22 47 83:18, 116:10 48 72:2, 110:6 49 96:11 <hr/> 5 160:19, 160:20, 175:14, 175:17 5,289,527 5:10 5,504,903 115:16	5,504,935 5:12 5,559,865 5:9 5,566,209 5:13, 175:6, 176:3 5-3 138:17 5-7 24:8 50 59:14, 122:22, 123:1, 168:4, 169:5, 170:8, 170:17, 175:17, 205:19 51 48:11, 54:5, 96:10 52 41:21, 72:6 53 138:14, 139:20, 156:20 55 48:14, 75:9, 141:16, 141:17 57 24:8, 25:17, 29:18, 30:5, 31:11 58 95:5 <hr/> 6 175:18 6-3 138:16 60 109:4 64 5:11, 75:9 65 13:20, 19:4, 25:4, 26:7, 31:9, 32:1,	35:2, 40:19, 44:21 <hr/> 7 <hr/> 7 216:5, 218:22 7,221,904 1:12, 5:11, 6:15, 7:13, 8:20, 64:2 70 205:20 75038 3:21, 218:21 75087 3:14 77 127:2 78 19:15, 20:5, 25:11 <hr/> 8 <hr/> 8,718,543 1:15 8-2 86:11, 86:12, 86:14 82 85:20, 86:9, 86:11 84 43:7, 46:11 88 49:13, 49:17, 50:11 <hr/> 9 <hr/> 904 7:6, 8:1, 63:16, 64:7, 64:18, 64:22, 65:7, 77:10, 80:5, 81:9, 81:14, 82:10, 94:22, 95:3, 108:17, 131:5, 139:11, 153:2,
---	---	--	--

153:5, 153:10,
153:21, 156:9,
204:13, 205:22,
215:5, 215:13

93

61:19, 61:22

95

27:17, 32:11,
32:14, 33:2,
33:3, 35:15,
41:1, 51:6,
53:21, 54:1,
54:10, 59:6,
61:6, 61:14,
61:15, 72:18,
159:9

972.550

3:22

972.722

3:15

98

37:11, 37:12,
37:19, 38:2,
38:11, 38:15,
38:20, 40:9,
40:13, 69:22,
70:2, 70:14