

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3 RESMED CORP,)CASE IPR2025-00158
4 PETITIONER,)U.S. PATENT NO. 11,690,512
5 V.)
6 CLEVELAND MEDICAL)MOBILE VIDEOCONFERENCE
7 DEVICES, INC.,)DEPOSITION OF
8 PATENT OWNER.)SANDEEP CHATTERJEE, Ph.D.
)
)

9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

 MOBILE VIDEOCONFERENCE DEPOSITION OF SANDEEP
CHATTERJEE, Ph.D., taken remotely before Cheryl A.
Rooney, RPR, CRR, Online General Notary Public within
and for the State of Nebraska, beginning at 8:48 a.m.,
PST, on September 5th, 2025.

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

2 (Appearing Remotely)
3 THE WITNESS:
4 SANDEEP CHATTERJEE, Ph.D.

5 (Appearing Remotely with Witness)
6 FOR THE PETITIONER:

7 PAUL HASTINGS LLP
8 BY: LISA NGUYEN
9 1117 S. California Avenue
10 Palo Alto, CA 94304-1106
11 650.320.1800
12 lisanguyen@paulhastings.com

13 (Appearing Remotely)
14 FOR THE PATENT OWNER:
15
16 HERBER SMITH FREEHILLS KRAMER
17 BY: TIMOTHY LAYDEN
18 333 Twin Dolphin Drive
19 Suite 700
20 Redwood Shores, CA 94065
21 650.752.1700
22 timothy.layden@hsfkramer.com

23 AND

24 HERBER SMITH FREEHILLS KRAMER
25 BY: JEFFREY PRICE
JENNA FULLER
1177 Avenue of the Americas
New York, NY 10036
212.715.7502
jeffrey.price@hsfkramer.com
jenna.fuller@hsfkramer.com

1	I N D E X		
2	CASE CAPTION.....	PAGE	1
	APPEARANCES.....	PAGE	2
3	INDEX.....	PAGE	3
	TESTIMONY.....	PAGE	4
4	REPORTER CERTIFICATE.....	PAGE	87
5	E X A M I N A T I O N		
6	DIRECT EXAMINATION:		
7	BY MR. LAYDEN.....	PAGE	4
8	E X H I B I T S		
9	NO EXHIBITS MARKED		
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

1 (Whereupon, the following proceedings
2 were had, to-wit:)

3 SANDEEP CHATTERJEE, Ph.D.,
4 having been first duly sworn,
5 was examined and testified as follows:

6 DIRECT EXAMINATION

7 BY MR. LAYDEN:

8 Q. Dr. Chatterjee, good morning. Nice to
9 meet you.

10 A. Good morning. Nice meeting you as
11 well.

12 Q. If you look in the chat, I uploaded
13 Exhibit 1005, which is your declaration in this
14 matter going up against Patent Number
15 11,690,512. Do you have that?

16 A. I downloaded that but I can't seem to
17 find it.

18 Q. Do you have any hard copies with you
19 today?

20 A. I do. Okay, I found it now. I do
21 have hard copies of the declaration, the patent,
22 and a number of the prior art.

23 Q. Okay. Very good. And you can refer
24 to the hard copy documents as we go through
25 them, but I would just ask that if whatever

1 document we're discussing at that time, you
2 know, we don't go searching through, you know,
3 20 other references in the course of answering a
4 question. Is that fair?

5 A. I'm not sure I understand what you're
6 saying about searching through 20 other
7 references.

8 Q. If we're discussing a document and
9 part of your answer is discussing another or
10 brings in another reference, right, let's just
11 be clear that we're looking through that
12 reference, or what you're looking at in front of
13 you is clear on the record, since I can't
14 physically see what it is --

15 A. Okay, I understand. So if I'm looking
16 at something else, just identify that I'm
17 looking at a different reference?

18 Q. Yes.

19 A. I understand, okay.

20 Q. Okay. And are you and Ms. Nguyen in
21 the same room?

22 A. We are.

23 Q. And are you on the same monitor?

24 A. She has a laptop and I'm on a PC
25 monitor.

1 Q. Do you have any other windows open on
2 your screen other than this Zoom?

3 A. I have the Zoom open and I have the
4 File Explorer where I downloaded the declaration
5 that you sent into the chat.

6 Q. Okay. And could you look at
7 Exhibit 1005 for me, please?

8 A. Okay, I've opened it.

9 Q. And in your declaration do you have
10 all your opinions for this case rendered within
11 the confines of your declaration?

12 A. Based on the information that was
13 available for this IPR at the time that you
14 submitted it, yes.

15 Q. And how long did you take in drafting
16 your declaration?

17 A. I couldn't tell you. It's been -- I
18 think this was from mid to late last year. I
19 couldn't tell you how much time.

20 Q. And if you can turn to Paragraph 88 of
21 your declaration.

22 A. Paragraph what?

23 Q. Paragraph 88.

24 A. Okay, I'm there.

25 Q. This is pertaining to Ground 1, which

1 you have asserted the Ciulla reference and
2 Orbach reference in combination. Do you
3 recognize that?

4 A. I do see in Paragraph 87 where it is
5 referring to the Ciulla reference and the Orbach
6 reference.

7 Q. And in the multiple grounds that
8 you've asserted in this case, do all those
9 grounds include at least Ciulla and Orbach as
10 part of those combinations?

11 A. I don't recall off the top of my head.
12 It is a, I believe, 120-page declaration. I
13 believe that the grounds are pretty clearly laid
14 out, but I believe that it's correct. But
15 again, I believe the specific grounds are pretty
16 clearly laid out within the declaration.

17 Q. Okay. And in Paragraph 88 you state
18 that a person -- that in particular, a person of
19 ordinary skill in the art would have found it
20 obvious to modify the sleep diagnostic
21 acquisition system of Ciulla to transmit its
22 sensor data to a cellular phone or PDA to relay
23 that data to a remote computer to analyze the
24 data and diagnose sleep disorders as taught by
25 Orbach.

1 Does that represent the sum of your
2 opinion as far as how this combination would be
3 combined?

4 MS. NGUYEN: Objection; vague.

5 THE WITNESS: I'm not sure I
6 understand what you mean if that represents the
7 sum of my opinion. This is simply stating that
8 a person of ordinary skill would have found it
9 obvious to do this, but then there are
10 paragraphs and paragraphs and paragraphs of
11 analysis underpinning this conclusion.

12 BY MR. LAYDEN:

13 Q. Okay. And that conclusion for your
14 combination relies on the device from Ciulla,
15 and the cell phone and remote computer from
16 Orbach; is that correct?

17 A. It is as I've written: A person of
18 ordinary skill would have found it obvious to
19 modify the sleep diagnostic data acquisition
20 system of Ciulla to transmit its sensor data to
21 a cell phone or PDA to relay that data to a
22 remote computer to analyze the data and diagnose
23 sleep disorders as taught by Orbach.

24 So what I'm stating is that one of
25 ordinary skill would have found it obvious to

1 take the teaching from Orbach and incorporate
2 that teaching within the system of Ciulla.

3 Q. And the teaching you're pointing to in
4 Orbach in Paragraph 88 is the transmission of
5 sensor data to a cellular phone or PDA to relay
6 that data to a remote computer for analysis and
7 diagnosis; is that accurate?

8 A. I think it says to analyze the data
9 and diagnose sleep disorders as taught by
10 Orbach.

11 Q. But as far as the teachings from
12 Orbach, you're relying on the teaching of
13 transmission of sensor data to a cellular phone
14 or PDA; is that accurate?

15 A. I'm relying on the teaching from
16 Orbach to transmit the sensor data to a cell
17 phone or PDA which relays that information, that
18 data, to a remote computer.

19 Q. If you can turn to Paragraph 160 on
20 Page 83 of your report, please.

21 A. Okay, I'm at Paragraph 160.

22 Q. The first sentence of Paragraph 160
23 you state that: Orbach discloses the remote
24 server (a computer or second processor at one or
25 more sites remote to the first location)

1 receives sensor data from the mobile monitor.

2 Is that accurate?

3 A. Are you asking me whether you read it
4 accurately or whether the statement is accurate?

5 Q. Whether I read it correctly.

6 A. Can you read it one more time?

7 Q. Orbach discloses the remote server (a
8 computer or a second processor at one or more
9 sites remote to the first location) receives
10 sensor data from the mobile monitor.

11 A. You did read that first sentence in
12 Paragraph 160 correctly.

13 Q. Thank you. And if we go back to
14 Paragraph 88 where you state that the cellular
15 phone or PDA to relay that data to a remote
16 computer to analyze the data and diagnose sleep
17 disorders, is the remote computer you're
18 referencing in Paragraph 88 the remote server
19 you have in Paragraph 160?

20 A. Yes, the remote computer in
21 Paragraph 88, it is what I'm describing in 160.

22 Q. Thank you. If you could turn to
23 Page 89 of your declaration, Paragraph 173, and
24 let me know when you're there, please.

25 A. I'm there.

1 Q. That first sentence, it states:

2 Orbach discloses that the is transmitted for
3 display to the viewing station associated at the
4 remote server.

5 Do you see that statement?

6 A. I do.

7 Q. Can you help me out with what the typo
8 was in that sentence?

9 A. Yes. So I apologize. I did find that
10 there were some typos when I was going through
11 the declaration again.

12 Q. That's fair enough.

13 A. So I think it should be the sleep data
14 and the analysis.

15 Q. Well, then that first sentence should
16 read: Orbach discloses that the sleep data and
17 analysis is transmitted for display to the
18 viewing station associated at the remote server.

19 Would that be correct?

20 A. Yes. The gist of it is that the data
21 and the analysis performed by the server, it is
22 transmitted to the viewing station associated
23 with the remote server.

24 Q. Okay. And in that sentence can you
25 tell me what you mean when you say the viewing

1 station associated at the remote server?

2 A. I think that should be the viewing
3 station associated with the remote server. And
4 if you look at the next sentence it's stating:
5 Orbach discloses that "the remote server
6 associated with the viewing station". And it
7 continues on.

8 Q. If you can turn to Page 95 of your
9 declaration, Paragraph 188, where you're
10 providing your analysis for dependent claims 4,
11 11, and 15. You state that: Orbach discloses
12 that the remote server is a computer with
13 wireless capabilities (communication station).

14 Is it accurate to say that in
15 Paragraph 188 you're associating the remote
16 server with a communication station?

17 A. I'm stating that one of ordinary skill
18 would understand that Orbach's remote server
19 would meet the communication station as
20 described in the '512 patent.

21 Q. Thank you. If you can turn to
22 Page 16, Section 5 is where you have your
23 technical background and state of the art. If
24 you let me know when you're there, please.

25 A. Okay, I'm there.

1 Q. And in the first subsection A, mobile
2 computing, Paragraphs 25 to 31, you describe
3 various cell phones that were available, in
4 particular the Nokia 9000 communicator, as well
5 as the Palm from the late '90s as referenced in
6 Paragraph 30, and the first BlackBerry
7 smartphone. Are there any other phones
8 referenced in this section that I missed?

9 A. I think this section is essentially
10 providing a very brief summary of what one of
11 ordinary skill would have known. This is not
12 meant to be an exhaustive list, but it's meant
13 to briefly describe what one of ordinary skill
14 would have known, what the trends that the
15 industries were going towards. Like I talk
16 about in other sections within this technical
17 background and state of the art section, there
18 was a trend for wireless and mobile sensors and
19 communications with mobile devices such as
20 these. So it's not meant to be an exhaustive
21 list but simply representative -- a brief
22 representative summary.

23 Q. Would the mobile computing
24 technologies referenced in subsection A be
25 representative of the cell phone POSITA would

1 use in Orbach?

2 MS. NGUYEN: Objection; vague.

3 THE WITNESS: What do you mean by
4 a POSITA would use in Orbach? Orbach teaches
5 certain things, which is having data, the sensor
6 data be transmitted to certain types of devices,
7 which can in turn transmit that to a remote
8 server, remote computer. I believe a POSITA
9 would be able to implement the teachings of
10 Orbach using different types of technologies and
11 systems.

12 BY MR. LAYDEN:

13 Q. And one of the teachings of Orbach as
14 you stated was the use of a cell phone in the
15 transmission of the mobile computing
16 technologies listed that you have stated in
17 Paragraphs 25 to 31 be representative of that
18 cell phone technology taught by Orbach?

19 A. Well, I think Orbach says cell phone
20 and gives other examples like PDA as well. And
21 so I have given different, like I said,
22 exemplary devices that POSITA would have known
23 about well before the priority date for the
24 '512.

25 Q. And on Page 28, continuing through

1 your technology background subsection D, you
2 have your basis for computing. Do you see that?

3 A. I do.

4 Q. Then you have subsection 1 as well as
5 subsection 2 under that, and subsection 2 begins
6 on Page 30, Paragraph 51. Do you see that?

7 A. Did you say subsection 2 starts --

8 Q. On Page 30, Paragraph 51.

9 A. Yes, I do see that.

10 Q. Okay. In Paragraph 51 you state that,
11 you know, at least as early as 2003, sensor
12 nodes were being envisioned as medical devices
13 that could be implanted within or reside on the
14 body and perform tasks currently done with
15 additional cost or inconvenience. Then you have
16 a citation: See generally Exhibit 1064, chapter
17 6, and Exhibit 1065. Do you see that?

18 A. I do.

19 Q. The next sentence you provide a few
20 examples of what I believe you would describe as
21 the sensor nodes being envisioned as medical
22 devices, and you list four separate examples.
23 Do you see that?

24 A. So I'm not sure -- you said something
25 like sensory nodes being listed as medical

1 devices. I didn't see where you're reading that
2 from.

3 Q. After the first sentence you say "A
4 few examples include", and then you provide
5 glucose monitors for diabetic patients,
6 artificial retinal and cortical implants for the
7 visually impaired, heart monitors, and vital
8 statistics repository.

9 A. I see where you're reading from, yes.

10 Q. And Paragraph 52 you state: For
11 example, a glucose monitor. And then you
12 provide a summary of what glucose monitors could
13 do. Do you see that?

14 A. I think it's talking more about the
15 systems that were known at the relevant time
16 period.

17 Q. Okay. At the end of Paragraph 52 you
18 have a citation or an Idem. Do you see that?

19 A. I do.

20 Q. Is that citation referencing your
21 citations to Exhibits 1064 and 1065?

22 A. I believe so. I believe it's -- yes,
23 it's referring back to 1064 -- I think it's
24 1064, but I couldn't be sure. It's not the ones
25 in parentheses. Those are referenced within

1 either 1064 or 1065.

2 Q. Okay. If you turn the page to
3 Page 32, Paragraph 55, begins your subsection in
4 your technology background on wired and wireless
5 sensors. Do you see that?

6 A. I do.

7 Q. And the third full sentence in that
8 paragraph, you state: "Additionally, it was
9 well known to transmit data using wireless
10 protocols to a remote Internet site, e.g., for
11 later access of the data."

12 Do you see that?

13 A. I do.

14 Q. Then you provide an example from the
15 Quy reference, Exhibit 1067. And there you
16 state that a patient can connect to a specific
17 Internet site and a software program, resident
18 on a remote server located on the Internet,
19 downloads an interactive user interface for that
20 patient, and an application for the measurement
21 of physiological data.

22 Do you see that?

23 A. I do.

24 Q. The software may also be downloaded to
25 a wireless web device, WWD, from a personal

1 computer via a synchronization operation in a
2 known fashion. Do you see that?

3 A. I do.

4 Q. What was the conventional
5 synchronization operation known to a person of
6 ordinary skill in the art for downloading
7 software onto a cell phone?

8 MR. LAYDEN: Objection; vague.

9 THE WITNESS: Are you talking
10 about what is being referenced in what you just
11 read from Paragraph 55, which is quoting from a
12 different reference?

13 BY MR. LAYDEN:

14 Q. Yes. I'm asking you for your
15 understanding as a person of ordinary skill in
16 the art of the known synchronization operations
17 for downloading software to a cell phone.

18 A. I'm still confused by your question,
19 because it seems like you're asking me outside
20 of the quote that I've set forth, but then you
21 seem to be bringing me back to that quote. So
22 I'm confused if you're asking me about the quote
23 or if you're asking me about something else.

24 Q. In 2007, what was the conventional way
25 of downloading software to a cell phone?

1 A. I think at that time there were
2 multiple means by which software or any type of
3 resource could be downloaded onto some kind of
4 mobile device. One would have been directly
5 downloading it from some kind of a server.
6 Another one, which seems to be referenced here,
7 is connecting it to a tether connected to a PC.
8 So there were a number of ways that were known
9 at the relevant time, and which one of ordinary
10 skill would have readily known and understood.

11 BY MR. LAYDEN:

12 Q. Are you able to provide a year when
13 the first system that wirelessly transmitted
14 data to a remote server used as an intermediary
15 in that transmission a device entirely
16 controlled by a patient and not a medical
17 professional?

18 A. Again, I don't think I'm understanding
19 your question. But to the extent your question
20 was a system that allowed, for example, sensor
21 data, specific sensor data to go to, for
22 example, a cell phone or PDA, which in turn
23 could send that to some kind of a server, I
24 think we could look at the priority date on the
25 Orbach reference for that. I'm not saying that

1 that is the first one, but that is one that is
2 using a cell phone to transmit that sensor data
3 to a remote server or a computer.

4 Q. Are you aware of when the first system
5 entered the market for use that transmitted
6 patient data from a medical device to the
7 patient's cell phone or PDA to then be forwarded
8 to a remote server?

9 A. Can you show me in my declaration
10 where I'm opining on this? Because I'm not
11 really understanding how that's related to the
12 opinions that are set forth in my declaration.

13 Q. Well, in Paragraph 55 you state that
14 it was well known to transmit data using
15 wireless protocols to remote Internet site for
16 later access. So I'm asking if you understand
17 whether or not it was well known to transmit
18 data using wireless protocols to a remote
19 Internet site by way of a patient's cell phone
20 or PDA?

21 A. And I think I answered for you that as
22 an example, and I'm not saying that that's the
23 first reference or the first system, but as an
24 example, the Orbach patent discloses to one of
25 ordinary skill the use of a cell phone or PDA or

1 some other kind of device to transmit sensor
2 data to a remote server.

3 Q. If you could turn to Page 41 of your
4 declaration, please. In Section 9, Subsection
5 A, you have your Ground 1 heading: Ciulla in
6 view of Orbach renders obvious Claims 1 through
7 6, 8 through 17 and 19 through 20. And just
8 beneath that you begin your analysis on the
9 motivation to combine those two references.

10 Do you see that?

11 A. I do.

12 Q. You state that a -- in Paragraph 70:
13 A person of ordinary skill in the art would have
14 been motivated to improve the wearable sleep
15 acquisition system taught by Ciulla to transmit
16 its sensor data to a remote computer for
17 diagnosis as taught by Orbach.

18 What is it in Ciulla that needed
19 improving?

20 A. Again, I will state like I did earlier
21 that this is a 120-plus page declaration. I
22 haven't memorized everything. But just off the
23 top of my head, I believe that in the system of
24 Ciulla it's talking about where it's transmitted
25 to the next room, I believe, or something to

1 that effect. And so one of ordinary skill would
2 have immediately understood that the teachings
3 of Orbach would improve the system of Ciulla to
4 allow, for example, multiple people, multiple,
5 for example, physicians to access it. It would
6 allow the physician to access it from different
7 locations.

8 So there's a -- again, I'm just going
9 from off the top of my head, and all of these
10 opinions and a lot more detail, and the
11 motivations in a lot more detail are set forth
12 within the body of my declaration. But there
13 are a multitude of reasons that one of ordinary
14 skill would immediately understand from the
15 teachings of Orbach which would be applicable to
16 Ciulla and which would improve the system of
17 Ciulla and offer a multitude of benefits as well
18 as efficiencies from a technical perspective. I
19 believe I touch on things like power and
20 efficient transmission within my declaration as
21 well.

22 Q. And I believe what you're discussing
23 as far as the benefits and applications begins
24 in your declaration at Paragraph 74 and
25 continues through to Paragraph 81; is that

1 accurate?

2 A. I don't think so. Like even if you
3 look at, for example, Paragraph 72, I'm talking
4 about the general market trend. So there's
5 these reasons and motivation for one of ordinary
6 skill to incorporate the teachings from Orbach
7 into the system of Ciulla, I believe it's put
8 throughout my declaration, and I think I've
9 pointed out a number of them for you right now,
10 and I think, for example, even in 72 I'm talking
11 about there is a general market trend toward
12 doing these -- taking these systems and making
13 them available as smart systems and connected
14 to, for example, Internet servers.

15 And so these motivations are not
16 starting at -- I believe you identified
17 Paragraph 75. I believe it's even before that.
18 And even the items that we talked about in the
19 technology background section as well. So
20 it's -- I believe it's very clear from reading
21 my declaration why one of ordinary skill would
22 have had a number, significant number of reasons
23 and motivation to incorporate those teachings
24 from Orbach into the system of Ciulla.

25 Q. I'm looking at Paragraph 72. Is it

1 accurate to say your opinion there is that there
2 was a general market trend towards the Internet
3 of Things in connecting various devices to the
4 Internet?

5 A. I do talk about the Internet of
6 Things. But I think the point is that there was
7 a general trend in making all kinds of devices.
8 I'm not limited to medical devices. I'm talking
9 about all kinds of devices within people's
10 lives, within their homes, within their offices,
11 within hospitals, within clinics, within
12 schools.

13 There is a general trend to making
14 these systems intelligent and making -- and
15 having access to data from those devices
16 available, for example, through the Internet and
17 through remote servers. That was like a general
18 trend. There was a lot of excitement in the
19 industry and the market around these kind of
20 opportunities. And so that's one of the key
21 points I'm trying to get across in Paragraph 72.

22 Q. Okay. And how would a POSITA connect
23 a device to the Internet to satisfy that general
24 trend you contend in Paragraph 72?

25 A. How would a POSITA do --

1 Q. How would a POSITA, a person of
2 ordinary skill in the art, connect an ordinarily
3 dumb device to the Internet?

4 A. Well, there are many ways. For
5 example, my Ph.D. dissertation at MIT was
6 related to this space on how do you take any
7 kind of dumb device, whether it's your
8 television, your refrigerator, your children's
9 toys, and how do you add the intelligence and
10 the networking capability to it.

11 And as an example, what my Ph.D.
12 dissertation did was show that you can take
13 off-the-shelf components and then on top of that
14 the cost and the size of these components had
15 come down significantly. And so it was very
16 readily possible to incorporate microprocessors,
17 microcontrollers to incorporate wireless
18 transceivers into these devices, and then enable
19 certain types of data to be transmitted, as well
20 as to control these devices which had become
21 smart. And my dissertation -- I believe I began
22 working on this in '97. So this significantly
23 pre-dates the time period that we're talking
24 about.

25 And then with regards to we've talked

1 about Orbach, which also pre-dates the earliest
2 priority date of the '512, and that also talks
3 about a particular mechanism by which the data
4 can be transmitted to the cell phone or PDA and
5 then transmitted to the server.

6 So one of ordinary skill would have
7 readily known and understood that there are a
8 multitude of ways by which this could have been
9 done, and Orbach provides a very clean, clear
10 implementation that one of ordinary skill would
11 have read and appreciated could be easily
12 applied to the system of Ciulla.

13 Q. And in the early 2000s, what were the
14 ways these devices would have connected to the
15 Internet?

16 A. So are you talking about -- like I
17 think I'm a little bit confused, given I think I
18 tried to answer your question, like we've talked
19 about Orbach gives a mechanism by which you can
20 communicate, transmit data to a cell phone or
21 PDA which in turn can communicate with a remote
22 server. So are you asking me for more examples?
23 I'm a little bit confused by the question.

24 Q. Yeah. Like what were the connectivity
25 ways implemented in the early 2000s to bring

1 what we described as dumb devices onto the
2 Internet?

3 A. I think what I just explained to you
4 that if you have a, quote-unquote, dumb device,
5 one of ordinary skill would have known, and this
6 is precisely what was being done even before the
7 early 2000s, is putting some kind of a
8 processor, software, as well as, for example,
9 wireless transceivers into these devices and
10 then once you have these building blocks, you
11 are able to develop software that can take, for
12 example, relevant data and then transmit it to
13 different locations.

14 For example, some of the devices get
15 transmit to other devices. For example, your TV
16 could transmit information to your fridge. And
17 then there could be some analysis or there could
18 be some data that can be helpful to, for
19 example, your fridge.

20 It was well known to one of ordinary
21 skill that you can communicate with mobile
22 devices, for example, your cell phone or PDA.
23 And that's what Orbach describes and discloses.

24 And so there were a multitude of ways
25 that a POSITA would have known, even prior ways,

1 significantly earlier than the earliest priority
2 date of the earliest '512 patent that there were
3 different ways of doing it, and Orbach discloses
4 one such way.

5 Q. In looking at Paragraph 73, there you
6 describe some of the teachings of Ciulla and
7 state that it would be ready to implement into
8 an intelligent system. Do you see that
9 paragraph?

10 A. I do.

11 Q. And then you go on to say: In
12 particular, Ciulla taught that its data
13 acquisition system has "a clinical trial version
14 designed to transmit the multiple sensors'
15 outputs wirelessly" -- and then you have in
16 parentheses -- "(RF, BlueTooth, WAN, LAN, IT
17 Ethernet Modem or other)" and "incorporates a
18 wireless receiver, allowing the researcher to
19 observe the patient's responses in a montage
20 display format on the receiving computer's
21 screen."

22 And you get those quotations from
23 Exhibit 1007, which is the Ciulla reference. Is
24 that accurate?

25 A. Yes, those quotes should be from the

1 Ciulla reference.

2 Q. So Ciulla does teach that its device
3 does have connectivity means as a part of it; is
4 that accurate to say?

5 A. Ciulla teaches a clinical trial
6 version, which allows it to have somebody, for
7 example, I believe it says in the next room or
8 some language like that. And so like I
9 explained to you earlier in reading the system
10 of Ciulla and especially this clinical trial
11 version, it would have been another motivation
12 by one of ordinary skill to incorporate the
13 teachings of Orbach to improve upon the
14 communications capabilities that are taught by
15 the clinical trial version of the Ciulla system
16 to incorporate the mobile phone or PDA and
17 communicate it with a remote server, and as I've
18 mentioned to you earlier and as set forth
19 clearly in my declaration, one of ordinary skill
20 would have understood that there was a multitude
21 of benefits that that system would have gotten
22 by incorporating the teachings of Orbach into
23 the system of Ciulla.

24 Q. Looking at Paragraph 73, you then go
25 on to state that Ciulla taught that it would

1 have been beneficial to transmit the sleep data
2 to a remote computer, disclose that the device's
3 microprocessor can "directly transmit analysis
4 reports by IT to the therapist's computer and/or
5 company's mainframe for further analysis,
6 research or documentation."

7 And that quote also comes from Ciulla,
8 Paragraph 0214. In that statement would the
9 company's mainframe be a server?

10 A. A mainframe could be considered a type
11 of server, but again, the point is that Ciulla
12 is teaching that you can send this --
13 communicate the data from the system of Ciulla,
14 and one of ordinary skill would have understood
15 that there are a multitude of benefits in
16 incorporating the teachings of Orbach, which
17 uses a cell phone or PDA, which in turn relays
18 or transmits the data to a remote computer.

19 And I've explained to you that there
20 are multiple benefits to doing so, including
21 with regards to power, with transmission
22 efficiency, flexibility in usage, like I
23 mentioned, people would be able to access it no
24 matter where they are.

25 So regardless of the fact that Ciulla

1 teaches this communication, as I've explained
2 that even though it teaches that, that would
3 have been a motivation, in addition to other
4 reasons that are set forth in my declaration,
5 for one of ordinary skill to incorporate the
6 teachings of Orbach into the system of Ciulla.

7 Q. And then going through on
8 Paragraph 45, I believe you state that "A person
9 of ordinary skill in the art trying to improve
10 Ciulla would have naturally looked at design
11 options that would have taught how to implement
12 a data acquisition device into a networked data
13 system like Orbach."

14 Would transmission in Ciulla to the
15 company's mainframe system implement Ciulla --
16 Ciulla's data acquisition device into a network
17 system?

18 A. I'm a little bit confused. I believe
19 you're reading from Paragraph 74. I think you
20 may have stated 45.

21 Q. I read the first sentence on
22 Paragraph 74. And my question is, would
23 Ciulla's transmission from its data acquisition
24 device into the company's mainframe system using
25 either RF, bluetooth, WAN, LAN, IT, ethernet

1 modem or other as stated by Ciulla, be an
2 implementation of the data acquisition device
3 into a networked system?

4 A. I'm not sure I understand your
5 question. I'm saying here that a person of
6 ordinary skill in the art trying to improve
7 Ciulla would have naturally looked at design
8 options that would have taught how to implement
9 a data acquisition device into a networked data
10 system like Orbach.

11 So I'm saying that Ciulla teaches
12 communication of the data, but Ciulla doesn't go
13 into some of the implementation details. And so
14 one of ordinary skill would have naturally
15 looked at Orbach as providing those
16 implementation details. And as I've explained,
17 one of ordinary skill would have understood
18 there are a multitude of benefits to using the
19 teachings of Orbach.

20 Q. But my question is, would Ciulla's
21 wireless transmission of data into a therapist's
22 computer or the company's mainframe system be an
23 implementation of a data acquisition device in a
24 networked data system?

25 A. So I think what I'm trying to explain

1 is that Ciulla teaches that in it's clinical
2 trial version data can be transmitted to the
3 therapist's computer or the company's mainframe
4 system, but Ciulla doesn't provide the
5 implementation details on how that would be
6 implemented.

7 What I explained to you is that one of
8 ordinary skill would have understood that there
9 are different ways of implementing such a
10 system, and Orbach provides details, the
11 implementation details that one of ordinary
12 skill would have readily understood, readily
13 appreciated, and would have understood that
14 there are a number of benefits in implementing
15 Ciulla's system using the implementation details
16 as taught and set forth by Orbach.

17 Q. Do you agree that a company's
18 mainframe system would equate to a networked
19 data system?

20 A. I'm not really -- I don't think just a
21 mainframe -- the way you've asked your question,
22 I'm taking your question outside of the scope of
23 the opinions and the analysis that I've set
24 forth, and outside the scope of Ciulla and the
25 '512 patent. But I think the way you asked your

1 question with regards to simply a mainframe, I
2 don't think just a mainframe on its own would be
3 a networked data system, if I understood your
4 question.

5 Q. What's your understanding of a
6 mainframe system as used in Ciulla?

7 A. Well, I think a mainframe system is --
8 they're called mainframes because they are these
9 large computers that could do a lot of
10 processing, and they were called mainframes, and
11 they continue to be called mainframes.

12 Q. And are mainframe computer systems
13 accessed via a network?

14 A. Well, I think your question that I was
15 answering was just a mainframe. And so I don't
16 think just a mainframe that doesn't have any
17 network connectivity connected to it is a
18 networked data system by definition because it
19 doesn't have any network connectivity. If it's
20 an isolated computer just sitting there on its
21 own, I don't believe that's a networked data
22 system.

23 Q. What about a mainframe system that is
24 able to directly receive reports from a data
25 acquisition device?

1 A. I would need more -- again, I
2 understand your question to be outside of the
3 opinions I've set forth, the Ciulla and Orbach
4 references, and the '512. But I would need to
5 understand more information about this
6 hypothetical that you're asking me, like what is
7 the data acquisition system, how does it
8 operate, how does it interface with this
9 mainframe. There's a lot of questions I would
10 need to have answered.

11 Q. Okay. I'll see if I can refine. So
12 the data acquisition of Ciulla that directly
13 transmits its reports either by IT ethernet
14 modem or F-cellular capability, or any other to
15 a company's mainframe system, would that be a
16 networked data system?

17 A. I think it seems like you're saying
18 that there is some communication between the
19 data acquisition system and the mainframe. So
20 again, I don't understand the relevance of this
21 to the opinions I've set forth. But I think
22 that could be considered some kind of a
23 communication system.

24 But again, the point that I was making
25 is that the Ciulla reference talks about

1 transmitting certain data to certain computers,
2 but doesn't provide implementation details. And
3 Orbach provides implementation details on how
4 such a system like Ciulla's clinical trial
5 version of its system could be implemented.

6 And as I mentioned, one of ordinary
7 skill would have readily understood the
8 multitude of benefits, including power
9 efficiencies, transmission efficiencies,
10 benefits for use cases, and who can access the
11 data and the reports, from where they can access
12 it. And so that's really the point that I'm
13 trying to make is that one of ordinary skill
14 would have readily understood the implementation
15 details.

16 And as an example, since Ciulla
17 doesn't provide some of the implementation
18 details, one of ordinary skill would have looked
19 to a system like Orbach for those details, and
20 there would be a lot of benefits to using the
21 system that Orbach teaches.

22 Q. Okay. Just to be clear, in
23 Paragraph 73, going through that you state that
24 Ciulla taught that its data acquisition system
25 acquisition device, its clinical trial version,

1 is designed to transmit multiple sensor outputs
2 wirelessly using radiofrequency, bluetooth, wide
3 area network, local area network, IT ethernet
4 modem or other. Is that accurate?

5 A. I think you read from a quote from
6 Ciulla.

7 Q. I read from a quote from Paragraph 73
8 of your report that you pulled from Ciulla
9 saying that it teaches its data acquisition
10 device wirelessly outputs the multiple sensor
11 information using a variety of transmission
12 means. You do have that in Paragraph 73; is
13 that accurate?

14 A. I do have, it appears to be, two or
15 three quotes from Ciulla in Paragraph 73.

16 Q. And then the next sentence you state
17 that Ciulla taught it would have been beneficial
18 to transmit the sleep data to a remote computer,
19 right, and discloses that the device's
20 microprocessor, Ciulla's data acquisition
21 device, can directly transmit reports to, among
22 other places, a company's mainframe system. You
23 do have that in the report; correct?

24 A. That is another quote from Ciulla,
25 yes.

1 Q. Thank you. And if we can look at
2 Paragraph 75, you reference the benefits. That
3 first sentence in Paragraph 75 where you state
4 the industry recognized that IoT systems provide
5 core benefits, and then you provide a list of
6 automation, real-time access to information,
7 data collection, improved efficiency, and cost
8 reduction. Are those the benefits you were
9 referring to earlier?

10 A. I think these are some of the
11 benefits. I do have other benefits throughout.

12 Q. You have other benefits outlined in
13 your declaration, and if so, can you point me to
14 them?

15 A. Well, even if you look at the next
16 paragraph in 76, I'm talking about in more
17 detail with respect to automation.
18 Paragraph 77, I'm talking about with respect to
19 realtime access to information. 78, I'm talking
20 about with respect to data collection. 79, I'm
21 talking about with respect to efficiency and
22 cost reduction.

23 And so there is a lot of detailed
24 analysis set forth herein, and I've explained a
25 number of that already to you here today, this

1 morning, that one of ordinary skill would have
2 readily understood these benefits, both
3 technical benefits as well as use case benefits,
4 to incorporating the teachings of Orbach into
5 the system of Ciulla.

6 Q. Do you list any other benefits or
7 discuss any other benefits a POSITA would have
8 recognized, outside of Paragraphs 75 to 79 that
9 you just described?

10 A. I think we've talked about other
11 benefits, like in Paragraph 72 where we're
12 talking about there is a general market trend
13 toward these kind of implementations.
14 Previously in the tech background section where
15 I talked about what was happening in the
16 industry and why it was happening and what the
17 benefits of those were. And so there are a
18 number of benefits that are set forth within my
19 declaration. And on top of that I've summarized
20 a number of them for you this morning as well.

21 Q. And so Paragraph 75 begins with the
22 industry recognized that such IoT systems,
23 Internet of Things systems, provided core
24 benefits. And the first one you have listed
25 there is automation, which you referenced in

1 more detail in Paragraph 76. There you say that
2 with respect to automation, patients could
3 receive instant software updates if new
4 algorithms are developed.

5 So with regards to automation, your
6 opinion is that the benefit of automation would
7 be to receive updates of new algorithms; is that
8 accurate?

9 A. I think what I'm saying in 76 is these
10 are examples of benefits and these are examples
11 of, for example, automation benefits.

12 Q. And the example you provide for
13 automation benefits is instant software updates;
14 is that accurate to say?

15 A. Well, it doesn't end at instant
16 software updates. It states: "Patients could
17 receive instant software updates if new
18 algorithms are developed to better identify and
19 treat sleep disorders." And then I continue on
20 by saying: "Such updates are typically
21 difficult to provide to stand-alone patient
22 devices where the patient may need to go to a
23 facility to update or purchase a new device."

24 Q. Thank you. And the second point of
25 information on your list in Paragraph 75 is

1 realtime access to information, which you've
2 expanded upon in Paragraph 77. In looking at
3 the second full sentence, you say that such
4 realtime access could provide physicians with
5 more data for diagnosis. Do you see that?

6 A. I do.

7 Q. Then you go on to state that it could
8 also help identify medical emergencies, for
9 example, if a patient stopped breathing all
10 together. So is what you're saying here that
11 the realtime access to information, the benefit
12 that's derived from that, is providing patients
13 with more data for diagnosis and to help
14 identify medical emergencies?

15 A. Again, I think these are examples and
16 like I've explained even for that first example
17 where I'm talking about "Such real-time access
18 could provide physicians with more data for
19 diagnoses", what I'm saying there is what I
20 explained to you earlier is that it's going
21 to -- for example, a remote server, a remote
22 computer where multiple people, for example,
23 multiple doctors may be able to access that.
24 And so that can provide, as an example, access
25 to more data, as well. So it's not siloed.

1 The system of Ciulla, what one of
2 ordinary skill would have understood that by
3 incorporating the teachings of Orbach, it would
4 remove any silos of data that may be there in
5 the Ciulla clinical trial version and allow data
6 to be accessed by more people and data to be
7 accessed from anywhere. And so there are
8 benefits to doing so. Obviously your physician
9 can access the data even when he or she is at
10 home.

11 And so here I'm saying that by having
12 the system, the implementation of Orbach, one of
13 those examples, one of the benefits that one of
14 ordinary skill would understand is that there
15 would be more data that could be used for
16 diagnoses. So instead of having the silos, the
17 system of Orbach would allow more data to be
18 available and it would allow more data for
19 diagnoses.

20 Q. Is it your opinion that Orbach's
21 teaching of a remote server provides that data
22 access?

23 A. I believe one of ordinary skill would
24 understand from the Orbach reference that like
25 I've explained to you in my declaration, as well

1 as here this morning, that there are a multitude
2 of benefits, both technological benefits as well
3 as use case benefits, and that is one of the --
4 one example of the benefits that one of ordinary
5 skill would understand from the Orbach
6 reference.

7 Q. And just to be clear, the benefit that
8 we're talking about, or that you had referenced,
9 is the ability to access data. What my question
10 is, is it your opinion that Orbach's teaching of
11 a remote server provides the benefit of that
12 access?

13 A. I'm not sure I understand your
14 question, but in terms of if you look at
15 Paragraph 77, I am, I believe, citing from
16 Orbach, and it is talking about realtime access
17 in Orbach. And so I'm not sure I understand
18 your question.

19 Q. That's fine.

20 A. Can we take a restroom break whenever
21 is a good time for you?

22 Q. Does five minutes work?

23 A. Sure.

24 Q. Okay. We'll break in five minutes. I
25 have a couple more questions, then we'll break

1 for a little bit.

2 A. Sure.

3 Q. In Paragraph 78 you tie back your data
4 collection benefit referenced in Paragraph 75
5 and expand on that. And there you say: "With
6 respect to data collection the ability to build
7 large data sets of patient data would allow
8 physicians to analyze the data to identify
9 patterns and trends in a way that the analysis
10 of individual patient data cannot."

11 In regards to the data collection you
12 have referenced here and the ability to build
13 large data sets, would those large data sets be
14 built on Orbach's remote server?

15 A. What I'm stating there is that one of
16 ordinary skill would have readily understood
17 that the teaching of Orbach would enable or
18 would have the benefit of allowing -- like I was
19 mentioning, to remove the silos and really to
20 have data from a variety of patients and
21 locations, and that would readily be understood
22 to be a benefit.

23 Q. Then going through Paragraph 79 you
24 state that with respect to efficiency and cost
25 reduction, the ability for physicians to analyze

1 data remotely and evaluate data at their own
2 convenience without expending the cost and
3 resources of meeting with the patient in person.
4 Is it your opinion there that the efficiency and
5 cost reduction is derived from the physician's
6 ability to analyze data at their convenience?

7 A. What I'm saying there is that again,
8 the system or the teachings of Orbach would
9 enable, and one of ordinary skill would have
10 understood, that the teaching of Orbach would
11 enable the efficiency and cost reduction that is
12 explained there.

13 And so, for example, as we know in
14 Ciulla, it's talking about that the computer can
15 be in the next room. Whereas if the doctor is
16 at a conference or if the doctor is at his or
17 her home, he or she would not be able to access
18 that information. Whereas one of ordinary skill
19 would understand, would readily understand that
20 in the teaching of Orbach the physician or
21 others involved would be able to conveniently
22 access at their own convenience without having
23 to go into, for example, the clinic or the
24 hospital or wherever they would be able to
25 access this information.

1 And again, these are enabled by
2 Orbach, and that's the point that I'm making,
3 that the implementation details in Orbach, they
4 provide the implementation details that one of
5 ordinary skill would have been looking for, and
6 in providing those implementation details, one
7 of ordinary skill would have readily understood
8 that there are a multitude of benefits, and this
9 is -- or these are a number of examples of
10 benefits that one of ordinary skill would have
11 readily understood.

12 MR. LAYDEN: Thank you. We can
13 take a break now.

14 THE WITNESS: Ten minutes.

15 MR. LAYDEN: Works for me.

16 (10:06 a.m. - Recess taken.)

17

18

19

20

21

22

23

24

25

1 (At 10:15 a.m., with parties present
2 as before, the following proceedings were had,
3 to-wit:)

4 BY MR. LAYDEN:

5 Q. Dr. Chatterjee, in the chat I just
6 dropped Exhibit 1007, which is the Ciulla
7 reference. If you could open that up or if you
8 have it before you.

9 A. Okay. I downloaded it.

10 Q. If you can turn to Page 23 of the
11 reference.

12 A. Okay.

13 Q. Paragraph 0125. And in that
14 paragraph, the third full sentence, it's
15 discussing a data recorder that could either be
16 hardwired to the main back module through a jack
17 connection when data would be downloaded, or
18 alternately, could be wirelessly connected to
19 the main back module. So it could be reported
20 in realtime and displayed in realtime at a
21 location spatially removed from the main back
22 module, such as in the next room -- such as the
23 room next door from the room in which the
24 patient is sleeping. Do you see that sentence?

25 A. I do.

1 Q. Is that sentence describing realtime
2 monitoring of a patient by a doctor?

3 A. So it's talking about how you can have
4 a physician or somebody involved in the
5 patient's care be, for example, in a room next
6 door from the room in which the patient is
7 sleeping, and this is precisely what we were
8 talking about prior to the break, that one of
9 ordinary skill would understand the significant
10 benefits of Orbach, and it would not be limited
11 to, for example, being the room next door to
12 where the patient is, and it would allow
13 realtime access at the -- in a much more
14 efficient and convenient way, for example, like
15 I was telling you, from the physician's home or
16 from some other location as well.

17 Q. Back to my question. This sentence,
18 does it or does it not describe realtime
19 monitoring of a patient by a doctor?

20 A. Well, I'm not sure what you mean by
21 realtime monitoring, but it is saying that the
22 data could be reported in realtime and displayed
23 in realtime at a location spatially removed from
24 the main back module, such as in the room next
25 door from the room in which the patient is

1 sleeping. And that's precisely what I'm
2 stating, is that the Ciulla reference in its
3 clinical trial example, it's talking about
4 transmitting the data, but does not provide the
5 implementation details. And even the references
6 to, for example, bluetooth, one of ordinary
7 skill would understand that bluetooth is -- has
8 limits on its range.

9 So for example, the physician or the
10 nurse or the doctor could not be two miles away
11 or a hundred miles away or a thousand miles
12 away. And that's precisely what Orbach
13 provides. Orbach provides that implementation
14 details, consistent with the teachings in Ciulla
15 that one of ordinary skill would readily
16 understand, offers a multitude of benefits, both
17 from technological benefits, as well as use case
18 benefits, and that's why, as I've set forth in
19 my declaration, one of ordinary skill would be
20 highly motivated and have a multitude of reasons
21 and benefits to incorporate the teaching from
22 Orbach into the system of Ciulla.

23 Q. But in Paragraph 125 of Ciulla the
24 physician does have realtime access to patient
25 information; is that accurate?

1 A. What it's teaching is what I just
2 explained to you that in order to -- in order
3 for the physician or doctor or whoever, they
4 would have to get into a car, drive to the
5 location where the patient is, or a location
6 very close to where the patient is. So there is
7 a lot of inconveniences that are addressed by
8 the teaching of Orbach. There are a lot of
9 efficiencies that are addressed by the teaching
10 of Orbach. There are a lot of power benefits
11 that are addressed by the teaching of Orbach.

12 So what I'm stating and what I have
13 stated in my declaration is that Orbach provides
14 the implementation details consistent with the
15 teachings in Ciulla, and one of ordinary skill
16 would have been highly motivated to incorporate
17 the teachings of Orbach into the system of
18 Ciulla because it does address these benefits
19 and use cases, for example, convenience, and
20 these would be enormous benefits, and one of
21 ordinary skill would have understood these
22 benefits and therefore would have reason to
23 combine the teachings of Orbach into the system
24 of Ciulla.

25 Q. Very good. If you could turn to

1 Paragraph 0230 on Page 32.

2 A. On Page 32, did you say?

3 Q. On Page 32, Paragraph 0230. There the
4 first sentence states that: "The system is
5 designed to have its digital storage on a SMART
6 card and/or uploaded wirelessly through a port,
7 or any appropriate mode desired."

8 And then that paragraph continues to
9 the last sentence where it states: "The system
10 is also designed to permit total monitoring,
11 control, and analyses to be performed in a
12 different location from where the patient is
13 sleeping by being capable of transmitting data
14 it obtains at any distance, either wirelessly or
15 by a modem."

16 Do you see that sentence?

17 A. I do.

18 Q. Now, previously you said that
19 bluetooth was -- I believe you said couldn't
20 extend that far, or couldn't transmit that far.
21 Is that accurate?

22 A. Bluetooth has limitations in
23 proximity. Like you have to be a certain number
24 of meters from the transmitter in order to
25 successfully communicate using the bluetooth

1 protocol.

2 Q. Would you agree that bluetooth is
3 unable to transmit at any distance, as used in
4 Paragraph 230 of Ciulla?

5 A. Say that again? I think you -- am I
6 saying that bluetooth is unable to transmit --

7 Q. At any distance, as used in that final
8 sentence of Paragraph 230 of Ciulla.

9 A. I'm not sure what you mean by any
10 distance. Like I said, bluetooth has
11 limitations. I forget exactly off the top of my
12 head. I think it's something like 30 meters or
13 something to that effect. What do you mean by
14 any distance? You mean like it cannot transmit
15 at all? Is that your question?

16 Q. Is bluetooth capable of transmitting
17 its data, let's say, from a patient's home to a
18 remote server at a doctor's office 20 miles away
19 using bluetooth?

20 A. Well, bluetooth would -- I think your
21 question was if it could transmit. So I think
22 bluetooth would -- the signal simply would not
23 be able to pair. So the two bluetooth devices
24 would not be able to communicate because neither
25 side would receive communications from the other

1 side given, I believe you said, 20 miles away.

2 Q. If the device of Ciulla had a cellular
3 RF chip, would it be able to transmit its data
4 to the remote server 20 miles away?

5 A. I think you said chip. I think you
6 probably meant like a transceiver, potentially.

7 Q. Yes.

8 A. But even -- so if there were cell
9 towers that were compatible with that
10 transceiver, the system of Ciulla could
11 potentially do that. But again, even in that
12 scenario one of ordinary skill would understand
13 that there are, like I've mentioned to you
14 earlier this morning, a number of technological
15 problems. Efficiency, power efficiency,
16 transmission efficiency. These would be large
17 problems that one of ordinary skill would
18 understand in that scenario that you're talking
19 about.

20 And again, that's where one of
21 ordinary skill in reviewing the Orbach reference
22 would immediately, readily understand oh, by
23 using the teaching of the Orbach reference in
24 the system of Ciulla, it's all consistent with
25 the teaching of Ciulla but it would have a

1 multitude of benefits by using the
2 implementation details of Orbach.

3 And so, for example, in what you're
4 asking me, one of ordinary skill would
5 understand that by -- instead of directly using
6 the cellular transceiver within the box in
7 Ciulla, which would have power issues,
8 transmission efficiency issues, by using a low
9 power protocol like bluetooth to the cell phone
10 or PDA as taught by Orbach, would have a lot of
11 these technological benefits, and that's why one
12 of ordinary skill, as I've explained in my
13 declaration, would readily incorporate those
14 teachings from Orbach into the system of Ciulla.

15 Q. Can you point me to where in your
16 declaration you state that a POSITA would be
17 motivated based on power efficiency?

18 A. Well, I think -- again, I haven't
19 memorized everything in my declaration, but even
20 the paragraphs that you and I were talking about
21 earlier, where -- for example, Paragraph 75, we
22 were talking about the industry recognized that
23 such IoT systems provided core benefits such as
24 automation, realtime access to information, data
25 collection, improved efficiency, and cost

1 reduction.

2 So like I've mentioned, there are
3 these efficiencies that one of ordinary skill
4 would have understood, including power
5 efficiencies, transmission efficiencies, and the
6 implementation details that Orbach provides,
7 again, are consistent with the teachings of
8 Ciulla but provides the implementation details,
9 and one of ordinary skill would have understood
10 a multitude of benefits and technological
11 benefits and efficiencies to incorporating the
12 teachings of Orbach into the system of Ciulla.

13 Q. And I believe in Paragraph 79 of your
14 declaration you expand upon the efficiency and
15 cost reduction point you referenced just now
16 from Paragraph 75. And in that paragraph you do
17 not mention power efficiency. Is that accurate?

18 A. Well, I'm talking about efficiency and
19 cost reduction. These are, like I explained to
20 you earlier, even before the break, these are
21 examples. And like I've explained, one of
22 ordinary skill would understand one aspect of
23 efficiency is not only the transmission
24 efficiency, but also power efficiency.

25 And I believe it's pretty clear that

1 what I'm saying in Paragraph 79, that the
2 ability to analyze data remotely allowed
3 physicians to evaluate the data at their own
4 convenience without expending the cost and
5 resources of meeting with the patient in person.
6 So even that would not have been possible
7 because, like I've explained, if you're
8 transmitting directly over cellular, the power
9 consumption is very different than if you're
10 using a low power protocol like bluetooth. And
11 so a lot of these devices would simply not
12 transmit using cellular for long distances and
13 those devices would simply run out of power, or
14 some of them would not work.

15 And so again, I've written a 120-page
16 declaration. I didn't think it was relevant to
17 writing, say, a 2,000-page declaration. I
18 believe the opinions that I've set forth are
19 very clear. There are a multitude of
20 motivations and reasons and rationals that one
21 of ordinary skill would have had.

22 And again, like I explained, I haven't
23 memorized everything in my declaration. There
24 may be other places also that talks about it.
25 But I believe that it's understood that there

1 are technological efficiencies, including
2 transmission efficiencies, power efficiencies,
3 and these are all examples of why one of
4 ordinary skill would have used the
5 implementation details of Orbach in the system
6 of Ciulla.

7 Q. And to be clear, in Paragraph 79, in
8 your motivation to combine analysis with respect
9 to efficiency and cost reduction, you make no
10 mention of power efficiency; correct?

11 A. So just looking at Paragraph 79 I
12 would agree with you the word "power" does not
13 appear there. But like I've explained, I
14 believe it's clear from the analysis that there
15 are multiple efficiencies. And I'm just naming
16 power as an example for you. And again, there
17 may be other places in the declaration where I
18 talk about it. I have not memorized it. But I
19 believe one of ordinary skill would have readily
20 understood a multitude of efficiencies,
21 including power, transmission, cost, like we
22 talked about in Paragraph 79 as well.

23 Q. And turning back to Exhibit 1007, the
24 Ciulla reference, in Paragraph 230, once you're
25 there --

1 A. I'm there.

2 Q. The second sentence of that paragraph
3 states: "Field reprogrammable chip technology
4 is employed along a microprocessor whose entire
5 program can be conveniently altered as desired,
6 and also have its voice chip or CASTs replaced
7 to increase the flexibility and adaptability of
8 the device."

9 Do you see that sentence?

10 A. I do.

11 Q. Would that be equivalent to updating
12 the software on the device?

13 A. It's talking about field
14 reprogrammable chip technology. So I don't
15 think it's talking about updating the software.
16 It's talking about updating the FPGA.

17 Q. What's run on the FPGA?

18 A. The FPGA runs physical connection. So
19 an FPGA has a number of gates, transistors, and
20 you're able to turn those transistors on or off
21 in different functionality. So FPGAs are -- by
22 definition, they're field programmable. So you
23 have to go into the field where that FPGA is and
24 then reprogram it. And so it's not something
25 that you can reprogram remotely. It's really

1 field programmable.

2 Q. When you say programmable, are you
3 discussing the programs that control the FPGA?

4 A. Yeah. FPGAs don't run like Java
5 software. FPGAs are like I'm saying they're
6 hardware. So in developing the FPGA hardware,
7 you would write code, for example, VHDL or
8 something, but it's not per se software code.
9 You're writing it but it's meant for hardware.
10 So you would take that compiled VHDL and then
11 you would have to go into the field, connect a
12 cable to that device, and then update that
13 programmability of the FPGA in the field.

14 Q. If you could turn to Paragraph 213 of
15 Ciulla on Page 31.

16 A. Okay.

17 Q. Here this paragraph is discussing the
18 clinical trial version of Ciulla you have
19 referenced in Paragraph 73. And if you look at
20 the third paragraph it says -- the third
21 sentence. It says: "The patient's embodiment
22 will also incorporate a wireless receiver
23 allowing the researcher to control the patient's
24 stimulators and earphone, by transmitting
25 different CAST algorithms and observing the

1 patient's responses in a montage display format
2 on the receiving computer's screen."

3 Would transmitting different CAST
4 algorithms be updating the software on the
5 device?

6 A. So it seems like what it's saying here
7 is the patient's embodiment will also
8 incorporate a wireless receiver allowing the
9 researcher to control the patient's stimulators
10 and earphone by transmitting different CAST
11 algorithms and observing the patient's
12 responses, and it continues on. So it seems to
13 be talking about the wireless receiver is
14 allowing the researcher to control the patient's
15 stimulators and earphone.

16 With regard to the CAST algorithms, it
17 doesn't seem to state software. And I haven't
18 read the entire paragraph, but if you can show
19 me where it's talking about software -- all I
20 see is it saying CAST algorithms. But it
21 doesn't seem to be talking about the software in
22 terms of what data to transmit, what to do with
23 that data. It's simply limiting -- it's only
24 talking about the CAST algorithms, and even
25 that, it's not saying that it's software. At

1 least I have not seen that in my very quick
2 review. If you can point me to where it's
3 saying software, I can take a look at that.

4 Q. What do you understand CAST algorithms
5 to mean, then?

6 A. Well, I think algorithms can be any
7 type of protocol. So, for example, even in
8 hardware you can have algorithms that are used.
9 So algorithms don't necessarily mean software.
10 And then especially in light of what you just
11 pointed to me earlier where it's talking about
12 the FPGAs, it seems like it could be -- it's
13 really referring to things like that, like going
14 into the field and then updating it locally by
15 either connecting a cable or using some kind of
16 a receiver at the field.

17 Q. So previously you said that the FPGA
18 could not be updated wirelessly, it had to be
19 done in the field. But in Paragraph 213 of
20 Ciulla it's talking about will incorporate a
21 wireless receiver to allow the researchers to
22 control and transmit different CAST algorithms.
23 So can you update firmware using a wireless
24 remote receiver?

25 A. So first, I think you mischaracterized

1 my testimony. I did not say that you cannot
2 update a FPGA wirelessly and you have to go into
3 the field. What I said was you cannot do it
4 remotely; you have to go in the field. In the
5 field means where that device or that FPGA is,
6 as opposed to being somewhere far away. And so
7 typically you could update the FPGA by
8 connecting a cable. You could use a wireless
9 receiver as well. But again, it's a field
10 programmable, so you would have to go into the
11 field to perform these updates.

12 And -- which is very different than
13 the benefits that I talked about in my
14 declaration which you were pointing me to
15 earlier, which is really talking about that
16 based on the beneficial implementation details
17 set forth in Orbach, one of ordinary skill would
18 understand a multitude of these benefits,
19 including putting new software from remote
20 locations, from far away, without having to go
21 into where the patient is located or without
22 having to go into, quote unquote, "the field".

23 Q. So is it your opinion, then, that the
24 CAST algorithms are controlling FPGAs, as you
25 described, and not any software on the device?

1 A. I'm not sure what you mean by the CAST
2 algorithms are controlling an FPGA. I'm not
3 sure that makes sense to me from a technical
4 perspective.

5 Q. I'll restate.

6 Is it your opinion that the CAST
7 algorithms are associated with the firmware, or
8 an FPGA, as you've previously described, and has
9 nothing to do with software?

10 A. Again, you're mischaracterizing my
11 testimony. I never said that FPGA is firmware.
12 And so what I've explained is that an FPGA is a
13 field programmable gate array, and you can
14 program an FPGA, but that's not firmware, that's
15 hardware. And what I've explained here with
16 regards to Paragraph 213 is I don't see the word
17 software. You're telling me that this is
18 software, but I don't see it. And so I'm asking
19 you if you can point me to where you see it
20 saying that this is software, that I can review
21 that and answer your question.

22 Q. To be clear, I'm not telling you it's
23 software or anything. I'm trying to get your
24 understanding of what CAST algorithms are and
25 whether they would be used as software or not.

1 A. Well, just reading that sentence --
2 and again, I'm just reading the sentence that
3 you pointed me to in Paragraph 213, it's
4 stating: "The's patient's embodiment will also
5 incorporate a wireless receiver allowing the
6 researcher to control the patient's stimulators
7 and earphone."

8 And so where it's talking about
9 stimulators and earphones, and it continues on
10 by saying "by transmitting different CAST
11 algorithms", and the discussion of the FPGA in
12 the paragraph that you pointed me to earlier, it
13 seems to indicate -- because I'm not seeing
14 anything about software, and it's talking about
15 the patient's stimulator. So it's talking about
16 actual things that would stimulate the patient.
17 So there would have to be hardware involved in
18 order to do that.

19 And so that's where I'm saying one of
20 ordinary skill would understand what is being
21 talked about there to potentially be hardware.
22 But again, I'm not -- I don't see the relevance
23 of any of this to the analysis that I've set
24 forth in my declaration that one of ordinary
25 skill would have a multitude of reasons to

1 incorporate the teachings of Orbach into the
2 system of Ciulla.

3 Q. What would allow a researcher to
4 control a patient's stimulators and/or earphone
5 remotely?

6 A. Are you talking about the system of
7 Ciulla, or what is the question?

8 Q. I'm still on Paragraph 2013 [sic],
9 same sentence we were on. I'm asking what would
10 allow a researcher to control the patient's
11 stimulators and earphone remotely?

12 A. So just to be clear, I think you're
13 talking about Paragraph 0213, not 2013. And I
14 think with regards to here, this sentence is
15 talking about that there's a wireless receiver
16 and that is allowing the researcher to control
17 the patient's stimulators and earphones. So one
18 of ordinary skill would understand that there is
19 some communication that is sent, which is
20 resulting in the stimulators being activated or
21 deactivated.

22 Q. Would that communication and control
23 involve a level of software?

24 A. Again, I don't see that stated here.
25 For example, again, just outside of the scope of

1 Ciulla and the declaration, I can build -- and
2 even my Ph.D. work that we talked about earlier
3 where we were making intelligent devices, smart
4 devices, we had intelligent and smart toys that
5 we developed as part of applications for my
6 Ph.D., and there would be single binary digits
7 that could be sent over to, say, turn on, for
8 example, a motor or turn off a motor. That
9 doesn't mean software is being transmitted.
10 It's simply something that says turn on or turn
11 off.

12 Q. Looking at the last sentence in
13 Paragraph 213: "All sensory data and responses
14 to various trial CASTs can be recorded and
15 analyzed by the researcher and/or medical
16 practitioner." If all sensory data and
17 responses are recorded and analyzed, does that
18 show the Ciulla system performing data
19 collection?

20 A. I'm not sure what you mean by
21 "performing data collection". But as we have
22 spoken about, the clinical trial version of the
23 Ciulla system does talk about data from the
24 sensors being transmitted, for example, into the
25 next room where a doctor or some kind of person

1 may be sitting and can view the information.

2 Q. Is it your opinion that Ciulla is
3 limited to only transmitting data to the next
4 room?

5 A. I think Ciulla talks about the next
6 room as an example. And the disclosures -- the
7 technology, the networking protocols that are
8 talked about, for example, bluetooth that you
9 and I have talked about a few moments ago, one
10 of ordinary skill would have understood that
11 bluetooth has limitations in the distance as
12 well. And so -- again, I have not memorized
13 everything in Ciulla, but I remember off the top
14 of my head that there is discussion about the
15 physician being in the room next to the patient.

16 Q. And if you recall our discussion of
17 Paragraph 230 from Ciulla, that transmission can
18 be at any distance. Do you recall that?

19 A. And what we talked about there with
20 regards to Paragraph 230 is -- and I've
21 explained that Ciulla does not provide the
22 implementation details. And one of ordinary
23 skill would have looked -- naturally looked to
24 the teachings of Orbach for those implementation
25 details, and the teachings of Orbach are

1 consistent with the disclosures in Ciulla as
2 well.

3 So the example of where the physician
4 is located, as far as I remember in Ciulla, is
5 in the next room to the patient. But in terms
6 of how to do that, the implementation details
7 are simply not there. And so one of ordinary
8 skill would have naturally looked to Orbach for
9 the implementation details, and again, one of
10 ordinary skill would have understood that
11 Orbach's teachings are consistent with what
12 Ciulla is trying to do but provides the missing
13 implementation details, and Orbach's teachings,
14 one of ordinary skill would have understood,
15 provide a multitude of benefits, technological
16 benefits, use case benefits, convenience
17 benefits, which would have motivated one of
18 ordinary skill to combine the teachings of
19 Orbach into the system of Ciulla.

20 Q. So then is it your opinion that Ciulla
21 is limited in transmission of its data to only
22 the next room?

23 A. Well, I think Ciulla -- the only
24 example, again, that I remember off the top of
25 my head is in the next room. But it could even

1 be two rooms down. So it depends on how far the
2 rooms are. But that's not really the point.
3 What I'm talking about in the combination I've
4 set forth in my declaration is not about whether
5 you can go one room away or two rooms away.
6 That's not the point. My point is that one of
7 ordinary skill in reviewing Orbach would
8 understand that there are a lot of benefits to
9 using the implementation details of Orbach in
10 the system of Ciulla.

11 Orbach would, for example, provide the
12 implementation details to have the remote server
13 located at any distance away, consistent with
14 what you pointed me to in Paragraph 230. But
15 those implementation details are missing from
16 Ciulla. And that's, again, why one of ordinary
17 skill would simply look to Orbach for those
18 implementation details; how do I efficiently
19 implement the system of Ciulla, because Ciulla
20 doesn't provide those implementation details.
21 And Orbach provides the implementation details,
22 and one of ordinary skill would understand that
23 it's consistent with the market trends that were
24 going on at that time, one of ordinary skill
25 would understand that it provides efficiencies,

1 conveniences, technological benefits, use case
2 benefits, convenience benefits, and a multitude
3 of other benefits, which would have been reasons
4 and motivations and rationals for one of
5 ordinary skill to take the teachings of Orbach
6 and incorporate them into the system of Ciulla.

7 Q. Going back to Paragraph 213 of Ciulla
8 where it's discussing the clinical trial version
9 that can transmit its multiple sensors' outputs
10 wirelessly, can you tell me the transmission
11 limitation for an RF transceiver?

12 A. Can you ask that question again? I'm
13 not sure I understand.

14 Q. Well, previously we discussed that
15 bluetooth has a transmission limit of, I think
16 you said, 30 meters or so, somewhere around
17 there.

18 A. Mm-hmm.

19 Q. What's the limit on an RF transceiver?

20 A. Well, I think RF transceiver, it
21 depends on how it's implemented. Like even
22 bluetooth is RF.

23 Q. Mm-hmm.

24 A. And so you can have RF transceivers
25 that are low power, like bluetooth, or you can

1 have high power, like other types of
2 transceivers. And one of ordinary skill would
3 readily know that the further you go, the more
4 power you need in order to transmit to a further
5 distance.

6 And so I'm not sure how to answer your
7 question because RF incorporates different
8 spectrum and it really depends on the protocol
9 you use, the transceiver, the power that's being
10 used by the transceiver.

11 Q. Well, Ciulla does disclose a method or
12 a way of transmitting its data to a remote
13 server at any distance, at least using an RF
14 transceiver; do you agree with that?

15 A. Well, I agree that Ciulla discloses
16 the intent to transmit data, like in
17 Paragraph 130 that we were -- or 230 that we
18 were looking at. But like I've explained to you
19 a number of times already, the implementation
20 details are missing from Ciulla. And so one of
21 ordinary skill would naturally look to, for
22 example, the system of Orbach to fill in those
23 implementation details, and in doing so one of
24 ordinary skill would understand that the
25 implementation that is disclosed by Orbach

1 provides a number of benefits. It's not -- it's
2 an efficient way that has benefits in
3 technological efficiencies, in convenience, in
4 benefits to the user, and use cases. So one of
5 ordinary skill would understand these from
6 reading the Orbach reference.

7 And as I've stated in my declaration,
8 those would be reasons why one of ordinary skill
9 would incorporate the teachings of Orbach into
10 the system of Ciulla.

11 Q. And what are the implementation
12 details you say Ciulla is missing?

13 A. Well, like we've talked about in
14 Paragraph 213, it's talking about bluetooth.
15 Okay. But bluetooth has limitations. And
16 bluetooth would allow you to go, for example, to
17 the next room or maybe two rooms down. But then
18 that's it. And so there's no implementation
19 details in Ciulla that would allow it to go
20 beyond one or two rooms. Just saying, for
21 example, RF, well, how do you do that? What are
22 the implementation details there? And Orbach
23 provides those implementation details, which one
24 of ordinary skill would look at in implementing
25 the system of Ciulla.

1 Q. We were previously discussing the cost
2 of connectivity and how it's come down with the
3 implementation of RF transceivers. Do you
4 recall that discussion?

5 A. I think I explained that to you, but
6 not in the context of right now. I was talking
7 about when I was doing my Ph.D. work, that
8 those -- the chips and the transceivers, the
9 cost had come down even at that point. And so
10 it was getting to a point where making all kinds
11 of devices smart or intelligent were enabled at
12 that time.

13 Q. And would an RF transceiver make the
14 Ciulla device smart, as you used it previously
15 in your testimony?

16 A. This is what we just talked about.
17 Like what does it mean to be an RF transceiver,
18 in terms of implementation details, like --

19 Q. Mm-hmm.

20 A. -- that's what I was explaining to you
21 that the off-the-shelf type of components had
22 come down in cost, even when I was doing my
23 Ph.D. work, and they were projected to come down
24 even further. And so I'm not sure what your
25 question is with regards to would an RF

1 transceiver make the device or the system of
2 Ciulla smart.

3 Q. Well, as I understand it, part of your
4 opinion is a POSITA wouldn't be motivated to use
5 the data connectivity methods taught by Orbach
6 on Ciulla because Ciulla doesn't enable or
7 disclose a method of transmitting its data to a
8 remote server beyond the next room.

9 So would a POSITA, reading Ciulla in
10 Paragraph 213 where it's talking about its RF,
11 bluetooth, LAN, WAN, IT, ethernet modem,
12 understand the cost benefit of implementing an
13 RF transceiver and being able to send that data
14 to a remote server beyond 30 meters or the next
15 room, as we've discussed?

16 A. So those are pretty long, confusing
17 question. But I think what I'm saying is that
18 Ciulla just talks about the word -- or the
19 initials RF. Ciulla does not provide the
20 implementation details. Just saying you can do
21 it using RF is not an implementation detail per
22 se. And so that's the point that I'm making,
23 that Ciulla is disclosing a system. It's saying
24 that the system can transmit certain data, for
25 example, wirelessly. And then it gives an

1 example of the physician being in the next room.
2 But it does not provide the details, the
3 implementation details, and one of ordinary
4 skill would have naturally looked to the system
5 of Orbach to provide those details, the
6 implementation details, and in reviewing Orbach
7 and Orbach's teachings, one of ordinary skill
8 would understand that there is a large number of
9 benefits, technological benefits, efficiencies,
10 use case benefits, convenience benefits, and
11 therefore one of ordinary skill would have been
12 highly motivated to incorporate those teachings
13 from Orbach into the system of Ciulla.

14 Q. Would a person of ordinary skill in
15 the art have the knowledge and understanding on
16 how to wirelessly output data using an RF
17 transceiver that's not bluetooth?

18 A. I'm not sure what you mean by that.
19 Like if you're asking would one of ordinary
20 skill understand that there are different types
21 of RF transceivers, I think one of ordinary
22 skill would understand that. But how do you
23 implement the system of Ciulla, what Ciulla is
24 disclosing. There is no implementation details.
25 Just saying use the RF transceiver doesn't --

1 that's not implementation details. And so one
2 of ordinary skill would look to Orbach, which is
3 a very similar system, and readily understand
4 the -- that Orbach is providing the
5 implementation details and that the system of
6 Orbach, the network communications, has a lot of
7 benefits and those -- in addition to the
8 implementation details, those reasons would be
9 additional motivations why one of ordinary skill
10 would combine the teachings of Orbach into the
11 system of Ciulla.

12 Q. Moving on to Paragraph 214 of Ciulla,
13 that first paragraph -- or the first sentence.
14 The end of that sentence states: "Or directly
15 transmit these IT reports to the therapist's
16 computer and/or company's mainframe system for
17 further analysis, research or documentation."

18 And I believe that's similar to the
19 quote -- or not the quote you also reference in
20 Paragraph 73 of your declaration.

21 Would transmitting the reports to the
22 computer or mainframe system for analysis,
23 research and/or documentation consist of storing
24 data in a collected manner?

25 A. So are you talking about the siloed

1 data, is that your question? Because we talked
2 previously about the silos of data --

3 Q. Mm-hmm. Would storing the data and
4 reports on a company's mainframe system be the
5 siloing of data?

6 A. Well, it's talking about the company's
7 mainframe. It's not talking about a general
8 remote server. So even if the data is
9 transmitted to a company's mainframe, there
10 could still be the siloing. And that's what
11 we've talked about, that the Orbach system,
12 because it provides those implementation
13 details, it allows the scalability, one of
14 ordinary skill would have understood that the
15 scalability that's allowed by the Orbach system,
16 the teachings of the Orbach system to enable the
17 silos to not exist.

18 And so that's one of the benefits that
19 I talked about earlier with regards to having
20 access to different types of data, data from
21 different patients. And so those are, again,
22 reasons and motivations why one of ordinary
23 skill would combine the teachings of Orbach in
24 the -- into the system of Ciulla.

25 Q. Would you agree that whether it's the

1 remote server of Orbach or the company's
2 mainframe system that's disclosed in Ciulla,
3 that if it's receiving a patient's physiological
4 data, or medical data in general, that there
5 would have to be some level of security
6 protocols to protect that data?

7 A. Are you asking whether a POSITA would
8 have known about encryption in transmitting
9 data? Is that your question?

10 Q. I'm talking about as far as access to
11 the data, whether on the remote server or the
12 company's mainframe as used in Orbach and
13 Ciulla, okay? To access that data, would
14 anybody other than a medical professional have
15 access to that data?

16 A. Again, I'm not sure I understand the
17 relevance of this to my declaration and the
18 opinions, but I guess there could be people
19 related to audits and things like that, that may
20 have access to the data. But even data that's
21 stored on a database or some kind of a flat file
22 system, that can also be encrypted and a POSITA
23 would have known, even at the relevant time
24 periods, that encryption during storage is
25 commonly done for any kind of confidential data.

1 For example, I built one of the first
2 mobile banking systems in the world, and that
3 system pre-dates the priority date that we are
4 talking about here, and even there encryption
5 was used for communicating the bank transaction
6 data and encryption was used to store the bank
7 transaction data. So one of ordinary skill was
8 readily aware of encryption techniques, both in
9 transit as well as at rest.

10 Q. Would one of ordinary skill consider
11 that a company's mainframe computer also has a
12 database?

13 A. Well, typically mainframes use a flat
14 file structure, and I don't think flat files are
15 typically understood to be a database per se.
16 But if you kind of provide more details on your
17 question, I can try to answer your question.

18 Q. I'm just asking for your understanding
19 of whether or not a person of ordinary skill
20 would believe that a company's mainframe
21 computer that's associated with a sleep
22 therapist would also compose of the database?

23 A. Is there a question whether the
24 mainframe would store data, or are you asking
25 whether Ciulla discloses the specific way in

1 which the data should be stored?

2 Q. Would a mainframe computer system for
3 a therapist's office store data?

4 A. Are you asking about the system of
5 Ciulla and what Ciulla discloses?

6 Q. I'm asking about a POSITA's
7 understanding of what they would understand a
8 company's mainframe computer system associated
9 with a sleep therapist's office, whether or not
10 they would consider a database within that
11 system.

12 A. So in your question are you asking --
13 when you're using the term "a database", are you
14 saying it's a -- is your question whether it's
15 using a relational database?

16 Q. I'm asking in terms of how you used
17 the term database in your prior answer. Would a
18 POSITA understand a therapist's office company's
19 mainframe computer system to include a database?

20 A. Can you tell me which -- when you're
21 referring to my prior answer, I'm not sure I
22 remember talking about database.

23 Q. When you were talking about data
24 collection and building large data sets, you
25 referenced that it could be put into a database.

1 What I'm asking is would a person of ordinary
2 skill understand that a company's mainframe
3 computer at a doctor's office consist of at
4 least a database?

5 A. I still don't remember what I said.
6 If you can read back my -- the entire testimony
7 part of it so I can refresh my memory.

8 Q. Okay. With regards to data collection
9 that you talk about in Paragraph 78 of your
10 declaration and the ability to build large data
11 sets, where would those data sets be kept?

12 A. Well, this is in the motivation to
13 combine section.

14 Q. Correct.

15 A. So what I'm talking about here is that
16 these large date sets would be on the remote
17 server as disclosed by Orbach.

18 Q. Understand. And the remote server,
19 would they store these remote data sets in a
20 database?

21 A. I think my opinion on the analysis
22 here, it doesn't really matter the structure in
23 which the data is stored. You can have a
24 database like a relational database. You can
25 have a flat file system. All I'm saying is that

1 one of ordinary skill would understand, would
2 readily understand that by incorporating
3 Orbach's teaching into the system of Ciulla that
4 there would be a lot more data available at the
5 remote server that Orbach is disclosing.

6 Q. And would that data also be available
7 if it was sent to the company's mainframe
8 computer?

9 A. So if, for example, a patient is not
10 part of that company's treatment, then I don't
11 think it would. If I understand your question.

12 Q. Is it your opinion that the remote
13 server in Orbach is not associated with a
14 medical doctor?

15 A. The server can be associated with a
16 medical doctor. Like, for example, I may not be
17 interested in data about sleep disorders. So
18 I'm not sure I understand the question. The
19 point is that Orbach provides the implementation
20 details that allows more data to be available,
21 and that's the ability to build these large data
22 sets and remove the silos, is really what I'm
23 getting at in Paragraph 78, which is a
24 motivation to combine.

25 Q. And how would those large data sets be

1 constructed?

2 A. Well, for example, you would get --
3 the company could potentially -- or a medical
4 facility could have 15 different locations. And
5 so the implementation details in Orbach, one of
6 ordinary skill would understand that there could
7 be a remote server that all of those 15
8 locations and all of the patients that are being
9 seen in all of those 15 locations can go to that
10 remote server. And that's because Orbach
11 provides the implementation details, which are
12 highly efficient and offers a multitude of
13 benefits and use cases. And if you are able to
14 take all of that data and put it into a -- for
15 example, the remote server of Orbach, you have
16 more data there that would allow for analysis,
17 and not silos of data, which don't allow for the
18 larger data sets.

19 Q. Would a person of ordinary skill
20 understand that a company's mainframe computer
21 system is not accessible from a remote location?

22 A. Can you provide some more details with
23 your question? What do you mean by a remote
24 location and accessible?

25 Q. Well, let's say you have, in this

1 instance -- sticking with Ciulla -- you have the
2 therapist, right, and their company's mainframe
3 computer system, but the therapist has 15
4 offices at various locations. Would the
5 mainframe computer system be available from any
6 one of those 15 locations or not?

7 A. It depends on the implementation
8 details, which I explained to you are missing in
9 Ciulla, and if you -- and the combination that
10 I've set forth in my declaration where the
11 teachings of Orbach are incorporated into the
12 system of Ciulla, in that way then it would be
13 an efficient implementation and one of ordinary
14 skill would understand that you could have a
15 remote server.

16 For example, you can use a mainframe
17 or some other kind of server to serve all of the
18 patients at all of the 15 locations in this
19 hypothetical example that you are and I are
20 talking about. But again, those implementation
21 details are not there in Ciulla. And so with
22 the specific implementation details of Orbach,
23 the data can be aggregated at a location
24 removing the silos, and then there would be more
25 data available for analysis.

1 Q. Turning to Page 45 of your
2 declaration, Paragraph 80, you state that: "A
3 person of ordinary skill in the art would have
4 been motivated to provide health access to more
5 people." Dr. Chatterjee, are you aware of the
6 type of patients a person of ordinary skill in
7 the art would be targeting with the system of
8 Ciulla and Orbach as proposed?

9 MS. NGUYEN: Objection; vague.

10 THE WITNESS: I think what I'm
11 trying to say in this paragraph, because you
12 pointed me to this sentence, is basically
13 talking about the -- a POSITA, one of ordinary
14 skill, would have known about the concept of
15 telemedicine and that telemedicine allows
16 services, including medical services, to be
17 provided even when the patient and the doctor or
18 the health care provider are not in close
19 proximity to each other.

20 And so my point here is that one of
21 ordinary skill would have understood the concept
22 of telemedicine and that providing health
23 services to more people, even if those people
24 are far away and are not in proximity to the
25 care provider, would be a benefit.

1 Q. Thank you, Dr. Chatterjee. And just a
2 couple of final questions.

3 In preparing your declaration, did you
4 have any conversations with Dr. Kirkness?

5 A. In preparing my declaration?

6 Q. Yes. Prior to submitting your
7 declaration, did you have any discussions with
8 Dr. Kirkness about your opinions as discussed
9 here?

10 A. I did not.

11 Q. In preparing for today's deposition
12 did you review the deposition testimony of
13 Dr. Kirkness?

14 A. I did not.

15 MR. LAYDEN: I have no further
16 questions at this time.

17 MS. NGUYEN: No questions.

18 MR. LAYDEN: Dr. Chatterjee, I
19 appreciate it.

20 COURT REPORTER: (Requests orders
21 for the record.)

22 MR. LAYDEN: We have a standing
23 order.

24 MS. NGUYEN: Standing order.

25 (1:28 p.m. - Adjournment.)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

C E R T I F I C A T E

STATE OF NEBRASKA)
) ss.
COUNTY OF DOUGLAS)

I, Cheryl A. Rooney, Registered
Professional Reporter, General Notary Public
within and for the State of Nebraska, do hereby
certify that the foregoing testimony of SANDEEP
CHATTERJEE was taken by me in shorthand and
thereafter reduced to typewriting by use of
Computer-Aided Transcription, and that the
eighty-seven (87) pages contain a full, true and
correct transcription of all the testimony of
said witness, to the best of my ability;

That I am not a kin or in any way
associated with any of the parties to said cause
of action, or their counsel, and that I am not
interested in the event thereof.

IN WITNESS WHEREOF, I hereunto affix
my signature and seal this 11th of September,
2025.

CHERYL A. ROONEY, RPR
GENERAL NOTARY PUBLIC
Registered Professional Reporter

My Commission Expires: November 24, 2026

<u>WORD INDEX</u>			
< 0 >	0125	47:13	
	0213	65:13	
	0214	30:8	
	0230	51:1, 3	
< 1 >	1	3:2 6:25 15:4 21:5, 6	
	1:28	86:25	
	10:06	46:16	
	10:15	47:1	
	10036	2:18	
	1005	4:13 6:7	
	1007	28:23 47:6 57:23	
	1064	15:16 16:21, 23, 24 17:1	
	1065	15:17 16:21 17:1	
	1067	17:15	
< 2 >	11	12:11	
	11,690,512	1:3 4:15	
	1117	2:7	
	1177	2:18	
	11th	87:19	
	120-page	7:12 56:15	
	120-plus	21:21	
	125	49:23	
	130	71:17	
	15	12:11 83:4, 7, 9 84:3, 6, 18	
< 3 >	16	12:22	
	160	9:19, 21, 22 10:12, 19, 21	
	17	21:7	
	173	10:23	
	188	12:9, 15	
	19	21:7	
< 4 >	2	3:2 15:5, 7 2,000-page 56:17	
	20	5:3, 6 21:7 52:18 53:1, 4	
	2000s	26:13, 25 27:7	
	2003	15:11	
	2007	18:24	
	2013	65:8, 13	
	2025	1:17 87:20	
	2026	87:25	
	212.715.7502	2:19	
	213	59:14 61:19 63:16 64:3 66:13 70:7 72:14 74:10	
< 5 >	214	76:12	
	23	47:10	
	230	52:4, 8 57:24 67:17, 20 69:14 71:17	
	24	87:25	
	25	13:2 14:17	
	28	14:25	
< 6 >	3	3:3	
	30	13:6 15:6, 8 52:12 70:16 74:14	
	31	13:2 14:17 59:15	
	32	17:3 51:1, 2, 3	
	333	2:12	
< 7 >	4	3:3, 4 12:10	
	41	21:3	
	45	31:8, 20 85:1	
< 8 >	55	17:3 18:11 20:13	
	5th	1:17	
< 9 >	6	15:17 21:7	
	650.320.1800	2:8	
	650.752.1700	2:14	
< A >	70	21:12	
	700	2:13	
	72	23:3, 10, 25 24:21, 24 39:11	
	73	28:5 29:24 36:23 37:7, 12, 15 59:19 76:20	
	74	22:24 31:19, 22	
	75	23:17 38:2, 3 39:8, 21 40:25 44:4 54:21 55:16	
	76	38:16 40:1, 9	
	77	38:18 41:2 43:15	
	78	38:19 44:3 81:9 82:23	
	79	38:20 39:8 44:23 55:13 56:1 57:7, 11, 22	
< 90s >	8	21:7	
	8:48	1:16	
	80	85:2	
	81	22:25	
	83	9:20	
	87	3:4 7:4 87:11	
	88	6:20, 23 7:17 9:4 10:14, 18, 21	
	89	10:23	
< 90s >	90s	13:5	
	94065	2:13	
	94304-1106	2:7	
	95	12:8	
	97	25:22	
< 90s >	a.m	1:16 46:16 47:1	
	ability	43:9 44:6, 12, 25 45:6 56:2 81:10 82:21 87:13	
	able	14:9 19:12 27:11 30:23 34:24 41:23 45:17, 21, 24 52:23, 24 53:3 58:20 74:13 83:13	
	about	5:6 13:16 14:23 16:14 18:10, 22, 23 21:24 23:4, 11, 18 24:5, 9 25:24 26:1, 3, 16, 19 34:23 35:5, 25 38:16, 18, 20, 21 39:10, 12, 15 41:17 43:8, 16 45:14 48:3, 8 49:3 53:19 54:20, 22 55:18 56:24 57:18, 22 58:13, 15, 16 60:13, 19, 21, 24 61:11, 20 62:13, 15 64:8, 14, 15, 21 65:6, 13, 15 66:2, 22, 23 67:5, 8, 9, 14, 19 69:3, 4 72:13, 14 73:7, 16 74:10, 18 76:25 77:2, 6, 7, 11, 19 78:8, 10 79:4 80:4, 6, 22, 23 81:9, 15 82:17	

84:20 85:13, 14 86:8 access 17:11 20:16 22:5, 6 24:15 30:23 36:10, 11 38:6, 19 41:1, 4, 11, 17, 23, 24 42:9, 22 43:9, 12, 16 45:17, 22, 25 48:13 49:24 54:24 77:20 78:10, 13, 15, 20 85:4 accessed 34:13 42:6, 7 accessible 83:21, 24 accurate 9:7, 14 10:2, 4 12:14 23:1 24:1 28:24 29:4 37:4, 13 40:8, 14 49:25 51:21 55:17 accurately 10:4 acquisition 7:21 8:19 21:15 28:13 31:12, 16, 23 32:2, 9, 23 34:25 35:7, 12, 19 36:24, 25 37:9, 20 action 87:16 activated 65:20 actual 64:16 adaptability 58:7 add 25:9 addition 31:3 76:7 additional 15:15 76:9 Additionally 17:8 address 50:18 addressed 50:7, 9, 11 Adjournment 86:25	affix 87:18 After 16:3 again 7:15 11:11 19:18 21:20 22:8 30:11 35:1, 20, 24 41:15 45:7 46:1 52:5 53:11, 20 54:18 55:7 56:15, 22 57:16 62:9 63:10 64:2, 22 65:24, 25 67:12 68:9, 24 69:16 70:12 77:21 78:16 84:20 against 4:14 aggregated 84:23 ago 67:9 agree 33:17 52:2 57:12 71:14, 15 77:25 algorithms 40:4, 7, 18 59:25 60:4, 11, 16, 20, 24 61:4, 6, 8, 9, 22 62:24 63:2, 7, 24 64:11 allow 22:4, 6 42:5, 17, 18 44:7 48:12 61:21 65:3, 10 72:16, 19 83:16, 17 allowed 19:20 56:2 77:15 allowing 28:18 44:18 59:23 60:8, 14 64:5 65:16 allows 29:6 77:13 82:20 85:15 along 58:4 already 38:25 71:19 altered 58:5 alternately 47:18 Alto 2:7 Americas 2:18	among 37:21 analyses 51:11 analysis 8:11 9:6 11:14, 17, 21 12:10 21:8 27:17 30:3, 5 33:23 38:24 44:9 57:8, 14 64:23 76:17, 22 81:21 83:16 84:25 analyze 7:23 8:22 9:8 10:16 44:8, 25 45:6 56:2 analyzed 66:15, 17 and/or 30:4 51:6 65:4 66:15 76:16, 23 another 5:9, 10 19:6 29:11 37:24 answer 5:9 26:18 63:21 71:6 79:17 80:17, 21 answered 20:21 35:10 answering 5:3 34:15 any 4:18 6:1 13:7 19:2 25:6 34:16, 19 35:14 39:6, 7 42:4 51:7, 14 52:3, 7, 9, 14 61:6 62:25 64:23 67:18 69:13 71:13 78:25 84:5 86:4, 7 87:14, 15 anybody 78:14 anything 63:23 64:14 anywhere 42:7 apologize 11:9 APPEAL 1:2 appear 57:13 APPEARANCES 3:2	Appearing 2:2, 3, 10 appears 37:14 applicable 22:15 application 17:20 applications 22:23 66:5 applied 26:12 appreciate 86:19 appreciated 26:11 33:13 appropriate 51:7 are 5:20, 22, 23 7:13, 15 8:9 10:3 13:7 16:25 18:9 19:12 20:4, 12 22:11, 13 23:15 25:4 26:7, 16, 22 27:11 29:14 30:15, 20, 24 31:4 32:18 33:9, 14 34:8, 12 38:8, 10 39:17, 18 40:4, 10, 18, 20 41:15 42:7 43:1 46:1, 8, 9 50:7, 8, 9, 10, 11 53:13 55:2, 7, 19, 20 56:18, 19 57:1, 3, 15 58:21 59:2, 5 61:8 62:24 63:2, 7, 24 65:6 66:17 67:7, 25 68:7, 11 69:2, 8, 15 70:25 71:20 72:11, 21 74:16 75:20 76:25 77:21 78:7 79:3, 14, 24 80:4, 12, 13 83:8, 11, 13 84:8, 11, 19, 21 85:5, 18, 24 area 37:3 array 63:13 art 4:22 7:19 12:23 13:17 18:6, 16 21:13 25:2
---	---	---	--

31:9 32:6 75:15 85:3, 7 artificial 16:6 asked 33:21, 25 asking 10:3 18:14, 19, 22, 23 20:16 26:22 35:6 54:4 63:18 65:9 75:19 78:7 79:18, 24 80:4, 6, 12, 16 81:1 aspect 55:22 asserted 7:1, 8 associated 11:3, 18, 22 12:1, 3, 6 63:7 79:21 80:8 82:13, 15 87:15 associating 12:15 audits 78:19 automation 38:6, 17 39:25 40:2, 5, 6, 11, 13 54:24 available 6:13 13:3 23:13 24:16 42:18 82:4, 6, 20 84:5, 25 Avenue 2:7, 18 aware 20:4 79:8 85:5 < B > back 10:13 16:23 18:21 44:3 47:16, 19, 21 48:17, 24 57:23 70:7 81:6 background 12:23 13:17 15:1 17:4 23:19 39:14 bank 79:5, 6 banking 79:2 Based 6:12 54:17 62:16 basically 85:12 basis 15:2 began 25:21 beginning 1:16	begins 15:5 17:3 22:23 39:21 believe 7:12, 13, 14, 15 14:8 15:20 16:22 21:23, 25 22:19, 22 23:7, 16, 17, 20 25:21 29:7 31:8, 18 34:21 42:23 43:15 51:19 53:1 55:13, 25 56:18, 25 57:14, 19 76:18 79:20 beneath 21:8 beneficial 30:1 37:17 62:16 benefit 40:6 41:11 43:7, 11 44:4, 18, 22 74:12 85:25 benefits 22:17, 23 29:21 30:15, 20 32:18 33:14 36:8, 10, 20 38:2, 5, 8, 11, 12 39:2, 3, 6, 7, 11, 17, 18, 24 40:10, 11, 13 42:8, 13 43:2, 3, 4 46:8, 10 48:10 49:16, 17, 18, 21 50:10, 18, 20, 22 54:1, 11, 23 55:10, 11 62:13, 18 68:15, 16, 17 69:8 70:1, 2, 3 72:1, 2, 4 75:9, 10 76:7 77:18 83:13 best 87:13 better 40:18 beyond 72:20 74:8, 14 binary 66:6 bit 26:17, 23 31:18 44:1 BlackBerry 13:6 blocks 27:10	Bluetooth 28:16 31:25 37:2 49:6, 7 51:19, 22, 25 52:2, 6, 10, 16, 19, 20, 22, 23 54:9 56:10 67:8, 11 70:15, 22, 25 72:14, 15, 16 74:11 75:17 BOARD 1:2 body 15:14 22:12 box 54:6 break 43:20, 24, 25 46:13 48:8 55:20 breathing 41:9 brief 13:10, 21 briefly 13:13 bring 26:25 bringing 18:21 brings 5:10 build 44:6, 12 66:1 81:10 82:21 building 27:10 80:24 built 44:14 79:1 < C > CA 2:7, 13 cable 59:12 61:15 62:8 California 2:7 called 34:8, 10, 11 can 4:23 6:20 9:19 10:6 11:7, 24 12:8, 21 14:7 17:16 20:9 25:12 26:4, 19, 21 27:11, 18, 21 30:3, 12 33:2 35:11 36:10, 11 37:21 38:1, 13 41:24 42:9 43:20 45:14 46:12 47:10 48:3 54:15 58:5, 25 60:18 61:2, 3, 6, 8, 23	63:13, 19, 20 66:1, 14 67:1, 17 69:5 70:9, 10, 12, 24, 25 74:20, 24 78:22 79:17 80:20 81:6, 7, 23, 24 82:15 83:9, 22 84:16, 23 cannot 44:10 52:14 62:1, 3 can't 4:16 5:13 capabilities 12:13 29:14 capability 25:10 35:14 capable 51:13 52:16 CAPTION 3:2 car 50:4 card 51:6 care 48:5 85:18, 25 CASE 1:3 3:2 6:10 7:8 39:3 43:3 49:17 68:16 70:1 75:10 cases 36:10 50:19 72:4 83:13 CAST 59:25 60:3, 10, 16, 20, 24 61:4, 22 62:24 63:1, 6, 24 64:10 CASTs 58:6 66:14 cause 87:15 cell 8:15, 21 9:16 13:3, 25 14:14, 18, 19 18:7, 17, 25 19:22 20:2, 7, 19, 25 26:4, 20 27:22 30:17 53:8 54:9 cellular 7:22 9:5, 13 10:14 53:2 54:6 56:8, 12 certain 14:5, 6 25:19 36:1 51:23 74:24
--	--	--	--

CERTIFICATE 3:4 certify 87:7 chapter 15:16 chat 4:12 6:5 47:5 CHATTERJEE 1:6, 14 2:3 4:3, 8 47:5 85:5 86:1, 18 87:8 Cheryl 1:14 87:4, 22 children's 25:8 chip 53:3, 5 58:3, 6, 14 chips 73:8 citation 15:16 16:18, 20 citations 16:21 citing 43:15 Ciulla 7:1, 5, 9, 21 8:14, 20 9:2 21:5, 15, 18, 24 22:3, 16, 17 23:7, 24 26:12 28:6, 12, 23 29:1, 2, 5, 10, 15, 23, 25 30:7, 11, 13, 25 31:6, 10, 14, 15 32:1, 7, 11, 12 33:1, 4, 24 34:6 35:3, 12, 25 36:16, 24 37:6, 8, 15, 17, 24 39:5 42:1, 5 45:14 47:6 49:2, 14, 22, 23 50:15, 18, 24 52:4, 8 53:2, 10, 24, 25 54:7, 14 55:8, 12 57:6, 24 59:15, 18 61:20 65:2, 7 66:1, 18, 23 67:2, 5, 13, 17, 21 68:1, 4, 12, 19, 20, 23 69:10, 16, 19 70:6, 7 71:11, 15, 20 72:10, 12, 19, 25	73:14 74:2, 6, 9, 18, 19, 23 75:13, 23 76:11, 12 77:24 78:2, 13 79:25 80:5 82:3 84:1, 9, 12, 21 85:8 Ciulla's 31:16, 23 32:20 33:15 36:4 37:20 claims 12:10 21:6 clean 26:9 clear 5:11, 13 23:20 26:9 36:22 43:7 55:25 56:19 57:7, 14 63:22 65:12 clearly 7:13, 16 29:19 CLEVELAND 1:6 clinic 45:23 clinical 28:13 29:5, 10, 15 33:1 36:4, 25 42:5 49:3 59:18 66:22 70:8 clinics 24:11 close 50:6 85:18 code 59:7, 8 collected 76:24 collection 38:7, 20 44:4, 6, 11 54:25 66:19, 21 80:24 81:8 combination 7:2 8:2, 14 69:3 84:9 combinations 7:10 combine 21:9 50:23 57:8 68:18 76:10 77:23 81:13 82:24 combined 8:3 come 25:15 73:2, 9, 22, 23 comes 30:7	Commission 87:25 commonly 78:25 communicate 26:20, 21 27:21 29:17 30:13 51:25 52:24 communicating 79:5 communication 12:13, 16, 19 31:1 32:12 35:18, 23 65:19, 22 communications 13:19 29:14 52:25 76:6 communicator 13:4 company 83:3 company's 30:5, 9 31:15, 24 32:22 33:3, 17 35:15 37:22 76:16 77:4, 6, 9 78:1, 12 79:11, 20 80:8, 18 81:2 82:7, 10 83:20 84:2 compatible 53:9 compiled 59:10 components 25:13, 14 73:21 compose 79:22 computer 7:23 8:15, 22 9:6, 18, 24 10:8, 16, 17, 20 12:12 14:8 18:1 20:3 21:16 30:2, 4, 18 32:22 33:3 34:12, 20 37:18 41:22 45:14 76:16, 22 79:11, 21 80:2, 8, 19 81:3 82:8 83:20 84:3, 5 Computer-Aided 87:10	computers 34:9 36:1 computer's 28:20 60:2 computing 13:2, 23 14:15 15:2 concept 85:14, 21 conclusion 8:11, 13 conference 45:16 confidential 78:25 confines 6:11 confused 18:18, 22 26:17, 23 31:18 confusing 74:16 connect 17:16 24:22 25:2 59:11 connected 19:7 23:13 26:14 34:17 47:18 connecting 19:7 24:3 61:15 62:8 connection 47:17 58:18 connectivity 26:24 29:3 34:17, 19 73:2 74:5 consider 79:10 80:10 considered 30:10 35:22 consist 76:23 81:3 consistent 49:14 50:14 53:24 55:7 68:1, 11 69:13, 23 constructed 83:1 consumption 56:9 contain 87:11 contend 24:24 context 73:6 continue 34:11 40:19
---	---	--	---

continues 12:7 22:25 51:8 60:12 64:9 continuing 14:25 control 25:20 51:11 59:3, 23 60:9, 14 61:22 64:6 65:4, 10, 16, 22 controlled 19:16 controlling 62:24 63:2 convenience 45:2, 6, 22 50:19 56:4 68:16 70:2 72:3 75:10 conveniences 70:1 convenient 48:14 conveniently 45:21 58:5 conventional 18:4, 24 conversations 86:4 copies 4:18, 21 copy 4:24 core 38:5 39:23 54:23 CORP 1:3 correct 7:14 8:16 11:19 37:23 57:10 81:14 87:12 correctly 10:5, 12 cortical 16:6 cost 15:15 25:14 38:7, 22 44:24 45:2, 5, 11 54:25 55:15, 19 56:4 57:9, 21 73:1, 9, 22 74:12 could 6:6 10:22 15:13 16:12 19:3, 23, 24 21:3 26:8, 11 27:16, 17 30:10 34:9 35:22 36:5 40:2, 16	41:4, 7, 18 42:15 47:7, 15, 18, 19 48:22 49:10 50:25 52:21 53:10 59:14 61:12, 18 62:7, 8 66:7 68:25 77:10 78:18 80:25 83:3, 4, 6 84:14 couldn't 6:17, 19 16:24 51:19, 20 counsel 87:16 COUNTY 87:3 couple 43:25 86:2 course 5:3 COURT 86:20 CRR 1:15 currently 15:14 < D > data 7:22, 23, 24 8:19, 20, 21, 22 9:5, 6, 8, 13, 16, 18 10:1, 10, 15, 16 11:13, 16, 20 14:5, 6 17:9, 11, 21 19:14, 21 20:2, 6, 14, 18 21:2, 16 24:15 25:19 26:3, 20 27:12, 18 28:12 30:1, 13, 18 31:12, 16, 23 32:2, 9, 12, 21, 23, 24 33:2, 19 34:3, 18, 21, 24 35:7, 12, 16, 19 36:1, 11, 24 37:9, 18, 20 38:7, 20 41:5, 13, 18, 25 42:4, 5, 6, 9, 15, 17, 18, 21 43:9 44:3, 6, 7, 8, 10, 11, 13, 20 45:1, 6 47:15, 17 48:22 49:4 51:13 52:17 53:3 54:24 56:2, 3 60:22, 23 66:13,	16, 18, 21, 23 67:3 68:21 71:12, 16 74:5, 7, 13, 24 75:16 76:24 77:1, 2, 3, 5, 8, 20 78:4, 6, 9, 11, 13, 15, 20, 25 79:6, 7, 24 80:1, 3, 23, 24 81:8, 10, 11, 19, 23 82:4, 6, 17, 20, 21, 25 83:14, 16, 17, 18 84:23, 25 database 78:21 79:12, 15, 22 80:10, 13, 15, 17, 19, 22, 25 81:4, 20, 24 date 14:23 19:24 26:2 28:2 79:3 81:16 deactivated 65:21 declaration 4:13, 21 6:4, 9, 11, 16, 21 7:12, 16 10:23 11:11 12:9 20:9, 12 21:4, 21 22:12, 20, 24 23:8, 21 29:19 31:4 38:13 39:19 42:25 49:19 50:13 54:13, 16, 19 55:14 56:16, 17, 23 57:17 62:14 64:24 66:1 69:4 72:7 76:20 78:17 81:10 84:10 85:2 86:3, 5, 7 definition 34:18 58:22 dependent 12:10 depends 69:1 70:21 71:8 84:7 DEPOSITION 1:5, 13 86:11, 12 derived 41:12 45:5	describe 13:2, 13 15:20 28:6 48:18 described 12:20 27:1 39:9 62:25 63:8 describes 27:23 describing 10:21 48:1 design 31:10 32:7 designed 28:14 37:1 51:5, 10 desired 51:7 58:5 detail 22:10, 11 38:17 40:1 74:21 detailed 38:23 details 32:13, 16 33:5, 10, 11, 15 36:2, 3, 15, 18, 19 46:3, 4, 6 49:5, 14 50:14 54:2 55:6, 8 57:5 62:16 67:22, 25 68:6, 9, 13 69:9, 12, 15, 18, 20, 21 71:20, 23 72:12, 19, 22, 23 73:18 74:20 75:2, 3, 5, 6, 24 76:1, 5, 8 77:13 79:16 82:20 83:5, 11, 22 84:8, 21, 22 develop 27:11 developed 40:4, 18 66:5 developing 59:6 device 8:14 17:25 19:4, 15 20:6 21:1 24:23 25:3, 7 27:4 29:2 31:12, 16, 24 32:2, 9, 23 34:25 36:25 37:10, 21 40:23 53:2 58:8, 12 59:12 60:5 62:5, 25 73:14 74:1 DEVICES 1:6 13:19 14:6, 22
--	---	--	---

15:12, 22 16:1 24:3, 7, 8, 9, 15 25:18, 20 26:14 27:1, 9, 14, 15, 22 40:22 52:23 56:11, 13 66:3, 4 73:11 device's 30:2 37:19 diabetic 16:5 diagnose 7:24 8:22 9:9 10:16 diagnoses 41:19 42:16, 19 diagnosis 9:7 21:17 41:5, 13 diagnostic 7:20 8:19 did 6:15 10:11 11:9 15:7 21:20 25:12 51:2 62:1 86:3, 7, 10, 12, 14 didn't 16:1 56:16 different 5:17 14:10, 21 18:12 22:6 27:13 28:3 33:9 51:12 56:9 58:21 59:25 60:3, 10 61:22 62:12 64:10 71:7 75:20 77:20, 21 83:4 difficult 40:21 digital 51:5 digits 66:6 DIRECT 3:4 4:6 directly 19:4 30:3 34:24 35:12 37:21 54:5 56:8 76:14 disclose 30:2 71:11 74:7 disclosed 71:25 78:2 81:17 discloses 9:23 10:7 11:2, 16 12:5, 11 20:24	27:23 28:3 37:19 71:15 79:25 80:5 disclosing 74:23 75:24 82:5 disclosures 67:6 68:1 discuss 39:7 discussed 70:14 74:15 86:8 discussing 5:1, 8, 9 22:22 47:15 59:3, 17 70:8 73:1 discussion 64:11 67:14, 16 73:4 discussions 86:7 disorders 7:24 8:23 9:9 10:17 40:19 82:17 display 11:3, 17 28:20 60:1 displayed 47:20 48:22 dissertation 25:5, 12, 21 distance 51:14 52:3, 7, 10, 14 67:11, 18 69:13 71:5, 13 distances 56:12 Do 4:15, 18, 20 6:1, 9 7:2, 4, 8 8:9 11:5, 6 14:3 15:2, 3, 6, 9, 17, 18, 23 16:13, 18, 19 17:5, 6, 12, 13, 22, 23 18:2, 3 21:10, 11 24:5, 25 25:6, 9 28:8, 10 33:17 34:9 37:12, 14, 23 38:11 39:6 41:5, 6 47:24, 25 51:16, 17 52:13 53:11 55:16 58:9, 10 60:22 61:4 62:3 63:9 64:18 67:18	68:6, 12 69:18 71:14 72:21 73:3 74:20 75:22 83:23 87:6 doctor 45:15, 16 48:2, 19 49:10 50:3 66:25 82:14, 16 85:17 doctors 41:23 doctor's 52:18 81:3 document 5:1, 8 documentation 30:6 76:17, 23 documents 4:24 Does 8:1 29:2, 3 35:7, 8 43:22 48:18 49:4, 24 50:18 57:12 66:17, 23 67:21 71:11 73:17 74:19 75:2 doesn't 32:12 33:4 34:16, 19 36:2, 17 40:15 60:17, 21 66:9 69:20 74:6 75:25 81:22 doing 23:12 28:3 30:20 42:8 71:23 73:7, 22 Dolphin 2:12 done 15:14 26:9 27:6 61:19 78:25 don't 5:2 7:11 19:18 23:2 33:20 34:2, 15, 21 35:20 58:14 59:4 61:9 63:16, 18 64:22 65:24 79:14 81:5 82:10 83:17 door 47:23 48:6, 11, 25 DOUGLAS 87:3	down 25:15 69:1 72:17 73:2, 9, 22, 23 downloaded 4:16 6:4 17:24 19:3 47:9, 17 downloading 18:6, 17, 25 19:5 downloads 17:19 Dr 4:8 47:5 85:5 86:1, 4, 8, 13, 18 drafting 6:15 Drive 2:12 50:4 dropped 47:6 duly 4:4 dumb 25:3, 7 27:1, 4 during 78:24 < E > e.g 17:10 earlier 21:20 28:1 29:9, 18 38:9 41:20 53:14 54:21 55:20 61:11 62:15 64:12 66:2 77:19 earliest 26:1 28:1, 2 early 15:11 26:13, 25 27:7 earphone 59:24 60:10, 15 64:7 65:4, 11 earphones 64:9 65:17 easily 26:11 effect 22:1 52:13 efficiencies 22:18 36:9 50:9 55:3, 5, 11 57:1, 2, 15, 20 69:25 72:3 75:9 efficiency 30:22 38:7, 21 44:24 45:4, 11 53:15, 16
---	---	---	--

54:8, 17, 25 55:14, 17, 18, 23, 24 57:9, 10 efficient 22:20 48:14 72:2 83:12 84:13 efficiently 69:18 eighty-seven 87:11 either 17:1 31:25 35:13 47:15 51:14 61:15 embodiment 59:21 60:7 64:4 emergencies 41:8, 14 employed 58:4 enable 25:18 44:17 45:9, 11 74:6 77:16 enabled 46:1 73:11 encrypted 78:22 encryption 78:8, 24 79:4, 6, 8 enormous 50:20 entered 20:5 entire 58:4 60:18 81:6 entirely 19:15 envisioned 15:12, 21 equate 33:18 equivalent 58:11 especially 29:10 61:10 essentially 13:9 Ethernet 28:17 31:25 35:13 37:3 74:11 evaluate 45:1 56:3 event 87:17 everything 21:22 54:19 56:23 67:13 exactly 52:11	EXAMINATION 3:4 4:6 examined 4:5 example 16:11 17:14 19:20, 22 20:22, 24 22:4, 5 23:3, 10, 14 24:16 25:5, 11 27:8, 12, 14, 15, 19, 22 29:7 36:16 40:11, 12 41:9, 16, 21, 22, 24 43:4 45:13, 23 48:5, 11, 14 49:3, 6, 9 50:19 54:3, 21 57:16 59:7 61:7 65:25 66:8, 24 67:6, 8 68:3, 24 69:11 71:22 72:16, 21 74:25 75:1 79:1 82:9, 16 83:2, 15 84:16, 19 examples 14:20 15:20, 22 16:4 26:22 40:10 41:15 42:13 46:9 55:21 57:3 excitement 24:18 exemplary 14:22 exhaustive 13:12, 20 Exhibit 4:13 6:7 15:16, 17 17:15 28:23 47:6 57:23 EXHIBITS 3:10 16:21 exist 77:17 expand 44:5 55:14 expanded 41:2 expending 45:2 56:4 Expires 87:25 explain 32:25 explained 27:3 29:9 30:19 31:1	32:16 33:7 38:24 41:16, 20 42:25 45:12 50:2 54:12 55:19, 21 56:7, 22 57:13 63:12, 15 67:21 71:18 73:5 84:8 explaining 73:20 Explorer 6:4 extend 51:20 extent 19:19 < F > facility 40:23 83:4 fact 30:25 fair 5:4 11:12 far 8:2 9:11 22:23 51:20 62:6, 20 68:4 69:1 78:10 85:24 fashion 18:2 F-cellular 35:14 Field 58:3, 13, 22, 23 59:1, 11, 13 61:14, 16, 19 62:3, 4, 5, 9, 11, 22 63:13 File 6:4 78:21 79:14 81:25 files 79:14 fill 71:22 final 52:7 86:2 find 4:17 11:9 fine 43:19 firmware 61:23 63:7, 11, 14 first 4:4 9:22, 25 10:9, 11 11:1, 15 13:1, 6 16:3 19:13 20:1, 4, 23 31:21 38:3 39:24 41:16 51:4 61:25 76:13 79:1 five 43:22, 24	flat 78:21 79:13, 14 81:25 flexibility 30:22 58:7 following 4:1 47:2 follows 4:5 foregoing 87:7 forget 52:11 format 28:20 60:1 forth 18:20 20:12 22:11 29:18 31:4 33:16, 24 35:3, 21 38:24 39:18 49:18 56:18 62:17 64:24 69:4 84:10 forwarded 20:7 found 4:20 7:19 8:8, 18, 25 four 15:22 FPGA 58:16, 17, 18, 19, 23 59:3, 6, 13 61:17 62:2, 5, 7 63:2, 8, 11, 12, 14 64:11 FPGAs 58:21 59:4, 5 61:12 62:24 FREEHILLS 2:10, 14 fridge 27:16, 19 front 5:12 full 17:7 41:3 47:14 87:11 FULLER 2:17 functionality 58:21 further 30:5 71:3, 4 73:24 76:17 86:15 < G > gate 63:13 gates 58:19
---	---	--	---

General 1:15 23:4, 11 24:2, 7, 13, 17, 23 39:12 77:7 78:4 87:5, 23 generally 15:16 getting 73:10 82:23 gist 11:20 given 14:21 26:17 53:1 gives 14:20 26:19 74:25 glucose 16:5, 11, 12 go 4:24 5:2 10:13 19:21 28:11 29:24 32:12 40:22 41:7 45:23 58:23 59:11 62:2, 4, 10, 20, 22 69:5 71:3 72:16, 19 83:9 going 4:14 11:10 13:15 22:8 31:7 36:23 41:20 44:23 61:13 69:24 70:7 good 4:8, 10, 23 43:21 50:25 gotten 29:21 Ground 6:25 21:5 grounds 7:7, 9, 13, 15 guess 78:18 < H > had 4:2 23:22 25:14, 20 43:8 47:2 53:2 56:21 61:18 66:4 73:9, 21 happening 39:15, 16 hard 4:18, 21, 24	hardware 59:6, 9 61:8 63:15 64:17, 21 hardwired 47:16 has 5:24 28:13 49:7 51:22 52:10 58:19 63:8 67:11 70:15 72:2, 15 76:6 79:11 84:3 HASTINGS 2:6 have 4:15, 18, 21 6:1, 3, 9 7:1, 19 8:8, 18, 25 10:19 12:22 13:11, 14 14:16, 21, 22 15:2, 4, 15 16:18 19:4, 10 21:5, 13 22:2 23:22 26:6, 8, 11, 14 27:4, 5, 10, 25 28:15 29:3, 6, 11, 20, 21 30:1, 14 31:3, 10, 11, 20 32:7, 8, 14, 17 33:8, 12, 13 34:16, 19 35:10 36:7, 14, 18 37:12, 14, 17, 23 38:11, 12 39:1, 7, 24 42:2 43:25 44:12, 16, 18, 20 45:9 46:5, 7, 10 47:8 48:3 49:20, 24 50:4, 12, 16, 21, 22 51:5, 23 53:25 54:7, 10 55:4, 9 56:6, 21 57:4, 18, 19 58:6, 23 59:11, 18 61:1, 8 62:2, 4, 10 64:17, 25 66:21 67:9, 10, 12, 23 68:8, 10, 14, 17 69:12 70:3, 24 71:1 75:4, 11, 15 77:14 78:5, 8, 14, 20, 23 81:23, 25 83:4, 15, 25 84:1,	14 85:3, 14, 21 86:4, 7, 15, 22 haven't 21:22 54:18 56:22 60:17 he 42:9 45:17 head 7:11 21:23 22:9 52:12 67:14 68:25 heading 21:5 health 85:4, 18, 22 heart 16:7 help 11:7 41:8, 13 helpful 27:18 her 45:17 HERBER 2:10, 14 hereunto 87:18 high 71:1 highly 49:20 50:16 75:12 83:12 his 45:16 home 42:10 45:17 48:15 52:17 homes 24:10 hospital 45:24 hospitals 24:11 hundred 49:11 hypothetical 35:6 84:19 < I > Idem 16:18 identified 23:16 identify 5:16 40:18 41:8, 14 44:8 If 4:12, 25 5:8, 15 6:20 8:6 9:19 10:13, 22 12:4, 8, 21, 23 17:2 18:22, 23 20:16 21:3 23:2 27:4 34:3, 19 35:11 38:1, 13, 15 40:3, 17 41:9	43:14 45:15, 16 47:7, 10 50:25 52:21 53:2, 8 56:7, 9 59:14, 19 60:18 61:2 63:19 66:16 67:16 75:19 77:8 78:3 79:16 81:6 82:7, 9, 11 83:13 84:9 85:23 immediately 22:2, 14 53:22 impaired 16:7 implanted 15:13 implants 16:6 implement 14:9 28:7 31:11, 15 32:8 69:19 75:23 implementation 26:10 32:2, 13, 16, 23 33:5, 11, 15 36:2, 3, 14, 17 42:12 46:3, 4, 6 49:5, 13 50:14 54:2 55:6, 8 57:5 62:16 67:22, 24 68:6, 9, 13 69:9, 12, 15, 18, 20, 21 71:19, 23, 25 72:11, 18, 22, 23 73:3, 18 74:20, 21 75:3, 6, 24 76:1, 5, 8 77:12 82:19 83:5, 11 84:7, 13, 20, 22 implementations 39:13 implemented 26:25 33:6 36:5 70:21 implementing 33:9, 14 72:24 74:12 improve 21:14 22:3, 16 29:13 31:9 32:6
---	---	---	---

improved 38:7 54:25 improving 21:19 include 7:9 16:4 80:19 including 30:20 36:8 55:4 57:1, 21 62:19 85:16 inconvenience 15:15 inconveniences 50:7 incorporate 9:1 23:6, 23 25:16, 17 29:12, 16 31:5 49:21 50:16 54:13 59:22 60:8 61:20 64:5 65:1 70:6 72:9 75:12 incorporated 84:11 incorporates 28:17 71:7 incorporating 29:22 30:16 39:4 42:3 55:11 82:2 increase 58:7 INDEX 3:3 indicate 64:13 individual 44:10 industries 13:15 industry 24:19 38:4 39:16, 22 54:22 information 6:12 9:17 27:16 35:5 37:11 38:6, 19 40:25 41:1, 11 45:18, 25 49:25 54:24 67:1 initials 74:19 instance 84:1 instant 40:3, 13, 15, 17 intelligence 25:9	intelligent 24:14 28:8 66:3, 4 73:11 intent 71:16 interactive 17:19 interested 82:17 87:17 interface 17:19 35:8 intermediary 19:14 Internet 17:10, 17, 18 20:15, 19 23:14 24:2, 4, 5, 16, 23 25:3 26:15 27:2 39:23 involve 65:23 involved 45:21 48:4 64:17 IoT 38:4 39:22 54:23 IPR 6:13 IPR2025-00158 1:3 isolated 34:20 issues 54:7, 8 items 23:18 its 7:21 8:20 21:16 28:12 29:2 31:23 34:2, 20 35:13 36:5, 24, 25 37:9 49:2, 8 51:5 52:17 53:3 58:6 68:21 70:9 71:12 74:7, 10 < J > jack 47:16 Java 59:4 JEFFREY 2:17 jeffrey.price@hsfk r.com 2:19 JENNA 2:17 jenna.fuller@hsfkr amer.com 2:20	< K > kept 81:11 key 24:20 kin 87:14 kind 19:3, 5, 23 21:1 24:19 25:7 27:7 35:22 39:13 61:15 66:25 78:21, 25 79:16 84:17 kinds 24:7, 9 73:10 Kirkness 86:4, 8, 13 know 5:2 10:24 12:24 15:11 45:13 71:3 knowledge 75:15 known 13:11, 14 14:22 16:15 17:9 18:2, 5, 16 19:8, 10 20:14, 17 26:7 27:5, 20, 25 78:8, 23 85:14 KRAMER 2:10, 14 < L > laid 7:13, 16 LAN 28:16 31:25 74:11 language 29:8 laptop 5:24 large 34:9 44:7, 13 53:16 75:8 80:24 81:10, 16 82:21, 25 larger 83:18 last 6:18 51:9 66:12 late 6:18 13:5 LAYDEN 2:12 3:4 4:7 8:12 14:12 18:8, 13	19:11 46:12, 15 47:4 86:15, 18, 22 level 65:23 78:5 light 61:10 limit 70:15, 19 limitation 70:11 limitations 51:22 52:11 67:11 72:15 limited 24:8 48:10 67:3 68:21 limiting 60:23 limits 49:8 LISA 2:6 lisanguyen@paulh astings.com 2:8 list 13:12, 21 15:22 38:5 39:6 40:25 listed 14:16 15:25 39:24 little 26:17, 23 31:18 44:1 lives 24:10 LLP 2:6 local 37:3 locally 61:14 located 17:18 62:21 68:4 69:13 location 9:25 10:9 47:21 48:16, 23 50:5 51:12 83:21, 24 84:23 locations 22:7 27:13 44:21 62:20 83:4, 8, 9 84:4, 6, 18 long 6:15 56:12 74:16 look 4:12 6:6 12:4 19:24 23:3 38:1, 15 43:14 59:19 61:3 69:17 71:21 72:24 76:2
---	---	---	--

looked 31:10 32:7, 15 36:18 67:23 68:8 75:4 looking 5:11, 12, 15, 17 23:25 28:5 29:24 41:2 46:5 57:11 66:12 71:18 lot 22:10, 11 24:18 34:9 35:9 36:20 38:23 50:7, 8, 10 54:10 56:11 69:8 76:6 82:4 low 54:8 56:10 70:25 < M > main 47:16, 19, 21 48:24 mainframe 30:5, 9, 10 31:15, 24 32:22 33:3, 18, 21 34:1, 2, 6, 7, 12, 15, 16, 23 35:9, 15, 19 37:22 76:16, 22 77:4, 7, 9 78:2, 12 79:11, 20, 24 80:2, 8, 19 81:2 82:7 83:20 84:2, 5, 16 mainframes 34:8, 10, 11 79:13 making 23:12 24:7, 13, 14 35:24 46:2 66:3 73:10 74:22 manner 76:24 MARKED 3:10 market 20:5 23:4, 11 24:2, 19 39:12 69:23 matter 4:14 30:24 81:22 mean 8:6 11:25 14:3 48:20 52:9, 13, 14 61:5, 9 63:1 66:9, 20	73:17 75:18 83:23 means 19:2 29:3 37:12 62:5 meant 13:12, 20 53:6 59:9 measurement 17:20 mechanism 26:3, 19 MEDICAL 1:6 15:12, 21, 25 19:16 20:6 24:8 41:8, 14 66:15 78:4, 14 82:14, 16 83:3 85:16 meet 4:9 12:19 meeting 4:10 45:3 56:5 memorized 21:22 54:19 56:23 57:18 67:12 memory 81:7 mention 55:17 57:10 mentioned 29:18 30:23 36:6 53:13 55:2 mentioning 44:19 meters 51:24 52:12 70:16 74:14 method 71:11 74:7 methods 74:5 microcontrollers 25:17 microprocessor 30:3 37:20 58:4 microprocessors 25:16 mid 6:18 miles 49:10, 11 52:18 53:1, 4 minutes 43:22, 24 46:14	mischaracterized 61:25 mischaracterizing 63:10 missed 13:8 missing 68:12 69:15 71:20 72:12 84:8 MIT 25:5 Mm-hmm 70:18, 23 73:19 77:3 MOBILE 1:5, 13 10:1, 10 13:1, 18, 19, 23 14:15 19:4 27:21 29:16 79:2 mode 51:7 Modem 28:17 32:1 35:14 37:4 51:15 74:11 modify 7:20 8:19 module 47:16, 19, 22 48:24 moments 67:9 monitor 5:23, 25 10:1, 10 16:11 monitoring 48:2, 19, 21 51:10 monitors 16:5, 7, 12 montage 28:19 60:1 morning 4:8, 10 39:1, 20 43:1 53:14 motivated 21:14 49:20 50:16 54:17 68:17 74:4 75:12 85:4 motivation 21:9 23:5, 23 29:11 31:3 57:8 81:12 82:24 motivations 22:11 23:15 56:20 70:4 76:9 77:22	motor 66:8 Moving 76:12 multiple 7:7 19:2 22:4 28:14 30:20 37:1, 10 41:22, 23 57:15 70:9 multitude 22:13, 17 26:8 27:24 29:20 30:15 32:18 36:8 43:1 46:8 49:16, 20 54:1 55:10 56:19 57:20 62:18 64:25 68:15 70:2 83:12 < N > naming 57:15 naturally 31:10 32:7, 14 67:23 68:8 71:21 75:4 Nebraska 1:16 87:2, 6 necessarily 61:9 need 35:1, 4, 10 40:22 71:4 needed 21:18 neither 52:24 network 31:16 34:13, 17, 19 37:3 76:6 networked 31:12 32:3, 9, 24 33:18 34:3, 18, 21 35:16 networking 25:10 67:7 never 63:11 New 2:18 40:3, 7, 17, 23 62:19 NGUYEN 2:6 5:20 8:4 14:2 85:9 86:17, 24 Nice 4:8, 10 NO 1:3 3:10 30:23 57:9 72:18 75:24 86:15, 17
---	--	--	---

nodes 15:12, 21, 25 Nokia 13:4 Notary 1:15 87:5, 23 November 87:25 Number 4:14, 22 19:8 23:9, 22 33:14 38:25 39:18, 20 46:9 51:23 53:14 58:19 71:19 72:1 75:8 nurse 49:10 NY 2:18 < O > Objection 8:4 14:2 18:8 85:9 observe 28:19 observing 59:25 60:11 obtains 51:14 obvious 7:20 8:9, 18, 25 21:6 Obviously 42:8 off 7:11 21:22 22:9 52:11 58:20 66:8, 11 67:13 68:24 offer 22:17 offers 49:16 83:12 OFFICE 1:1 52:18 80:3, 9, 18 81:3 offices 24:10 84:4 off-the-shelf 25:13 73:21 oh 53:22 Okay 4:20, 23 5:15, 19, 20 6:6, 8, 24 7:17 8:13 9:21 11:24 12:25 15:10 16:17 17:2 24:22 35:11	36:22 43:24 47:9, 12 59:16 72:15 78:13 81:8 once 27:10 57:24 ones 16:24 Online 1:15 open 6:1, 3 47:7 opened 6:8 operate 35:8 operation 18:1, 5 operations 18:16 opining 20:10 opinion 8:2, 7 24:1 40:6 42:20 43:10 45:4 62:23 63:6 67:2 68:20 74:4 81:21 82:12 opinions 6:10 20:12 22:10 33:23 35:3, 21 56:18 78:18 86:8 opportunities 24:20 opposed 62:6 options 31:11 32:8 Orbach 7:2, 5, 9, 25 8:16, 23 9:1, 4, 10, 12, 16, 23 10:7 11:2, 16 12:5, 11 14:1, 4, 10, 13, 18, 19 19:25 20:24 21:6, 17 22:3, 15 23:6, 24 26:1, 9, 19 27:23 28:3 29:13, 22 30:16 31:6, 13 32:10, 15, 19 33:10, 16 35:3 36:3, 19, 21 39:4 42:3, 12, 17, 24 43:5, 16, 17 44:17 45:8, 10, 20 46:2, 3 48:10 49:12, 13, 22 50:8, 10, 11, 13, 17, 23 53:21, 23 54:2, 10, 14 55:6,	12 57:5 62:17 65:1 67:24, 25 68:8, 19 69:7, 9, 11, 17, 21 70:5 71:22, 25 72:6, 9, 22 74:5 75:5, 6, 13 76:2, 4, 6, 10 77:11, 15, 16, 23 78:1, 12 81:17 82:5, 13, 19 83:5, 10, 15 84:11, 22 85:8 Orbach's 12:18 42:20 43:10 44:14 68:11, 13 75:7 82:3 order 50:2 51:24 64:18 71:4 86:23, 24 orders 86:20 ordinarily 25:2 ordinary 7:19 8:8, 18, 25 12:17 13:11, 13 18:6, 15 19:9 20:25 21:13 22:1, 13 23:5, 21 25:2 26:6, 10 27:5, 20 29:12, 19 30:14 31:5, 9 32:6, 14, 17 33:8, 11 36:6, 13, 18 39:1 42:2, 14, 23 43:4 44:16 45:9, 18 46:5, 7, 10 48:9 49:6, 15, 19 50:15, 21 53:12, 17, 21 54:4, 12 55:3, 9, 22 56:21 57:4, 19 62:17 64:20, 24 65:18 67:10, 22 68:7, 10, 14, 18 69:7, 16, 22, 24 70:5 71:2, 21, 24 72:5, 8, 24 75:3, 7, 11, 14, 19, 21 76:2, 9 77:14,	22 79:7, 10, 19 81:1 82:1 83:6, 19 84:13 85:3, 6, 13, 21 outlined 38:12 output 75:16 outputs 28:15 37:1, 10 70:9 outside 18:19 33:22, 24 35:2 39:8 65:25 OWNER 1:7 2:10 < P > p.m 86:25 PAGE 3:2, 3, 4 9:20 10:23 12:8, 22 14:25 15:6, 8 17:2, 3 21:3, 21 47:10 51:1, 2, 3 59:15 85:1 pages 87:11 pair 52:23 Palm 13:5 Palo 2:7 Paragraph 6:20, 22, 23 7:4, 17 9:4, 19, 21, 22 10:12, 14, 18, 19, 21, 23 12:9, 15 13:6 15:6, 8, 10 16:10, 17 17:3, 8 18:11 20:13 21:12 22:24, 25 23:3, 17, 25 24:21, 24 28:5, 9 29:24 30:8 31:8, 19, 22 36:23 37:7, 12, 15 38:2, 3, 16, 18 39:11, 21 40:1, 25 41:2 43:15 44:3, 4, 23 47:13, 14 49:23 51:1, 3, 8 52:4, 8 54:21 55:13, 16 56:1 57:7, 11, 22,
---	--	--	---

24 58:2 59:14, 17, 19, 20 60:18 61:19 63:16 64:3, 12 65:8, 13 66:13 67:17, 20 69:14 70:7 71:17 72:14 74:10 76:12, 13, 20 81:9 82:23 85:2, 11 paragraphs 8:10 13:2 14:17 39:8 54:20 parentheses 16:25 28:16 part 5:9 7:10 29:3 66:5 74:3 81:7 82:10 particular 7:18 13:4 26:3 28:12 parties 47:1 87:15 PATENT 1:1, 2, 3, 7 2:10 4:14, 21 12:20 20:24 28:2 33:25 patient 17:16, 20 19:16 20:6 40:21, 22 41:9 44:7, 10 45:3 47:24 48:2, 6, 12, 19, 25 49:24 50:5, 6 51:12 56:5 62:21 64:16 67:15 68:5 82:9 85:17 patients 16:5 40:2, 16 41:12 44:20 77:21 83:8 84:18 85:6 patient's 20:7, 19 28:19 48:5 52:17 59:21, 23 60:1, 7, 9, 11, 14 64:4, 6, 15 65:4, 10, 17 78:3 patterns 44:9	PAUL 2:6 PC 5:24 19:7 PDA 7:22 8:21 9:5, 14, 17 10:15 14:20 19:22 20:7, 20, 25 26:4, 21 27:22 29:16 30:17 54:10 people 22:4 30:23 41:22 42:6 78:18 85:5, 23 people's 24:9 perform 15:14 62:11 performed 11:21 51:11 performing 66:18, 21 period 16:16 25:23 periods 78:24 permit 51:10 person 7:18 8:8, 17 18:5, 15 21:13 25:1 31:8 32:5 45:3 56:5 66:25 75:14 79:19 81:1 83:19 85:3, 6 personal 17:25 perspective 22:18 63:4 pertaining 6:25 PETITIONER 1:4 2:5 Ph.D 1:6, 14 2:3 4:3 25:5, 11 66:2, 6 73:7, 23 phone 7:22 8:15, 21 9:5, 13, 17 10:15 13:25 14:14, 18, 19 18:7, 17, 25 19:22 20:2, 7, 19, 25 26:4, 20 27:22 29:16 30:17 54:9	phones 13:3, 7 physical 58:18 physically 5:14 physician 22:6 42:8 45:20 48:4 49:9, 24 50:3 67:15 68:3 75:1 physicians 22:5 41:4, 18 44:8, 25 56:3 physician's 45:5 48:15 physiological 17:21 78:3 places 37:22 56:24 57:17 please 6:7 9:20 10:24 12:24 21:4 point 24:6 30:11 35:24 36:12 38:13 40:24 46:2 54:15 55:15 61:2 63:19 69:2, 6 73:9, 10 74:22 82:19 85:20 pointed 23:9 61:11 64:3, 12 69:14 85:12 pointing 9:3 62:14 points 24:21 port 51:6 POSITA 13:25 14:4, 8, 22 24:22, 25 25:1 27:25 39:7 54:16 74:4, 9 78:7, 22 80:18 85:13 POSITA's 80:6 possible 25:16 56:6 potentially 53:6, 11 64:21 83:3 power 22:19 30:21 36:8 50:10 53:15 54:7, 9, 17	55:4, 17, 24 56:8, 10, 13 57:2, 10, 12, 16, 21 70:25 71:1, 4, 9 practitioner 66:16 precisely 27:6 48:7 49:1, 12 pre-dates 25:23 26:1 79:3 preparing 86:3, 5, 11 present 47:1 pretty 7:13, 15 55:25 74:16 Previously 39:14 51:18 61:17 63:8 70:14 73:1, 14 77:2 PRICE 2:17 prior 4:22 27:25 48:8 80:17, 21 86:6 priority 14:23 19:24 26:2 28:1 79:3 probably 53:6 problems 53:15, 17 proceedings 4:1 47:2 processing 34:10 processor 9:24 10:8 27:8 professional 19:17 78:14 87:5, 23 program 17:17 58:5 63:14 programmability 59:13 programmable 58:22 59:1, 2 62:10 63:13 programs 59:3 projected 73:23
--	---	--	--

proposed 85:8 protect 78:6 protocol 52:1 54:9 56:10 61:7 71:8 protocols 17:10 20:15, 18 67:7 78:6 provide 15:19 16:4, 12 17:14 19:12 33:4 36:2, 17 38:4, 5 40:12, 21 41:4, 18, 24 46:4 49:4 67:21 68:15 69:11, 20 74:19 75:2, 5 79:16 83:22 85:4 provided 39:23 54:23 85:17 provider 85:18, 25 provides 26:9 33:10 36:3 42:21 43:11 49:13 50:13 55:6, 8 68:12 69:21, 25 72:1, 23 77:12 82:19 83:11 providing 12:10 13:10 32:15 41:12 46:6 76:4 85:22 proximity 51:23 85:19, 24 PST 1:17 Public 1:15 87:5, 23 pulled 37:8 purchase 40:23 put 23:7 80:25 83:14 putting 27:7 62:19 < Q > question 5:4 18:18 19:19	26:18, 23 31:22 32:5, 20 33:21, 22 34:1, 4, 14 35:2 43:9, 14, 18 48:17 52:15, 21 63:21 65:7 70:12 71:7 73:25 74:17 77:1 78:9 79:17, 23 80:12, 14 82:11, 18 83:23 questions 35:9 43:25 86:2, 16, 17 quick 61:1 quotations 28:22 quote 18:20, 21, 22 30:7 37:5, 7, 24 62:22 76:19 quotes 28:25 37:15 quote-unquote 27:4 quoting 18:11 Quy 17:15 < R > radiofrequency 37:2 range 49:8 rational 56:20 70:4 read 10:3, 5, 6, 11 11:16 18:11 26:11 31:21 37:5, 7 60:18 81:6 readily 19:10 25:16 26:7 33:12 36:7, 14 39:2 44:16, 21 45:19 46:7, 11 49:15 53:22 54:13 57:19 71:3 76:3 79:8 82:2 reading 16:1, 9 23:20 29:9 31:19 64:1, 2 72:6 74:9 ready 28:7	really 20:11 33:20 36:12 44:19 58:25 61:13 62:15 69:2 71:8 81:22 82:22 realtime 38:19 41:1, 4, 11 43:16 47:20 48:1, 13, 18, 21, 22, 23 49:24 54:24 real-time 38:6 41:17 reason 50:22 reasons 22:13 23:5, 22 31:4 49:20 56:20 64:25 70:3 72:8 76:8 77:22 recall 7:11 67:16, 18 73:4 receive 34:24 40:3, 7, 17 52:25 receiver 28:18 59:22 60:8, 13 61:16, 21, 24 62:9 64:5 65:15 receives 10:1, 9 receiving 28:20 60:2 78:3 Recess 46:16 recognize 7:3 recognized 38:4 39:8, 22 54:22 record 5:13 86:21 recorded 66:14, 17 recorder 47:15 reduced 87:9 reduction 38:8, 22 44:25 45:5, 11 55:1, 15, 19 57:9 Redwood 2:13 refer 4:23 reference 5:10, 12, 17 7:1, 2, 5, 6 17:15 18:12 19:25 20:23	28:23 29:1 35:25 38:2 42:24 43:6 47:7, 11 49:2 53:21, 23 57:24 72:6 76:19 referenced 13:5, 8, 24 16:25 18:10 19:6 39:25 43:8 44:4, 12 55:15 59:19 80:25 references 5:3, 7 21:9 35:4 49:5 referencing 10:18 16:20 referring 7:5 16:23 38:9 61:13 80:21 refine 35:11 refresh 81:7 refrigerator 25:8 regard 60:16 regardless 30:25 regards 25:25 30:21 34:1 40:5 44:11 63:16 65:14 67:20 73:25 77:19 81:8 Registered 87:4, 23 related 20:11 25:6 78:19 relational 80:15 81:24 relay 7:22 8:21 9:5 10:15 relays 9:17 30:17 relevance 35:20 64:22 78:17 relevant 16:15 19:9 27:12 56:16 78:23 relies 8:14 relying 9:12, 15 remember 67:13 68:4, 24 80:22 81:5
---	---	--	---

remote 7:23 8:15, 22 9:6, 18, 23, 25 10:7, 9, 15, 17, 18, 20 11:4, 18, 23 12:1, 3, 5, 12, 15, 18 14:7, 8 17:10, 18 19:14 20:3, 8, 15, 18 21:2, 16 24:17 26:21 29:17 30:2, 18 37:18 41:21 42:21 43:11 44:14 52:18 53:4 61:24 62:19 69:12 71:12 74:8, 14 77:8 78:1, 11 81:16, 18, 19 82:5, 12 83:7, 10, 15, 21, 23 84:15 remotely 1:14 2:2, 3, 10 45:1 56:2 58:25 62:4 65:5, 11 remove 42:4 44:19 82:22 removed 47:21 48:23 removing 84:24 rendered 6:10 renders 21:6 replaced 58:6 report 9:20 37:8, 23 reported 47:19 48:22 REPORTER 3:4 86:20 87:5, 23 reports 30:4 34:24 35:13 36:11 37:21 76:15, 21 77:4 repository 16:8 represent 8:1 representative 13:21, 22, 25	14:17 represents 8:6 reprogram 58:24, 25 reprogrammable 58:3, 14 Requests 86:20 research 30:6 76:17, 23 researcher 28:18 59:23 60:9, 14 64:6 65:3, 10, 16 66:15 researchers 61:21 reside 15:13 resident 17:17 RESMED 1:3 resource 19:3 resources 45:3 56:5 respect 38:17, 18, 20, 21 40:2 44:6, 24 57:8 responses 28:19 60:1, 12 66:13, 17 rest 79:9 restate 63:5 restroom 43:20 resulting 65:20 retinal 16:6 review 61:2 63:20 86:12 reviewing 53:21 69:7 75:6 RF 28:16 31:25 53:3 70:11, 19, 20, 22, 24 71:7, 13 72:21 73:3, 13, 17, 25 74:10, 13, 19, 21 75:16, 21, 25 right 5:10 23:9 37:19 73:6 84:2 room 5:21 21:25 29:7 45:15 47:22, 23 48:5, 6, 11, 24, 25 66:25 67:4, 6,	15 68:5, 22, 25 69:5 72:17 74:8, 15 75:1 rooms 69:1, 2, 5 72:17, 20 Rooney 1:15 87:4, 22 RPR 1:15 87:22 run 56:13 58:17 59:4 runs 58:18 < S > SANDEEP 1:6, 13 2:3 4:3 87:7 satisfy 24:23 saying 5:6 19:25 20:22 32:5, 11 35:17 37:9 40:9, 20 41:10, 19 42:11 45:7 48:21 52:6 56:1 59:5 60:6, 20, 25 61:3 63:20 64:10, 19 72:20 74:17, 20, 23 75:25 80:14 81:25 says 9:8 14:19 29:7 59:20, 21 66:10 scalability 77:13, 15 scenario 53:12, 18 schools 24:12 scope 33:22, 24 65:25 screen 6:2 28:21 60:2 se 59:8 74:22 79:15 seal 87:19 searching 5:2, 6 second 9:24 10:8 40:24 41:3 58:2 Section 12:22 13:8, 9, 17 21:4	23:19 39:14 81:13 sections 13:16 security 78:5 see 5:14 7:4 11:5 15:2, 6, 9, 16, 17, 23 16:1, 9, 13, 18 17:5, 12, 22 18:2 21:10 28:8 35:11 41:5 47:24 51:16 58:9 60:20 63:16, 18, 19 64:22 65:24 seeing 64:13 seen 61:1 83:9 send 19:23 30:12 74:13 sense 63:3 sensor 7:22 8:20 9:5, 13, 16 10:1, 10 14:5 15:11, 21 19:20, 21 20:2 21:1, 16 37:1, 10 sensors 13:18 17:5 28:14 66:24 70:9 sensory 15:25 66:13, 16 sent 6:5 65:19 66:7 82:7 sentence 9:22 10:11 11:1, 8, 15, 24 12:4 15:19 16:3 17:7 31:21 37:16 38:3 41:3 47:14, 24 48:1, 17 51:4, 9, 16 52:8 58:2, 9 59:21 64:1, 2 65:9, 14 66:12 76:13, 14 85:12 separate 15:22 September 1:17 87:19 serve 84:17
--	--	---	--

server 9:24 10:7, 18 11:4, 18, 21, 23 12:1, 3, 5, 12, 16, 18 14:8 17:18 19:5, 14, 23 20:3, 8 21:2 26:5, 22 29:17 30:9, 11 41:21 42:21 43:11 44:14 52:18 53:4 69:12 71:13 74:8, 14 77:8 78:1, 11 81:17, 18 82:5, 13, 15 83:7, 10, 15 84:15, 17 servers 23:14 24:17 services 85:16, 23 set 18:20 20:12 22:11 29:18 31:4 33:16, 23 35:3, 21 38:24 39:18 49:18 56:18 62:17 64:23 69:4 84:10 sets 44:7, 13 80:24 81:11, 16, 19 82:22, 25 83:18 Shores 2:13 shorthand 87:8 should 11:13, 15 12:2 28:25 80:1 show 20:9 25:12 60:18 66:18 sic 65:8 side 52:25 53:1 signal 52:22 signature 87:19 significant 23:22 48:9 significantly 25:15, 22 28:1 siloed 41:25 76:25 siloing 77:5, 10	silos 42:4, 16 44:19 77:2, 17 82:22 83:17 84:24 similar 76:3, 18 simply 8:7 13:21 34:1 52:22 56:11, 13 60:23 66:10 68:7 69:17 single 66:6 site 17:10, 17 20:15, 19 sites 9:25 10:9 sitting 34:20 67:1 size 25:14 skill 7:19 8:8, 18, 25 12:17 13:11, 13 18:6, 15 19:10 20:25 21:13 22:1, 14 23:6, 21 25:2 26:6, 10 27:5, 21 29:12, 19 30:14 31:5, 9 32:6, 14, 17 33:8, 12 36:7, 13, 18 39:1 42:2, 14, 23 43:5 44:16 45:9, 18 46:5, 7, 10 48:9 49:7, 15, 19 50:15, 21 53:12, 17, 21 54:4, 12 55:3, 9, 22 56:21 57:4, 19 62:17 64:20, 25 65:18 67:10, 23 68:8, 10, 14, 18 69:7, 17, 22, 24 70:5 71:2, 21, 24 72:5, 8, 24 75:4, 7, 11, 14, 20, 22 76:2, 9 77:14, 23 79:7, 10, 19 81:2 82:1 83:6, 19 84:14 85:3, 6, 14, 21 sleep 7:20, 24 8:19, 23 9:9 10:16 11:13, 16	21:14 30:1 37:18 40:19 79:21 80:9 82:17 sleeping 47:24 48:7 49:1 51:13 smart 23:13 25:21 51:5 66:3, 4 73:11, 14 74:2 smartphone 13:7 SMITH 2:10, 14 software 17:17, 24 18:7, 17, 25 19:2 27:8, 11 40:3, 13, 16, 17 58:12, 15 59:5, 8 60:4, 17, 19, 21, 25 61:3, 9 62:19, 25 63:9, 17, 18, 20, 23, 25 64:14 65:23 66:9 somebody 29:6 48:4 space 25:6 spatially 47:21 48:23 specific 7:15 17:16 19:21 79:25 84:22 spectrum 71:8 spoken 66:22 ss 87:2 stand-alone 40:21 standing 86:22, 24 starting 23:16 starts 15:7 State 1:16 7:17 9:23 10:14 12:11, 23 13:17 15:10 16:10 17:8, 16 20:13 21:12, 20 28:7 29:25 31:8 36:23 37:16 38:3 41:7 44:24 54:16 60:17 85:2 87:2, 6	stated 14:14, 16 31:20 32:1 50:13 65:24 72:7 statement 10:4 11:5 30:8 STATES 1:1 11:1 40:16 51:4, 9 58:3 76:14 stating 8:7, 24 12:4, 17 44:15 49:2 50:12 64:4 station 11:3, 18, 22 12:1, 3, 6, 13, 16, 19 statistics 16:8 sticking 84:1 stimulate 64:16 stimulator 64:15 stimulators 59:24 60:9, 15 64:6, 9 65:4, 11, 17, 20 stopped 41:9 storage 51:5 78:24 store 79:6, 24 80:3 81:19 stored 78:21 80:1 81:23 storing 76:23 77:3 structure 79:14 81:22 submitted 6:14 submitting 86:6 subsection 13:1, 24 15:1, 4, 5, 7 17:3 21:4 successfully 51:25 Suite 2:13 sum 8:1, 7 summarized 39:19 summary 13:10, 22 16:12 sure 5:5 8:5 15:24 16:24 32:4 43:13, 17, 23 44:2
---	--	--	---

48:20 52:9 63:1, 3 66:20 70:13 71:6 73:24 75:18 78:16 80:21 82:18 sworn 4:4 synchronization 18:1, 5, 16 system 7:21 8:20 9:2 19:13, 20 20:4, 23 21:15, 23 22:3, 16 23:7, 24 26:12 28:8, 13 29:9, 15, 21, 23 30:13 31:6, 13, 15, 17, 24 32:3, 10, 22, 24 33:4, 10, 15, 18, 19 34:3, 6, 7, 18, 22, 23 35:7, 15, 16, 19, 23 36:4, 5, 19, 21, 24 37:22 39:5 42:1, 12, 17 45:8 49:22 50:17, 23 51:4, 9 53:10, 24 54:14 55:12 57:5 65:2, 6 66:18, 23 68:19 69:10, 19 70:6 71:22 72:10, 25 74:1, 23, 24 75:4, 13, 23 76:3, 5, 11, 16, 22 77:4, 11, 15, 16, 24 78:2, 22 79:3 80:2, 4, 8, 11, 19 81:25 82:3 83:21 84:3, 5, 12 85:7 systems 14:11 16:15 23:12, 13 24:14 34:12 38:4 39:22, 23 54:23 79:2 < T > take 6:15 9:1 25:6, 12 27:11 43:20 46:13	59:10 61:3 70:5 83:14 taken 1:14 46:16 87:8 talk 13:15 24:5 57:18 66:23 81:9 talked 23:18 25:25 26:18 39:10, 15 57:22 62:13 64:21 66:2 67:8, 9, 19 72:13 73:16 77:1, 11, 19 talking 16:14 18:9 21:24 23:3, 10 24:8 25:23 26:16 38:16, 18, 19, 21 39:12 41:17 43:8, 16 45:14 48:3, 8 49:3 53:18 54:20, 22 55:18 58:13, 15, 16 60:13, 19, 21, 24 61:11, 20 62:15 64:8, 14, 15 65:6, 13, 15 69:3 72:14 73:6 74:10 76:25 77:6, 7 78:10 79:4 80:22, 23 81:15 84:20 85:13 talks 26:2 35:25 56:24 67:5 74:18 targeting 85:7 tasks 15:14 taught 7:24 8:23 9:9 14:18 21:15, 17 28:12 29:14, 25 31:11 32:8 33:16 36:24 37:17 54:10 74:5 teach 29:2 teaches 14:4 29:5 31:1, 2 32:11 33:1 36:21 37:9 teaching 9:1, 2, 3, 12, 15 30:12	42:21 43:10 44:17 45:10, 20 49:21 50:1, 8, 9, 11 53:23, 25 82:3 teachings 9:11 14:9, 13 22:2, 15 23:6, 23 28:6 29:13, 22 30:16 31:6 32:19 39:4 42:3 45:8 49:14 50:15, 17, 23 54:14 55:7, 12 65:1 67:24, 25 68:11, 13, 18 70:5 72:9 75:7, 12 76:10 77:16, 23 84:11 tech 39:14 technical 12:23 13:16 22:18 39:3 63:3 techniques 79:8 technological 43:2 49:17 53:14 54:11 55:10 57:1 68:15 70:1 72:3 75:9 technologies 13:24 14:10, 16 technology 14:18 15:1 17:4 23:19 58:3, 14 67:7 telemedicine 85:15, 22 television 25:8 tell 6:17, 19 11:25 70:10 80:20 telling 48:15 63:17, 22 Ten 46:14 term 80:13, 17 terms 43:14 60:22 68:5 73:18 80:16 testified 4:5	TESTIMONY 3:3 62:1 63:11 73:15 81:6 86:12 87:7, 12 tether 19:7 Thank 10:13, 22 12:21 38:1 40:24 46:12 86:1 therapist 79:22 84:2, 3 therapist's 30:4 32:21 33:3 76:15 80:3, 9, 18 thereof 87:17 The's 64:4 things 14:5 22:19 24:3, 6 39:23 61:13 64:16 78:19 think 6:18 9:8 11:13 12:2 13:9 14:19 16:14, 23 19:1, 18, 24 20:21 23:2, 8, 10 24:6 26:17 27:3 31:19 32:25 33:20, 25 34:2, 7, 14, 16 35:17, 21 37:5 38:10 39:10 40:9 41:15 52:5, 12, 20, 21 53:5 54:18 56:16 58:15 61:6, 25 65:12, 14 67:5 68:23 70:15, 20 73:5 74:17 75:21 79:14 81:21 82:11 85:10 third 17:7 47:14 59:20 thousand 49:11 three 37:15 tie 44:3 time 5:1 6:13, 19 10:6 16:15 19:1, 9 25:23 43:21
---	---	--	---

69:24 73:12 78:23 86:16 times 71:19 TIMOTHY 2:12 timothy.layden@hsfkramer.com 2:14 today 4:19 38:25 today's 86:11 top 7:11 21:23 22:9 25:13 39:19 52:11 67:13 68:24 total 51:10 touch 22:19 towers 53:9 to-wit 4:2 47:3 toys 25:9 66:4 TRADEMARK 1:1 transaction 79:5, 7 transceiver 53:6, 10 54:6 70:11, 19, 20 71:9, 10, 14 73:13, 17 74:1, 13 75:17, 25 transceivers 25:18 27:9 70:24 71:2 73:3, 8 75:21 Transcription 87:10, 12 transistors 58:19, 20 transit 79:9 transmission 9:4, 13 14:15 19:15 22:20 30:21 31:14, 23 32:21 36:9 37:11 53:16 54:8 55:5, 23 57:2, 21 67:17 68:21 70:10, 15 transmit 7:21 8:20 9:16 14:7 17:9 20:2, 14, 17 21:1, 15 26:20	27:12, 15, 16 28:14 30:1, 3 37:1, 18, 21 51:20 52:3, 6, 14, 21 53:3 56:12 60:22 61:22 70:9 71:4, 16 74:24 76:15 transmits 30:18 35:13 transmitted 11:2, 17, 22 14:6 19:13 20:5 21:24 25:19 26:4, 5 33:2 66:9, 24 77:9 transmitter 51:24 transmitting 36:1 49:4 51:13 52:16 56:8 59:24 60:3, 10 64:10 67:3 71:12 74:7 76:21 78:8 treat 40:19 treatment 82:10 trend 13:18 23:4, 11 24:2, 7, 13, 18, 24 39:12 trends 13:14 44:9 69:23 TRIAL 1:2 28:13 29:5, 10, 15 33:2 36:4, 25 42:5 49:3 59:18 66:14, 22 70:8 tried 26:18 true 87:11 try 79:17 trying 24:21 31:9 32:6, 25 36:13 63:23 68:12 85:11 turn 6:20 9:19 10:22 12:8, 21 14:7 17:2 19:22 21:3 26:21 30:17 47:10 50:25	58:20 59:14 66:7, 8, 10 turning 57:23 85:1 TV 27:15 Twin 2:12 two 21:9 37:14 49:10 52:23 69:1, 5 72:17, 20 type 19:2 30:10 61:7 73:21 85:6 types 14:6, 10 25:19 71:1 75:20 77:20 typewriting 87:9 typically 40:20 62:7 79:13, 15 typo 11:7 typos 11:10 < U > U.S 1:3 unable 52:3, 6 underpinning 8:11 understand 5:5, 15, 19 8:6 12:18 20:16 22:14 32:4 35:2, 5, 20 42:14, 24 43:5, 13, 17 45:19 48:9 49:7, 16 53:12, 18, 22 54:5 55:22 61:4 62:18 64:20 65:18 69:8, 22, 25 70:13 71:24 72:5 74:3, 12 75:8, 20, 22 76:3 78:16 80:7, 18 81:2, 18 82:1, 2, 11, 18 83:6, 20 84:14 understanding 18:15 19:18 20:11 34:5 63:24 75:15 79:18 80:7 understood 19:10 22:2 26:7 29:20	30:14 32:17 33:8, 12, 13 34:3 36:7, 14 39:2 42:2 44:16, 21 45:10 46:7, 11 50:21 55:4, 9 56:25 57:20 67:10 68:10, 14 77:14 79:15 85:21 UNITED 1:1 unquote 62:22 update 40:23 59:12 61:23 62:2, 7 updated 61:18 updates 40:3, 7, 13, 16, 17, 20 62:11 updating 58:11, 15, 16 60:4 61:14 uploaded 4:12 51:6 usage 30:22 use 14:1, 4, 14 20:5, 25 36:10 39:3 43:3 49:17 50:19 62:8 68:16 70:1 71:9 72:4 74:4 75:10, 25 79:13 83:13 84:16 87:9 user 17:19 72:4 uses 30:17 < V > vague 8:4 14:2 18:8 85:9 variety 37:11 44:20 various 13:3 24:3 66:14 84:4 version 28:13 29:6, 11, 15 33:2 36:5, 25 42:5 59:18 66:22 70:8 VHDL 59:7, 10
--	--	---	---

VIDEOCONFERENCE 1:5, 13 view 21:6 67:1 viewing 11:3, 18, 22, 25 12:2, 6 visually 16:7 vital 16:7 voice 58:6 < W > WAN 28:16 31:25 74:11 way 18:24 20:19 28:4 33:21, 25 44:9 48:14 71:12 72:2 79:25 84:12 87:14 ways 19:8 25:4 26:8, 14, 25 27:24, 25 28:3 33:9 wearable 21:14 web 17:25 well 4:11 11:15 13:4 14:19, 20, 23 15:4 17:9 20:13, 14, 17 22:17, 21 23:19 25:4, 19 27:8, 20 34:7, 14 38:15 39:3, 20 40:15 41:25 42:25 43:2 48:16, 20 49:17 52:20 54:18 55:18 57:22 61:6 62:9 64:1 67:12 68:2, 23 70:14, 20 71:11, 15 72:13, 21 74:3 77:6 79:9, 13 81:12 83:2, 25 we're 5:1, 8, 11 25:23 39:11 43:8 we've 25:25 26:18 39:10 72:13 74:15	77:11 WHEREOF 87:18 wide 37:2 windows 6:1 wired 17:4 wireless 12:13 13:18 17:4, 9, 25 20:15, 18 25:17 27:9 28:18 32:21 59:22 60:8, 13 61:21, 23 62:8 64:5 65:15 wirelessly 19:13 28:15 37:2, 10 47:18 51:6, 14 61:18 62:2 70:10 74:25 75:16 within 1:15 6:10 7:16 9:2 13:16 15:13 16:25 22:12, 20 24:9, 10, 11 39:18 54:6 80:10 87:6 without 45:2, 22 56:4 62:20, 21 WITNESS 2:2, 3 8:5 14:3 18:9 46:14 85:10 87:13, 18 word 57:12 63:16 74:18 work 43:22 56:14 66:2 73:7, 23 working 25:22 Works 46:15 world 79:2 would 4:25 7:19 8:2, 8, 18, 25 11:19 12:18, 19 13:11, 14, 23, 25 14:4, 9, 22 15:20 19:4, 10 21:13 22:1, 3, 5, 14, 15, 16 23:21 24:22, 25 25:1 26:6, 10,	14 27:5, 25 28:7 29:11, 20, 21, 25 30:8, 14, 23 31:2, 10, 11, 14, 22 32:7, 8, 14, 17, 20 33:5, 8, 12, 13, 18 34:2 35:1, 4, 9, 15 36:7, 14, 18, 20 37:17 39:1, 7 40:6 42:2, 3, 14, 15, 17, 18, 23 43:5 44:7, 13, 16, 17, 18, 21 45:8, 9, 10, 17, 19, 21, 24 46:5, 7, 10 47:17 48:9, 10, 12 49:7, 15, 19 50:4, 16, 20, 21, 22 52:2, 20, 22, 24, 25 53:3, 12, 16, 17, 22, 25 54:4, 7, 10, 13, 16 55:4, 9, 22 56:6, 11, 13, 14, 21 57:4, 12, 19 58:11 59:7, 10, 11 60:3 62:10, 17 63:25 64:16, 17, 20, 25 65:3, 9, 18, 22 66:6 67:10, 23 68:8, 10, 14, 17 69:7, 11, 17, 22, 25 70:3 71:2, 21, 24 72:5, 8, 9, 16, 19, 24 73:13, 25 74:9 75:4, 8, 11, 14, 19, 22 76:2, 8, 10, 21 77:3, 14, 23, 25 78:5, 7, 13, 23 79:10, 20, 22, 24 80:2, 7, 10, 17 81:1, 11, 16, 19 82:1, 4, 6, 11, 25 83:2, 6, 16, 19 84:4, 12, 14, 24 85:3, 7, 14, 21, 25 wouldn't 74:4 write 59:7	writing 56:17 59:9 written 8:17 56:15 WWD 17:25 < Y > Yeah 26:24 59:4 year 6:18 19:12 Yes 5:18 6:14 10:20 11:9, 20 15:9 16:9, 22 18:14 28:25 37:25 53:7 86:6 York 2:18 < Z > Zoom 6:2, 3
---	---	--	--