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Transcript of Patrick McDaniel, Ph.D.

Date: June 14, 2024

Case: Samsung Electronics -v- Headwater Research (PTAB)

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WORLDWIDE COURT REPORTING & LITIGATION TECHNOLOGY

Headwater Research LLC
Ex. 2011, IPR2023-01336

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

4
5 Samsung Electronics Co., Ltd.,
6 Petitioner,

7 v.

8 Headwater Research LLC
9 Patent Owner.

10 IPR2023-01336
11 Patent 9,137,701

12
13
14 ZOOM DEPOSITION OF DR. PATRICK DREW McDANIEL,

15 (Reported Remotely via Web videoconference)

16 Verona, Wisconsin (Deponent's location)

17 Friday, June 14, 2024

18 Volume 1

19
20 STENOGRAPHICALLY REPORTED BY:
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11 Patent 9,137,701

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13
14 DEPOSITION OF DR. PATRICK DREW McDANIEL,
15 taken on behalf of the Patent Owner, with the
16 deponent located in Verona, Wisconsin, commencing
17 at 9:02 a.m., Friday, June 14, 2024, remotely
18 reported via video & Web videoconference before
19 REBECCA L. ROMANO, a Certified Shorthand Reporter,
20 Certified Court Reporter, Registered Professional
21 Reporter.

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I N D E X

DEPONENT	EXAMINATION
DR. PATRICK DREW MCDANIEL VOLUME 1	PAGE
By Mr. Pickens	7

E X H I B I T S

(PREMARKED)

- Exhibit 1001 United States Patent
No.: US 9,137,701 B2;
- Exhibit 1003 Declaration of
Dr. Patrick McDaniel
- Exhibit 1005 United States Patent
Application Publication
Pub. No.: US 2006/0039354
A1;
- Exhibit 1006 United States Patent
Application Publication
Pub. No.: US 2007/0038763
A1.

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1 Verona, Wisconsin; Friday, June 14, 2024

2 9:02 a.m.

3 ---o0o---

4

5 THE TECHNICIAN: Thank you to everyone
6 for attending this proceeding remotely which we
7 anticipate will run smoothly.

8 Please remember to speak slowly and do
9 your best not to talk over one another. Please be
10 aware that we are recording this proceeding for
11 backup purposes. Any off-record discussions should
12 be had away from the computer. Please remember to
13 mute your mic for those conversations.

14 Please have your video enabled to help
15 the reporter identify who is speaking. If you are
16 unable to connect with video and are connecting via
17 phone, please identify yourself each time before
18 speaking.

19 We will provide a complimentary, unedited
20 recording of this deposition with the purchase of a
21 transcript. I apologize in advance for any
22 technical-related issues.

23 Thank you.

24 THE COURT REPORTER: If you could raise
25 your right hand for me, please.

1 THE DEPONENT: (Complies.)

2 THE COURT REPORTER: You do solemnly
3 state, under penalty of perjury, that the testimony
4 you are about to give in this deposition, shall be
5 the truth, the whole truth and nothing but the
6 truth?

7 THE DEPONENT: I do.

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1 DR. PATRICK DREW McDANIEL,
2 having been administered an oath, was examined and
3 testified as follows:

4 EXAMINATION

5 BY MR. PICKENS:

6 Q. Good morning, Dr. McDaniel.

7 A. Good morning, James.

8 Q. We haven't met before, correct?

9 A. I don't believe so.

10 Q. It's nice to meet you.

11 A. It's nice to meet you.

12 Q. My full name is James Pickens. I'm an
13 attorney of Russ August & Kabat and represent the
14 patent owner Headwater.

15 Could you state your full name for the
16 record, please.

17 A. Patrick Drew McDaniel.

18 Q. And I understand that you have a
19 doctorate degree?

20 A. I do.

21 Q. What's your degree in?

22 A. It's from -- electrical engineering
23 computer science from the University of Michigan.

24 Q. And where are you located today?

25 A. Verona, Wisconsin, just outside of

1 Madison, Wisconsin.

2 Q. And, you know, you've been deposed a
3 couple of times, at least, before, correct?

4 A. I think this is my 38th deposition.

5 Q. Excellent.

6 Therefore, I know you know, the ground
7 rules and sort of how we'll proceed today.

8 We can take breaks whatever you need to.

9 And I would just ask, you know, if I ask
10 a question and you don't understand it, please let
11 me know and I'll do my best to clarify it.

12 Otherwise, I'll assume that you are tracking what
13 I'm saying and proceed accordingly.

14 Does that sound fair?

15 A. That's fair.

16 Q. Great.

17 And so this is -- you have with you today
18 copies of materials that are, you know, submitted
19 in this IPR 2023-1336 proceeding; is that correct?

20 A. That is correct.

21 Q. And what materials do you have available
22 today?

23 A. I have Exhibits 101 through 1035
24 inclusive, petition for the inter partes review,
25 the POA, and the institution decision today.

1 Q. Okay. Great.

2 I have copies as well. And we'll refer
3 just to using the premarked exhibit numbers in
4 IPR 2023-1336. We'll just use those exhibit
5 numbers.

6 So just to make sure that you know where
7 we're going today, the main exhibits I wanted to
8 ask you about were what's been premarked as
9 Exhibit 1001, which is U.S. Patent No. 9,137,701,
10 the patent at issue; exhibit -- what's been
11 pre-marked as Exhibit 1003, that's the declaration
12 that you submitted in the proceeding in support of
13 the petition; and Exhibits 1005 and 1006, which
14 correspond to the R-A-O, Rao, reference and
15 O-E-S-T-V-A-L-L, Oestvall, reference.

16 So just to do some more housekeeping
17 before we get into the substance, would you mind
18 opening up your -- what you have as Exhibit 1003,
19 your declaration.

20 A. I have it open.

21 Q. Great. And it -- excuse me.

22 Do you have it open in PDF form?

23 A. I do.

24 I don't have a physical copy today.

25 Q. No problem.

1 Is your PDF 200 pages?

2 A. It is 200 pages, that's correct.

3 Q. Great. We're looking at the same
4 declaration.

5 On the first page, this is the one you
6 submitted dated August 25th, 2023, correct?

7 A. Yes.

8 Q. Great.

9 Okay. And then if you could jump down
10 with me in your declaration to page 8, please.

11 A. I am there.

12 Q. There's a section, "Summary of
13 Conclusions Formed," that begins on the bottom of
14 this page.

15 Do you see that?

16 A. Yes.

17 Q. Okay. And I just wanted to quickly run
18 through this section, going onto page 9.

19 So this section summarizes the three
20 grounds that you presented applicable to the
21 challenge claims, correct?

22 A. That's correct.

23 Q. And am I understanding correctly that
24 only the first ground, Ground 1A, addresses
25 independent claim 1?

1 A. That is correct.

2 Q. Okay. And there's only one independent
3 claim, correct?

4 A. Yes.

5 Q. Okay. Great.

6 So if the board disagrees that Ground 1A
7 as shown in validity of claim 1, then would you
8 agree that Grounds 1B and 1C fail for the same
9 reason as 1A as to claim 1.

10 A. That -- that would stand to reason.

11 Q. Okay. How do you pronounce the two
12 references in Ground 1A? I'm just curious. I've
13 been saying it one way, but how do you pronounce
14 those?

15 A. Rao. I think you had that one in the --
16 I pronounce the second one Oestvall, but I think
17 I've heard it about six different -- the second one
18 about six different ways, so...

19 Q. There's no wrong answer on that. I just
20 wanted to make sure to clarify it for the reporter.

21 So, okay. So Rao is going to be R-A-O.
22 The reference is R-A-O, Rao. And then the second
23 reference in Ground 1A is Oestvall spelled
24 O-E-S-T-V-A-L-L; is that fair?

25 A. Yes.

1 Q. Okay. Great.

2 So let's discuss a bit about Ground 1A
3 and the -- so let me take you down in your
4 declaration --

5 A. Sure.

6 Q. -- somewhere to help keep -- if you could
7 jump down to paragraph 45 of your declaration.

8 It's on page 35.

9 A. Yeah. It begins on labeled 34, page 35.

10 Yes, I see it.

11 Q. And this is a section of your declaration
12 titled, "Interpretation of the '701 Patent Claims,"
13 correct?

14 A. That's correct.

15 Q. Have you offered any claim construction
16 opinions on the '701 patent claims in this
17 proceeding?

18 A. Well, this is how I interpreted the '701.

19 (Discussion off the stenographic record.)

20 THE DEPONENT: So claim -- paragraph 45
21 lays out my interpretation. I do not think I have
22 any special claim construction opinions beyond
23 what's here that I'm -- that I can think of off the
24 top of my head.

25 Q. (By Mr. Pickens) Okay. And, yeah, I

1 didn't see any. I just wanted to make sure. And
2 if something comes up, feel free to clarify it.

3 A. Sure.

4 Q. But, basically -- so in paragraph 45, you
5 say that, you know, "the terms appearing in a
6 patent claim should be interpreted according to
7 their ordinary and customary meaning of such claim
8 as understood by one of ordinary skill in the art
9 and the prosecution history pertaining to the
10 patent."

11 I was just reading from paragraph 45.

12 My question is: Did you apply the plain
13 and ordinary meaning, all of the terms in the
14 '701 patent, when you did your analysis?

15 A. As -- as indicated by the patent
16 specification and the interpretation of this
17 patents and as the specification as I go on in the
18 remainder of that paragraph, yes.

19 Q. Great. Okay. Excellent.

20 Okay. So then, next, I wanted to ask you
21 about, if you could turn in your declaration to
22 page 52?

23 A. The beginning of Ground 1A?

24 Q. That's right.

25 A. Okay. Yes, I'm there.

1 Q. Okay. So page 52 is the beginning of
2 section XI on Ground 1A, "Rao in view of Oestvall
3 renders obviously claims 1-4, 9, 10, 13, 14, 16,
4 19, 20, and 25," correct?

5 A. Yes, as written.

6 Q. So the theory for Ground 1A is the
7 combination of Rao and Oestvall, correct?

8 A. Yes, that is what -- the combination of
9 Rao and Oestvall is what Ground 1A is based on.

10 Q. Okay. And so I wanted to ask you some
11 questions about...

12 So in paragraph 72, it says -- do you see
13 in paragraph 72, the first sentence, it says, "As
14 described above, Rao describes applying policies to
15 prioritize transmission of certain higher-priority
16 network packets over other lower-priority network
17 packets."

18 Do you see that?

19 A. Yes.

20 Q. And then a few sentences in, it looks
21 like the second-to-last sentence of the paragraph,
22 it says, "But Rao does not expressly discuss
23 implementation of using application states in its
24 prioritization techniques, and by the Critical
25 Date, a POSITA would have understood that

1 application states similarly impact the problems
2 addressed in Rao, such as network usage efficiency.
3 A POSITA looking to implement Rao would have
4 therefore been motivated to look to solutions to
5 improve Rao's packet-based prioritization
6 techniques."

7 And then in the next paragraph, you say,
8 "In seeking solutions, a POSITA would have
9 identified Oestvall, which, like Rao, is broadly
10 focused on achieving efficiencies associated with
11 mobile device operation."

12 Did I read that correctly?

13 A. Yes.

14 Q. So am I understanding your -- that your
15 opinion is that a POSITA would specifically look to
16 Oestvall to -- for the -- for the use of
17 application states?

18 A. Well, I mean, as it says in paragraph 73,
19 "a POSITA would have identified Oestvall" for
20 "broadly focused on achieving efficiencies
21 associated with a mobile device operation."

22 So Oestvall is providing further
23 refinement and further optimization of the use of
24 the mobile device.

25 Q. Is Oestvall addressing that -- that issue

1 that you mentioned that Rao does not expressly
2 discuss, which is the -- the implementation of
3 using applications states in its prioritization
4 techniques?

5 A. Yes. If you go down to the bottom
6 section of 73, "As explained below, the resulting
7 Rao-Oestvall device would perform various types of
8 prioritization regulating access to device
9 resources by applications." [as read]

10 Q. I see.

11 So Oestvall is contributing this notion
12 of using application state to the Rao device in the
13 combination of the Rao-Oestvall combination; is
14 that fair?

15 A. Is -- so if you go down to -- I'm sorry
16 didn't, I didn't quite catch -- I didn't quite
17 catch the question.

18 So is Oestvall -- in fact, I'll let you
19 reask the question.

20 Q. Yeah.

21 Is Oestvall contributing to the
22 combination -- to the Rao-Oestvall combination, is
23 Oestvall contributing the implementation of using
24 application states that Rao does not expressly
25 discuss?

1 A. Yes.

2 Q. I see.

3 So in paragraph 73, you talk more about
4 Oestvall, correct?

5 A. Yes, part of 73 talks about Oestvall.

6 Q. So it says, "Oestvall further offers" --
7 I'm reading in the second sentence of 73.

8 "Oestvall further offers techniques to
9 'preserve system resources by denying system
10 resources and services' to certain applications."

11 Correct?

12 A. Yes.

13 Q. And then the resulting Rao-Oestvall
14 device is going to incorporate -- is that what you
15 describe in paragraph 74?

16 A. I'm not sure I understand the question.

17 Q. Sure.

18 So is paragraph 74 describing, now, the
19 combination of the Rao-Oestvall combination system?

20 A. Well, the description goes throughout the
21 entire declaration, but this is -- is highlighting
22 one -- one piece in the context of why -- how one
23 would use the two references for the combined
24 device.

25 Q. And in your opinion, a POSITA would build

1 the Rao-Oestvall combination that you illustrated
2 and described in paragraph 74, correct?

3 A. That's -- that's one design, yes.

4 Q. And so the -- what the POSITA would do is
5 they would improve Rao's agent 326, which is
6 highlighted in red in the -- in your annotated
7 figure, to incorporate functionality associated
8 with Oestvall's window server 2, which is shown in
9 purple, and functionality associated with
10 scheduler 3, which is shown in blue; is that right?

11 A. As written in paragraph 74, yes.

12 Q. So the -- so the -- when you refer to the
13 "incorporating into Rao," am I understanding
14 correctly that the POSITA would take both
15 Oestvall's window server 2 and Oestvall's
16 scheduler 3 and incorporate those into Rao?

17 A. As -- as written in 74, yes, the -- the
18 functionality associated with the window server and
19 the functionality associated with the scheduler
20 would be integrated into the Rao.

21 Q. Okay. And so, then, now in the combined
22 system, the Rao-Oestvall system will -- it will
23 classify applications 338a-n as a trusted or
24 untrusted application.

25 That's what's shown in the purple; is

1 that correct?

2 A. That's -- that's what the classification
3 is -- is doing. Oestvall calls them trusted
4 because they're -- they're -- applications are
5 annotated with their -- their -- their priority
6 with respect to a -- resources.

7 So, yes, they would be -- they would be
8 classified as such.

9 Q. And then in the -- I'm reading the last
10 sentence on page 53. It says, "The configuration
11 would have also enabled the improved agent to
12 prevent an untrusted application from running or
13 being given access to a service that consumes
14 resources."

15 Is that right?

16 A. That's correct.

17 Q. So now I'm looking at the annotated
18 figure on page 54 of your declaration.

19 This is Figure 5A from the Rao reference
20 supplemented with your annotations in color; is
21 that fair?

22 A. Yes.

23 Q. Okay. So in the -- in this figure, the
24 agent 326, what happens if it classifies an
25 application as untrusted?

1 A. If it's -- all -- all the combined -- the
2 combined system, if there is a policy, the agent
3 would classify it as untrusted and then it would
4 instigate the policy that would prevent that
5 application from -- well, it would depend on -- it
6 would depend on the foreground or background state
7 of the application.

8 Under Oestvall's policy, if it were in
9 the foreground, it would allow this untrusted
10 application to access the network, and -- and the
11 other case, it would block it.

12 Q. Now, it says here in the figure that...
13 Do you see "A" and "B" in the figure?

14 A. Yes.

15 Q. So B, you're saying that the Rao-Oestvall
16 system would, "Prevent access to device resources
17 for 'untrusted applications' running in the
18 background," correct?

19 A. It could if it was implementing the
20 Oestvall policy.

21 Q. So let's go to paragraph 103.

22 And before we do that, we can just look
23 at, you know, what section of the declaration
24 that's in.

25 So this is in -- if you go to page 63 of

1 the declaration.

2 A. Yeah, this -- this is referring to
3 limitation 1e, which begins with, "control, via an
4 application program interface"... and the end of it
5 is, "at least one WWAN."

6 Q. So I wanted to ask you a couple questions
7 about the opinions for 1e.

8 A. Okay.

9 Q. And specifically about paragraph 103,
10 which is on page 73.

11 A. Can you give me just a moment to review
12 the paragraph.

13 I'm there.

14 Q. Would you agree with me that in paragraph
15 103 of your declaration, this is where you're
16 discussing the subpart of the claim 1e which you
17 put in bold text in -- actually, up in paragraph
18 98, which is about, "selectively block and allow
19 access by the first end-user application to the
20 WWAN modem"?

21 A. Yes.

22 Q. Okay. Yeah. So that's how I read it
23 too.

24 So paragraphs 98 through 103, these are
25 all addressing that part of the claim element that

1 requires selectively block and allow access --

2 A. Generally.

3 Q. -- by the first end-user application,
4 correct?

5 A. Generally, yes.

6 Q. Okay. So then, am I understanding right
7 that paragraphs, basically, 98, 99, 100, 101, 102,
8 those paragraphs describe Rao, and then paragraph
9 103 is the -- is where you then first discuss
10 Oestvall in connection with that subpart of the
11 claim.

12 A. So, to be clear, all of these paragraphs
13 are referring to the combined device that's laid
14 out, but the paragraphs up to 103 principally
15 discuss Rao, elements of Rao that are relevant to
16 this -- this part of the limitation.

17 Q. Yeah.

18 Okay. So in paragraph 103, the first
19 sentence, it says, "Similar to Rao, Oestvall
20 describes that its scheduler regulates access to
21 resources by an untrusted application depending on
22 whether the application runs in the background or
23 foreground."

24 Do you see that sentence?

25 A. As written.

1 Q. And then the next sentence says, "For
2 example, when an untrusted application is running
3 in the background, Oestvall's device prevents the
4 application from 'being given any services or
5 consuming any resources,' and therefore a POSITA
6 would have understood and found obvious that such
7 prevention would block the application's access to
8 network resources (e.g., WWAN modem)."

9 Did I read that correctly?

10 A. I believe so.

11 Q. Then it says, "When the untrusted
12 application is running in the foreground, the
13 application is permitted to 'run again' - e.g., to
14 be provided with resources and services,' and thus
15 a POSITA would have understood and found obvious
16 that such permission would allow the application to
17 access network resources (e.g., WWAN modem)."

18 Did I read that correctly?

19 A. I believe so.

20 Q. So in -- in Oestvall's device, when the
21 untrusted application is in the background,
22 Oestvall prevents the application from running,
23 correct?

24 A. It prevents the application from being
25 given any services or consuming any resources.

1 Q. And is that preventing the application
2 from running?

3 A. That's -- in Oestvall, it can, yes.

4 Q. And then the -- Oestvall actually
5 distinguishes preventing the application from
6 running from when the untrusted application's in
7 the foreground.

8 In that case, the application is
9 permitted to run again, correct?

10 A. Correct.

11 Q. So I wanted to just take a look at the
12 citations in this paragraph to Oestvall which has
13 been premarked as Exhibit 1006.

14 Would you mind pulling up the Oestvall
15 reference?

16 A. I have it open.

17 Q. Okay. Great.

18 So you're referencing here in this
19 paragraph of your declaration Oestvall paragraph
20 23, 24, 25; is that right?

21 A. Yes.

22 Q. Could you look with me at Oestvall
23 paragraph 23.

24 A. I'm reviewing it now.

25 Q. Would you just take a moment to review

1 paragraph 23, 24, 25, and then let me know when
2 you're ready.

3 A. Sure.

4 Okay. I'm ready.

5 Q. Okay. So in paragraph 23, it describes
6 the "window server component 2 which is used to
7 determine if an application is in the background or
8 foreground on display 1."

9 I'm just -- was reading from the very
10 first sentence.

11 Do you see that?

12 A. Yes.

13 Q. And then it says, "for an untrusted
14 application 4 in the background, it can send a
15 control signal to the scheduler 3 or interrupt
16 handler that in effect prevents the untrusted
17 application 4 from running, e.g. being given any
18 services or consuming any resources."

19 Did I read that correctly?

20 A. Yes.

21 Q. When this sentence says, "it can send a
22 control signal," is that saying the window server
23 component sends the control signal to the
24 scheduler?

25 A. That's -- for -- in Oestvall, that's

1 correct.

2 Q. Okay. That makes sense.

3 So going back to your declaration in
4 paragraph 103, you quoted Oestvall where it says --
5 in paragraph 103, do you see the quotation you have
6 where it says, "Oestvall's device prevents the
7 application from 'being given any services or
8 consuming any resources'"?

9 A. Yes.

10 Q. And you're quoting the first sentence in
11 Oestvall paragraph 23, correct?

12 A. Yes.

13 Q. Okay. So your paragraph is quoting the
14 sentence in Oestvall, which reads, "for an
15 untrusted application in the background, it sends a
16 control signal to the scheduler 3 or interrupt
17 handler that in effect prevents the untrusted
18 application from running, e.g. being given any
19 services or consuming any resources." [as read]

20 That's the sentence you're quoting,
21 right?

22 A. I believe so, yes.

23 Q. Okay. Now, taking a look at the last
24 sentence of Oestvall 23, it says, "When in the
25 background, trusted application 5 may continue to

1 run, or may be actively prevented in the same way
2 as non-trusted application 4, or may be requested
3 (but not prevented) to stop running."

4 Do you see that sentence?

5 A. I do.

6 Q. So Oestvall is teaching here that when
7 the application is untrusted, you're actually going
8 to prevent it from running.

9 But if the application is trusted, it may
10 continue to run, it may be actively prevented from
11 running or it may be requested to stop running.
12 There's more options when it's trusted; is that
13 right?

14 A. So -- so in Oestvall, if it's an
15 untrusted application, there are a couple of
16 options. One of them is to prevent it from
17 running, other is to block network resources.

18 If you look at the following
19 paragraph 24, it actually lays out a couple of
20 different policies. For example, one preventing
21 the background untrusted application from polling,
22 which, is network application, or, as an alternate
23 policy, simply blocking application completely.

24 Q. So is it your truthful -- your true
25 opinion is that paragraph 24 is actually disclosing

1 a different feature than paragraph 23?

2 A. I think it's expanding on the different
3 options that are laid out in 23.

4 Q. So your opinion is that when it says,
5 "One example use of the present invention is to
6 prevent background untrusted applications from
7 'polling' for data over a wireless network, an
8 activity that can potentially drain a battery
9 quickly," that's in paragraph 24, your opinion is
10 that that's expanding on the options laid out in
11 paragraph 23?

12 A. Yeah, 23, in the short specification is
13 laying out the function of the window server and
14 lays a canonical example of a policy, in one case,
15 blocking the application from running.

16 And 24 expands on that to describe
17 different kinds of blocking that may happen.

18 Q. So paragraph 23 only discloses what
19 options to do to the untrusted background
20 application?

21 A. I'm not sure I understand the question.

22 Q. What does paragraph 23 say Oestvall's
23 device does to a untrusted background application?

24 A. That it prevents, "being given any
25 services for consuming any resources." So it's a

1 natural consequence, that is a pretty broad
2 statement.

3 Being allocated any resources is -- is
4 how the system allocates resources like network
5 bandwidth or memory. Or "consuming any resources"
6 is when a program is running, it's consuming
7 resources. By definition, a program that's not
8 running cannot consume resources.

9 And so what 24 does is it expands on
10 those two categories and gives some exemplars.

11 (Discussion off the stenographic record.)

12 Q. (By Mr. Pickens) So when the Oestvall
13 device -- it prevents the untrusted application
14 from being given any services or consuming any
15 resources, correct?

16 A. Correct.

17 Q. So the -- so that means that the Oestvall
18 device will not give the untrusted application any
19 memory resources, correct?

20 A. That is one -- that is any additional --
21 for example, if it's a running process, that may be
22 one example of how one could practice Oestvall.

23 Q. And once Oestvall's device has decided
24 not to give any resources or services to the
25 untrusted application, the inevitable consequence

1 of that is that the untrusted application won't use
2 any -- it won't use any resources or services that
3 could drain the battery, correct?

4 A. That is one implementation.

5 Q. Now, if you -- so if a POSITA were to
6 implement Oestvall's device, the result would be
7 that the untrusted background applications, they
8 can't do -- they can't use any memory resources,
9 they can't do anything that would drain the
10 battery; is that fair?

11 A. That's one implementation of Oestvall.

12 Q. Does Oestvall disclose an implementation
13 where the untrusted application in the background
14 is given system resources?

15 A. I think, returning to the first sentence
16 of paragraph 24, if the background untrusted
17 application is prevented from polling, using the
18 network, in that case, preserving the network
19 bandwidth and preserving the energy expended by,
20 you know, powering the transmitter, the phone. It
21 still may consume resources by running, waiting for
22 such a time it either comes into the foreground or
23 the policy changes.

24 So, in that case, it could consume some
25 resource but not others.

1 Q. Where does Oestvall say that the
2 background untrusted application can consume
3 resources?

4 A. Well, if you -- again, returning to the
5 first sentence of paragraph 0024, it says, "One
6 example of present invention is to prevent
7 background untrusted applications from 'polling'
8 for data over the network" -- "over the wireless
9 Network." Sorry. [as read]

10 And another example, in that case,
11 preventing something from using the network. And
12 another example is simply preventing it from
13 running.

14 So the juxtaposition says, in the first
15 case, you have a running process, "process" being a
16 program or an application. And it's -- it's --
17 it's doing something, perhaps polling to see if it
18 has been given access to the network but not
19 actually polling it across the network. That's the
20 first example.

21 The second one actually completely stops
22 the application.

23 Q. So your interpretation of paragraph 24 is
24 that the first sentence is a different
25 configuration than the second sentence as far as

1 what you do to the untrusted application?

2 A. Yeah, it's pretty clear. The first one
3 says, "One example," and then the second one says,
4 "Another example."

5 Q. So --

6 A. So clearly two different systems.

7 Q. So if you take a look at paragraph 21 of
8 Oestvall, it says, "With the present" -- the first
9 sentence, it says, "With the present invention,
10 when an untrusted application is running on the
11 battery operated device and another application
12 should be in the foreground, the untrusted
13 application is placed into the background and is
14 also actively prevented from running. This denies
15 its system resources and hence preserves power, as
16 well as unnecessary CPU activity associated with
17 the untrusted application in background."

18 Do you see where I read that in
19 paragraph 21?

20 A. Yes.

21 Q. And then at the end of paragraph 21, it
22 says, "When the untrusted application is brought to
23 the foreground again, it is allowed to run again,"
24 correct?

25 A. Yes.

1 Q. Then in paragraph 23, once again, it says
2 that the untrusted application in the background is
3 prevented from running and it's prevented from,
4 "being given any services or consuming any
5 resources" in paragraph 23, correct?

6 A. That's what it says.

7 Q. So then paragraph 24, it doesn't say
8 another embodiment. It actually just says, "One
9 example use of the present invention is to prevent
10 background untrusted applications from 'polling'
11 for data over a wireless network, an activity that
12 can potentially drain a battery quickly," correct?

13 A. That's -- that's right. Yes.

14 Q. And when it says it's a, "use of the
15 present invention," that's referring to the
16 invention described in paragraphs 21, 22 and 23,
17 correct?

18 A. Yes, it's -- it's providing one
19 implementation of what's described above.

20 Q. Going back to your declaration in
21 paragraph 103 --

22 A. Yes.

23 Q. -- you're mapping -- here, you're mapping
24 Oestvall paragraph 23 as what selectively blocks
25 the application from accessing the WWAN modem,

1 correct?

2 A. What 103 is articulating is the
3 functionality. The blocking of Oestvall would be
4 combined with the Rao as described throughout to
5 provide a blocking of traffic, for example,
6 preventing a background application from polling
7 network over -- polling data over the network.

8 Q. But paragraph 103 in your declaration
9 doesn't use the word "polling," correct?

10 A. It uses the word "block," yes.

11 Q. Paragraph 103, you're specifically
12 relying on the disclosure in Oestvall 23 that,
13 "Oestvall's device prevents the application from
14 'being given any services or consuming any
15 resources,'" to meet the -- block the application
16 access to the WWAN modem of the claim, correct?

17 A. So I'm -- I'm relying on all of Oestvall.
18 But, particular, I'm citing 23 and 24 and 25. And
19 the piece that a POSITA would take away is actually
20 articulated. "A POSITA would have understood and
21 found obvious that such a prevention would block
22 access to the network resources," [as read] such as
23 laid out in paragraph 24.

24 Q. Now, when you say "such prevention" in
25 that sentence, you're referring to "Oestvall's

1 device prevents the application from 'being given
2 any services or consuming any resources,' correct?

3 A. I see that, yes. That's the context.
4 That's, yes, as written in Oestvall.

5 Q. And so that -- that's all that Oestvall's
6 device needs to do to satisfy block the
7 application's access to the WWAN modem, correct?

8 A. Well, what one would -- a POSITA would
9 take from Oestvall is that you can selectively
10 block access to resources to achieve efficiency as
11 laid out in the motivation combine above. And the
12 combined device would selectively block access to
13 network resources. That's what you would take away
14 from Oestvall.

15 Q. And the way that the combined
16 Rao-Oestvall device would selectively block access
17 to network resources is by preventing the
18 application from being given any services or
19 consuming any resources as you say in
20 paragraph 103, correct?

21 A. Well, being given any net- -- network
22 services or consuming any network resources, one --
23 a POSITA would look at the -- the blocking of
24 network traffic as a policy, which is pretty --
25 pretty obvious in Oestvall, and apply that to Rao.

1 Q. Does the Oestvall -- does the
2 Rao-Oestvall device satisfy the claimed -- block
3 the application access to the WWAN modem by
4 preventing the application from running and being
5 given any services or consuming any resources?

6 A. That's -- the -- the -- blocking of the
7 running of the application, I believe, would --
8 would practice that limitation.

9 Q. I see.

10 Now, for Rao -- the Rao-Oestvall device,
11 you also have discussion of just, you know, how
12 Rao's teachings are related to this part of the
13 claim as well up above in -- in paragraphs 98
14 through 102, right?

15 A. That's correct.

16 Q. So in 99, that's where you have -- you
17 say, "Rao's device can block network packets."

18 Do you see where you bolded "block"?

19 A. Yes.

20 Q. So does blocking the network packet, does
21 that -- oh, okay. I see.

22 In paragraph 102, could you look with me
23 there.

24 A. Just a second.

25 Yes.

1 Q. So, here, you're saying that dropping or
2 discarding network packets is blocking access by
3 the first end-user application to the WWAN modem,
4 correct?

5 A. In 102?

6 Q. In paragraph 102.

7 A. Yeah, that if you -- you block all the
8 packets for -- if you block the packets, you're --
9 you're preventing access to the WWAN modem.

10 Q. Do you need to block all the packets to
11 satisfy block access to the WWAN modem, or is it --
12 does it satisfy the claim element, in your view, if
13 you just block one packet?

14 Maybe that was a confusing question. Let
15 me try it again. Strike that.

16 When Rao's device drops or discards one
17 network packet from a end-user application, does
18 that meet the claimed access by the first end-user
19 application to the WWAN modem is blocked?

20 A. If an application -- if the dropping of
21 the one packet achieves selectively blocking by the
22 first end-user application to the WWAN modem, then
23 it -- then it would. But if -- it's the -- the
24 packet -- blocking the -- the packets, the --
25 the -- in order to practice, it has to block access

1 to the modem, so...

2 Q. And I guess what I'm asking is, so is
3 dropping one packet from an application, is that
4 enough to constitute that the access by the first
5 end-user application to the WWAN modem is blocked?

6 MS. HUANG: Objection. Form.

7 THE DEPONENT: If -- the -- the packet --
8 the access to WWAN -- the modem has to be blocked.
9 So the application, if all the traffic going to the
10 WWAN is blocked when a policy for the Rao-Oestvall
11 device is being implemented, then the answer is
12 yes.

13 Q. (By Mr. Pickens) And what if --
14 you know, some of the packets from the application
15 are being discarded but some of the packets from
16 the application are being allowed, in that case,
17 would that constitute that the access by the first
18 end-user application to the WWAN modem is blocked?

19 A. The application would not be -- have its
20 access to the modem blocked in that case.

21 Q. So the first end-user application would
22 not have its access to the WWAN modem blocked in
23 the case where some of the packets are allowed and
24 some are disregarded?

25 A. Right. Correct.

1 I guess it's -- if it's only blocked --
2 blocking means blocking. It means disallowing
3 access to the modem.

4 Q. So blocking means all the application's
5 packets are discarded?

6 A. For the time in which the policy is -- is
7 enacted, yes.

8 MS. HUANG: Counsel, we've been going
9 about an hour. I wonder if we want to take a break
10 at some point soon?

11 MR. PICKENS: Yeah, why don't we go off
12 the record and take a quick break.

13 (Recess taken.)

14 MR. PICKENS: Back on record.

15 Q. (By Mr. Pickens) Okay. Welcome back,
16 Dr. McDaniel.

17 A. Thank you.

18 Q. Do you still have Oestvall handy?

19 A. I do.

20 Q. What's been pre-marked as Exhibit 1006, I
21 just wanted to ask you a couple questions about it,
22 you know, the first section of the written
23 description, I guess.

24 A. Okay.

25 Q. So in the -- do you see that there's a

1 section titled, "Summary of the Invention," which
2 covers Oestvall paragraphs 8 through 17?

3 A. Yes.

4 Q. And paragraph 8 of Oestvall, it says, "In
5 a first aspect of the present invention, a
6 multi-tasking computing device determines if a
7 non-trusted application is in the background or
8 foreground and prevents an untrusted application
9 that is in the background from running in order to
10 preserve system resources."

11 Do you see where I read that in
12 paragraph 8?

13 A. Yup.

14 Q. So then in paragraph 10, it says, "A
15 device implementing the present invention preserve
16 system resources by denying system resources and
17 services to background applications that do not
18 meet predefined 'trust' or certification criteria -
19 i.e. criteria which define the level of
20 trustworthiness of the application."

21 Do you see that?

22 A. Yes.

23 Q. And then...

24 Now, would you agree with me that in
25 paragraph 14, Oestvall teaches that it's not enough

1 to count on the untrusted application to shut
2 itself off, you actually have to actively prevent
3 them from running?

4 A. Correct. It's referring to merely
5 relying on a application to voluntarily cease
6 running when notified.

7 So what that paragraph is describing is a
8 situation where if you tell an application to stop
9 running, to pause its running, it may or may not
10 work.

11 Q. I see.

12 And then -- okay. So then toward the end
13 there, there's paragraphs 15, 16 and 17.

14 So paragraph 15, the first sentence, it
15 says, "With the present invention, untrusted
16 third party applications (such as downloaded
17 applications like games) are prevented from running
18 in the background and are suspended."

19 Do you see where I read that in
20 paragraph 15?

21 A. I do.

22 Q. Okay. So then in paragraph -- the
23 remainder of paragraph 15 is just talking now about
24 trusted applications and what you might do with
25 those, correct?

1 A. It appears to be so, yes.

2 Q. Then in paragraph 16, it says, "In a
3 second aspect, there is a multitasking computing
4 device programmed to be capable of determining if
5 an untrusted application is in the background or
6 foreground and preventing an untrusted application
7 that is in the background from running in order to
8 conserve system resources. The device may be
9 battery powered."

10 Do you see that?

11 A. Yes.

12 Q. And then in paragraph 17, it says, "In a
13 third aspect, there is an operating system for a
14 multitasking computing device, the operating system
15 being capable of determining if an untrusted
16 application is in the background foreground and
17 preventing an untrusted application that is in the
18 background from running in order to conserve system
19 resources."

20 Did I read that correctly?

21 A. I believe so.

22 Q. So is it fair to say that in each of the
23 aspects of the present invention, in the "Summary
24 of the Invention" section of Oestvall, the
25 untrusted application in the background is

1 prevented from running in order to conserve system
2 resources?

3 MS. HUANG: Objection. Form.

4 THE DEPONENT: I'd have to -- I'd have to
5 review this a little bit more carefully in order to
6 answer that question.

7 But, sitting here today, I'm looking at,
8 for example, ten, it's talking about denying system
9 resources and services. So there seems to be a
10 little wiggling room there, but I'd have to do a
11 little bit more analysis.

12 Q. (By Mr. Pickens) Yeah.

13 And feel free to take a look at the
14 paragraphs 8 through 17.

15 And, you know, just my question -- my
16 understanding is that in each of these paragraphs
17 of the summary of the invention, the untrusted
18 application in the background is prevented from
19 running in order to conserve system resources, and
20 I was wondering if you saw anything in the "Summary
21 of the Invention" that -- that differed in terms of
22 how the untrusted application is treated?

23 A. Paragraph 10 seems to be talking broadly
24 about denying system resources, and the paragraphs
25 you pointed to talk about stopping applications

1 from running.

2 And I believe in this section of the --
3 of the patent, the examples are stopping an
4 application. But as we discussed previously on
5 paragraph 24, it -- it appears to -- to imply that,
6 perhaps, broader interpretations of that may be
7 appropriate for denying system resources.

8 Q. Okay. Is fair to say other than the
9 sentence in paragraph ten talking about the denying
10 system resources, was there anything else in
11 paragraphs 8 to 17 that you found that -- that
12 contradicts or otherwise is inconsistent with just
13 preventing the untrusted application in the
14 background from running in order to conserve system
15 resources?

16 A. I don't see anything, sitting here right
17 now.

18 Q. Okay. I had a couple questions about the
19 '701 patent pre-marked as Exhibit 1001.

20 A. I have that open.

21 Q. Okay. Great.

22 So if you take look at the "Abstract" on
23 page 1 of the patent, do you see where it says, "A
24 wireless end-user device has a wireless wide-area
25 network (WWAN) and wireless local-area network

1 (WLAN) modems."

2 Do you see where I'm reading from?

3 A. Yes, first sentence of the abstract.

4 Q. Yeah.

5 And then the next sentence, it says, "One
6 or more processors determine when an application is
7 running in a background state or as a foreground
8 application," correct?

9 A. Correct.

10 Q. The next sentence says, "The processors
11 control application access for Internet service
12 activities through an application program interface
13 (API)" correct?

14 A. Yes.

15 Q. And then the next sentence, it says, "At
16 a time when Internet service activities are
17 communicated through the WWAM modem, the processors
18 use differential traffic control policy to
19 selectively block and allow network access for an
20 application based on the determination as to
21 whether the application is running in a background
22 state or as a foreground application."

23 Do you see that sentence?

24 A. Yes.

25 Q. Okay. Is it your understanding of the

1 abstract that the -- the selectively block and
2 allow network access has to be dependent on the
3 determination as to whether the application is
4 running in background state as a foreground
5 application?

6 A. Are we talking about the claims, or are
7 we talking about the abstract?

8 Q. Just the abstract, for right now.

9 A. The, "selectively block and allow network
10 access for an application based on the
11 determination of whether an application is running
12 in a background state or as a foreground."
13 [as read]

14 So, yes, the policy is applied when that
15 determination is made where the policy is
16 contingent on that state.

17 Q. Got it.

18 Okay. Now let's look at the claim, and
19 I'm going to ask you a similar question.

20 A. Okay.

21 Q. Preview.

22 But take a look, it's all the way on PDF
23 page 91.

24 A. Yup, I'm there.

25 Q. Okay. Great.

1 So claim 1 is -- it's a bit longer than
2 the abstract, but is it your understanding in
3 claim 1, that when it says, "selectively block and
4 allow access by the first end-user application to
5 the WWAM modem" -- and then toward the end of the
6 claim, it has this "wherein" clause, right,
7 "wherein the access is selectively blocked based on
8 a determination that the first end-user application
9 is running in a background state, and wherein the
10 access is selectively allowed based on a
11 determination that the first end-user application
12 as running as a foreground application."

13 So my question is: In claim 1, is the
14 "selectively block and allow access," is -- is
15 that -- is -- that is dependent on the
16 determination as to whether the application is
17 running in the foreground or the background state;
18 is that right?

19 A. "Wherein the access is selectively
20 blocked based on the determination that the first
21 end-user application is running in a background
22 state, and wherein the access is selectively
23 allowed based on a determination that the first
24 end-user application is running as a foreground
25 application."

1 Q. So that means that the -- the decision to
2 block or allow is dependent on the -- whether the
3 application is running in a background state or
4 running as a foreground application?

5 A. Yes, that's required by the last
6 limitation.

7 Q. Okay. And so the condition -- there's a
8 conditional dependency between the two, right,
9 where the -- you have to selectively block when the
10 condition is met that the application is running in
11 the background and you have to selectively allow
12 when the condition is met that the application is
13 running as a foreground application?

14 A. Yes.

15 MS. HUANG: Objection. Form.

16 THE DEPONENT: Can you read back that
17 question to me.

18 Q. (By Mr. Pickens) Yeah. Yeah.

19 My question is: Is it correct that
20 there's a conditional -- there's a condition that
21 has to be true in the claim, and the condition is
22 you have to selectively block when the condition is
23 met that the application is running in the
24 background state, and then the other aspect is you
25 have to selectively allow when the condition is met

1 that the application is running as a foreground
2 application?

3 A. So access, yeah, is -- is -- is blocked
4 based on a determination that this state can exist
5 and allowed when this other state, it's in the
6 foreground.

7 Q. Okay. So access is blocked based on a
8 determination that the state exists that the
9 application is running in a background state?

10 A. That's a fair statement.

11 Q. And then access is allowed based on the
12 determination that the state exists that the
13 application is running as a foreground application?

14 A. Yes.

15 Q. Okay. So in claim -- now -- in claim 2
16 of the patent, it's dependent on claim 1, correct?

17 A. Yes.

18 Q. And this imposes a further limitation on
19 the determination that the first end-user
20 application is running in a background state?

21 A. With some additional conditions, yes.

22 Q. So what are the additional conditions
23 that have to be met in claim 2?

24 A. That the user of the device not directly
25 interacting with the application of perceiving a

1 new benefit for the application.

2 Q. And those conditions don't need to be
3 true for claim 1, but they do need to be true for
4 claim 2?

5 MS. HUANG: Objection. Form. Confusing.
6 Unclear.

7 THE DEPONENT: Okay. Can you ask the
8 question again? I'm just refreshing my --

9 Q. (By Mr. Pickens) Yeah.

10 The conditions of claim 2 don't need to
11 be true for a device to satisfy claim 1, correct?

12 A. The conditions of claim 2...

13 So claim 2 provides one way of
14 determining -- one -- one way of determining that
15 it's directly -- that it's operating in the
16 background.

17 Q. But for a device to practice claim 1, it
18 doesn't need to use the specific way of determining
19 that something is in a background that's claimed in
20 claim 2 because claim 1 is broader than claim 2; is
21 that fair?

22 MS. HUANG: Objection. Form.

23 THE DEPONENT: I'm just processing the
24 question. Just give me a second.

25 I think claim 2 is refining one kind of

1 determination of how you determine if something is
2 in a background state.

3 So it's -- it's adding -- that doesn't
4 necessarily mean that the -- that -- to practice
5 claim 1, that the state that it's checking in
6 claim 2 does not exist.

7 Q. (By Mr. Pickens) It could exist.

8 A. It could exist, yes. It could be.

9 But what claim 2 is talking about, it's
10 configured to determine based on some criteria, so
11 that state could exist.

12 Q. But for a device to practice to claim 1,
13 it doesn't -- the device need not know whether that
14 specific state exists or not, referring to the --
15 the additional elements of claim 2 that are not in
16 claim 1?

17 MS. HUANG: Objection. Form.

18 Q. (By Mr. Pickens) Is that fair?

19 A. Yeah, so -- are you -- it may be that in
20 all cases that the condition exists that something
21 running in the background is not directly
22 interacting, the application perceiving a new
23 benefit from the application, if that's what you're
24 asking.

25 Q. I guess what I'm asking is, a device can

1 practice claim 1 by looking to see if an
2 application is in the foreground or background of
3 the display without checking anything else; is that
4 correct?

5 MS. HUANG: Objection. Form.

6 THE DEPONENT: Well, I -- I didn't -- it
7 wasn't clear to me what was being checked there.

8 Q. (By Mr. Pickens) A device can meet the
9 aspect of claim 1 that requires determining that an
10 end-user application is running in a background
11 state simply by looking at whether it's in the
12 foreground of the display or in the background
13 of -- and not in the foreground of the display; is
14 that --

15 MS. HUANG: Objection. Calls for
16 speculation.

17 THE DEPONENT: Yeah, I -- I -- the full
18 scope of the ways that things can be determined,
19 I'd have to think carefully about, you know, what
20 "determining" is. And claim 1 is determining
21 whether it's in a foreground or background state.

22 There are lots of ways you can detect
23 whether something is in the foreground or
24 background.

25 Q. (By Mr. Pickens) Right. I agree.

1 And I'm asking -- and so do you agree
2 that in claim 2, now this is saying, okay, the way
3 that you actually have to do it -- the way that you
4 have to determine if something is in -- is in a
5 background state is... and then claim 2 is giving,
6 like, a specific way you have to do it.

7 But claim 1, you don't have to do it that
8 specific way; you could do it any one of a number
9 of other ways as well.

10 MS. HUANG: Objection. Form. Compound.

11 THE DEPONENT: So claim 2 -- claim 2 is
12 providing a way that one can determine; whereas, in
13 claim 1, you -- you can determine if something is
14 running in the foreground, you know, in -- in
15 multiple ways.

16 Q. (By Mr. Pickens) So my next question is:
17 So to meet claim 2, a device would -- it actually
18 has to -- you can just meet claim 2 by determining
19 that something is running in a background state,
20 correct? You actually have to do more than that.

21 You have to do it in a certain way,
22 according to claim 2; is that fair?

23 MS. HUANG: Objection. Vague.
24 Confusing.

25 THE DEPONENT: So that provides a method

1 in claim 2 that determines based on whether or not
2 the application is in active use by the user.

3 Q. (By Mr. Pickens) So a device can meet
4 claim 1 without determining whether the application
5 is in active use by the user.

6 The portion of claim 1 that just requires
7 determining that the end-user application is
8 running in a background state doesn't require that
9 additional aspect about the active use; is that
10 right?

11 MS. HUANG: Objection. Form.

12 THE DEPONENT: The policy that's required
13 by one determines whether or not something's in the
14 foreground and -- or background state.

15 Q. (By Mr. Pickens) And so claim 1, for
16 that determination, it doesn't require also
17 checking if there's direct interaction or
18 perceptible benefit.

19 That's what -- claim 2 adds that
20 limitation; is that fair?

21 A. I think that's fair.

22 Q. Okay. So just before we wrapped up, I
23 just had a couple more questions about Rao --

24 A. Sure.

25 Q. -- for you.

1 So in your declaration, if you look at --
2 I was trying to understand your opinion of the Rao
3 system beginning at page 35 of your declaration.

4 A. Okay. I'm there.

5 Q. So in -- in Rao, you're talking about
6 Figure 1A here, is the -- is the remote access
7 client, is that embedded inside of a -- the client
8 105?

9 A. In Figure 1A in the middle of page 36?

10 Q. Yeah.

11 A. Yes.

12 Q. And just getting to that part of it just
13 to make sure.

14 So is -- and client 105 is a computing
15 device; is that right?

16 A. Yes.

17 Let me -- yes. Paragraph 86 of the
18 specification says that computing devices 102a
19 through 102c, herein, also referred to as 105a
20 through 105c, are computing devices.

21 Q. Got it.

22 And that's also true of the Figure 5
23 embodiment. You have an image from it on page 39
24 of your declaration.

25 A. That's correct.

1 Q. So that's a computing device, and that
2 computing device contains the remote access client,
3 correct?

4 A. Correct.

5 Q. And is the remote access client, is that
6 everything in Figure 5A?

7 Like, what parts of Figure 5A are inside
8 of the "Remote Access Client, 120"?

9 A. So there's the dashed line that
10 encompasses, logically, all of those elements.

11 Q. So that's -- includes, like, the "Agent,
12 326"; is that a part of the remote access client?

13 A. Yes.

14 Q. And all of the stuff on the bottom half
15 of the diagram is also part of the remote access
16 client?

17 A. Yeah. This is a conceptual diagram, yes.

18 Q. Okay. So the "Packet Capture Mechanism
19 365'," do you see that?

20 A. I do.

21 Q. What's the -- can you just explain, like,
22 what -- what's the "365' Packet Capture Mechanism"
23 at the top half of the figure versus the "Packet
24 Capture Mechanism 365" on the bottom half of the
25 figure?

1 Just, you know, there's two instances of
2 packet capture mechanism.

3 A. Well, this is one -- one embodiment -- or
4 this is one conceptual diagram. I'm sorry.

5 Q. Are there two packet capture mechanisms
6 in the -- in this embodiment, or is it just
7 illustrating that you could -- there's one packet
8 capture mechanism but you could put it either in
9 the filter or in the agent?

10 A. So this -- again, this is one conceptual
11 diagram where the packet capture mechanism could be
12 in a filtering mechanism.

13 So this is one example of how one could
14 configure the system where the packet capture
15 mechanism which is employing the policy, for
16 example, and the frame monitor is monitoring the
17 packets that are coming from an application.

18 This is one potential configuration of
19 the system.

20 Q. Just give me a moment.

21 A. I think to -- to -- maybe to get a
22 clearer answer to your previous question, I think
23 52 lays out the functions of -- of the framed
24 monitor in the packet capture.

25 Q. Paragraph 52?

1 A. Yeah.

2 Q. So you're referring here to where it's
3 talking about the filter 322 determining what
4 actions to take against packets?

5 So is it your opinion in paragraph 52
6 that the Rao remote access client includes a filter
7 322 that discards packets to when they're unwanted
8 or it discards packet to specify destination
9 addresses?

10 A. In this description of Rao, this is
11 describing what's disclosed with relation to this
12 particular instance of this example system.

13 Q. Okay. And so in the Rao system, the
14 network packet is what the system is effectively --
15 it's the network packets that are being captured
16 and filtered in the Rao device, correct?

17 A. In -- in Rao, doing packet captures in
18 this particular instance, yes, there could be, you
19 know -- it is one example of how Rao implements its
20 policy.

21 Q. And how does Rao's device determine that
22 a specific packet comes from a specific end-user
23 application?

24 A. So the section from the application the
25 Rao device intermediates in one instance between

1 the application and the application stack and the
2 -- the channel, which is often called a socket,
3 between the application, and then the filtering
4 mechanism would identify the application.

5 Q. I didn't understand your answer. But
6 that's my fault.

7 Could you help me.

8 So my question was: How does Rao's
9 device determine that a specific packet comes from
10 a specific end-user application?

11 And could you give your answer again or
12 just --

13 A. I -- let me see if I can...

14 So the applications are -- have their
15 traffic that's heading towards the network stack
16 and the packets are coming across what essentially
17 is a channel that is going from the application
18 often into the kernel. It's being intermediated by
19 an agent which is perhaps the end of frame monitor.

20 And so it knows where -- what channel the
21 application is sending network traffic over. So it
22 can -- it differentiates by the traffic that's
23 coming from that channel.

24 Each channel -- each application sending
25 network traffic will have a unique channel, and so

1 the -- the agent will know what channels go to what
2 applications. And then it will use that
3 information to apply policy.

4 Q. And are the -- are the channels that the
5 device is seeing that the application is sending
6 network, you -- sending traffic -- sending network
7 traffic on a unique channel -- that was a really
8 garbled question -- strike that.

9 So the device sees that the applications
10 are sending network traffic on a -- a unique
11 channel that's unique to that application?

12 A. Yeah. In -- in -- in this -- in -- in
13 this example, yes.

14 Q. And is the channel that is -- you're
15 referring to, is that the socket that the
16 application has opened?

17 A. That's -- that's -- that's the most
18 frequently used channel.

19 Q. So it -- so the Rao device is --
20 basically, it's seeing the -- it's seeing the
21 network packets that come in from the application
22 and it's seeing which channel those are on, and
23 then that's what allows it to associate them with
24 the application?

25 A. That's -- that's one example, yes.

1 Q. Are there other -- for the features of
2 Rao that you're pointing to regarding the --
3 you know, the Figure 5, basically, the packet
4 capturing, that Figure 5 is an example where the
5 network packets are coming from the application
6 into the packet capture mechanism and then the
7 device looks at the channel that those packets are
8 destined for, and that's --

9 A. That's -- yes.

10 Q. -- how it works?

11 A. In one -- one in Figure 5, that's how it
12 worked yes.

13 Q. And that's Figure 5A of Rao.

14 A. Correct, yes.

15 Q. Got it.

16 And then could you take a look, actually,
17 at Rao itself at Exhibit 1005.

18 A. I'm there.

19 Q. I found something I thought might be on
20 point here, which is paragraph 187.

21 A. Yes.

22 Q. Is paragraph 187 consistent with your
23 opinion that the remote access client, it's
24 basically looking at the network packets that come
25 in from the application and then figuring out which

1 application the -- sent the network packet based on
2 the channel or socket that --

3 A. Right.

4 So the channel and socket would be
5 identified by destination and IP address and port
6 numbers, for example.

7 Q. I see.

8 And that's referenced right in
9 paragraph 187, right?

10 A. That's correct.

11 Q. And that includes the -- so in
12 paragraph 187, it's saying that the -- the Rao
13 device is -- it's able to check the source and
14 destination IP address and port number of the
15 network packet?

16 A. This is one way, yes.

17 Q. I see.

18 Okay. That makes sense to me.

19 So if we could just take a look at your
20 declaration again.

21 A. Sure. I'm there.

22 Q. I wanted to look at 1e again, that
23 overall part of claim 1.

24 A. Sure.

25 Do you have a paragraph number?

1 Q. Yeah, paragraph 98.

2 A. Okay. I'm there.

3 Q. So in paragraph 97, you actually say
4 here, you have -- "based on a first differential
5 traffic control policy," you describe Rao in
6 paragraph 97, correct?

7 A. Part of Rao, yes.

8 Q. And you're saying here that Rao's remote
9 access client 120 has policies for specifying
10 client-side prioritization of network
11 communications related to applications 338a through
12 338n running on application.

13 And then it -- and then you have a
14 citation to paragraphs 182, 183, 187, 189, 193 to
15 194 and 207?

16 A. That's correct.

17 Q. And then you have a "see also" to 108,
18 109 where, "(The agent in Rao's client device
19 'provides functionality for applying a policy to a
20 perceived packet.'),' " correct?

21 A. That's correct.

22 Q. And so these are the packets -- so Rao's
23 remote access client is receiving the packet from
24 the application and then it's applying policies to
25 the packet; is that right?

1 A. That's fair.

2 Q. Then in paragraph 98, you have -- below
3 that, you see that you have the -- an annotated
4 picture of Rao Figures 1D and 5A?

5 A. Yes.

6 Q. So this is showing -- you've put in red
7 the "Filter, 322" in the annotation, correct?

8 A. One example, yes.

9 Q. And so that's taking -- that includes the
10 packet capture mechanism that's capturing the
11 incoming network packets from the applications?

12 A. So the agent -- the agent in this figure,
13 the packet capture mechanism can operate at the
14 agent level or in the -- in the yellow portion as
15 well.

16 Q. But in either case, the network packets
17 are coming from the applications into the capture
18 mechanism?

19 A. Yes.

20 Q. And then the -- and so it's basically
21 the -- once the -- whether it's the filter or the
22 agent, the network packet gets captured. And then
23 from there, that network packet, Rao teaches, it
24 might get discarded, for example?

25 A. That's correct.

1 Q. Do you have the opinion here in
2 paragraphs 98 through 102 that Rao discloses
3 dropping a network packet based on the
4 foreground/background state of the application?

5 A. Well, my opinion of the Rao-Oestvall
6 device actually discloses that.

7 Q. And my question was whether Rao alone,
8 does that reference disclose dropping a network
9 packet because of the background state of an
10 application?

11 A. That's not an opinion I'm offering in my
12 report.

13 Q. Okay.

14 MR. PICKENS: Okay. I have no further
15 questions. Pass the witness.

16 MS. HUANG: Petitioner has no questions
17 for the witness.

18 Thank you, Dr. McDaniel.

19 THE DEPONENT: Thank you.

20 MR. PICKENS: Thank you, Dr. McDaniel.

21 It was really nice to meet you. I hope you all
22 have a great rest of your day and weekend.

23 And we can -- I think we can conclude the
24 depo.

25 Off the record.

1 (Deposition concluded at 10:58 a.m.)

2 THE COURT REPORTER: Can I just get the
3 copy orders for each of you, please.

4 MR. PICKENS: We'd like a rough and just,
5 I guess, whatever our standard order is -- I think
6 is good.

7 THE COURT REPORTER: You're standing
8 order is a 5-day delivery. So a week.

9 MR. PICKENS: That's good.

10 MS. HUANG: Yeah, that's fine for us too.

11 THE COURT REPORTER: But no rough or you
12 do want a rough?

13 MS. HUANG: Oh, I can get the rough, too.

14 THE COURT REPORTER: Okay. Thank you.

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1 I, DR. PATRICK DREW McDANIEL, do hereby
2 declare under penalty of perjury that I have read
3 the foregoing transcript; that I have made any
4 corrections as appear notes; that my testimony as
5 contained herein, as corrected, is true and
6 correct.

7 Executed this ____ day of _____,
8 2024, at _____, _____.

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DR. PATRICK DREW McDANIEL

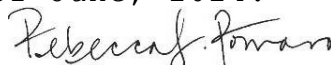
1 I, Rebecca L. Romano, a Registered
2 Professional Reporter, Certified Shorthand
3 Reporter, Certified Court Reporter, do hereby
4 certify: That PATRICK McDANIEL, the witness
5 whose deposition is hereinbefore set forth,
6 was duly sworn by me before the commencement
7 of such deposition and that such deposition
8 was taken before me and is a true record of
9 the testimony given by such witness.

10 I further certify that the adverse party,
11 Petitioner was represented by counsel at
12 the deposition.

13 I further certify that the deposition of
14 PATRICK McDANIEL, occurred virtually on
15 June 14, 2024, commencing at 9:02 a.m. to 10:58
16 a.m.

17 I further certify that I am not related
18 to any of the parties to this action by blood
19 or marriage, I am not employed by or an attorney
20 to any of the parties to this action, and that I
21 am in no way interested, financially or otherwise,
22 in the outcome of this matter.

23 IN WITNESS WHEREOF, I have subscribed my
24 name this 21st day of June, 2024.



25 Rebecca L. Romano, RPR, CCR
CSR. No 12546

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DEPOSITION ERRATA SHEET

Case Name: Samsung Electronics Co., Ltd., vs.
Headwater Research LLC

Name of Deponent: Dr. Patrick Drew McDaniel

Date of Deposition: June 21, 2024

Job No.: 541861

Reason Codes: 1. To clarify the record.
2. To conform to the facts.
3. To correct transcript errors.

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_____ Subject to the above changes, I certify that
 the transcript is true and correct
 _____ No changes have been made. I certify that
 the transcript is true and correct.

DR. PATRICK DREW McDANIEL

A			
a-n	47:4, 47:7,	adding	35:5, 37:7,
18:23	47:10, 47:14,	51:3	37:10, 38:9,
al	47:19, 47:22,	additional	39:4, 46:22,
4:19, 4:24	49:3, 49:7,	29:20, 49:21,	51:20, 56:10,
able	49:11, 55:6,	49:22, 51:15,	56:14, 65:21
62:13	56:2, 56:5,	54:9	allocated
about	56:8, 56:12,	address	29:3
6:4, 9:8,	56:15, 58:6,	62:5, 62:14	allocates
11:17, 11:18,	61:23, 63:9,	addressed	29:4
12:2, 13:21,	63:23	15:2	allow
14:11, 17:3,	accessing	addresses	20:9, 21:18,
17:5, 21:7,	33:25	10:24, 58:9	22:1, 23:16,
21:9, 21:18,	according	addressing	45:19, 46:2,
39:9, 39:21,	13:6, 53:22	15:25, 21:25	46:9, 47:4,
41:23, 43:8,	accordingly	adds	47:14, 48:2,
43:24, 43:25,	8:13	54:19	48:11, 48:25
44:9, 44:18,	achieve	administered	allowed
46:6, 46:7,	35:10	7:2	32:23, 38:16,
51:9, 52:19,	achieves	advance	38:23, 47:10,
54:9, 54:23,	37:21	5:21	47:23, 49:5,
55:5, 58:3	achieving	adverse	49:11
above	15:10, 15:20	68:10	allows
14:14, 33:19,	across	again	60:23
35:11, 36:13,	31:19, 59:16	23:13, 24:9,	alone
70:22	action	31:4, 32:23,	65:7
abstract	68:18, 68:20	33:1, 37:15,	also
44:22, 45:3,	actions	50:8, 57:10,	3:24, 19:11,
46:1, 46:7,	58:4	59:11, 62:20,	32:14, 36:11,
46:8, 47:2	active	62:22	54:16, 55:19,
access	54:2, 54:5,	against	55:22, 56:15,
16:8, 19:13,	54:9	58:4	63:17
20:10, 20:16,	actively	agent	alternate
21:19, 22:1,	27:1, 27:10,	18:5, 19:11,	27:22
22:20, 23:7,	32:14, 41:2	19:24, 20:2,	analysis
23:17, 31:18,	activities	56:11, 57:9,	13:14, 43:11
34:16, 34:22,	45:12, 45:16	59:19, 60:1,	angeles
35:7, 35:10,	activity	63:18, 64:12,	3:20
35:12, 35:16,	28:8, 32:16,	64:14, 64:22	annotated
36:3, 37:2,	33:11	agree	18:6, 19:5,
37:9, 37:11,	actually	11:8, 21:14,	19:17, 64:3
37:18, 37:25,	21:17, 24:4,	40:24, 52:25,	annotation
38:4, 38:8,	27:7, 27:19,	53:1	64:7
38:17, 38:20,	27:25, 31:19,	alexander	annotations
38:22, 39:3,	31:21, 33:8,	3:25	19:20
45:11, 45:19,	34:19, 41:2,	all	another
46:2, 46:10,	53:3, 53:17,	3:2, 13:13,	5:9, 31:10,
	53:20, 61:16,	20:1, 21:25,	31:12, 32:4,
	63:3, 65:6	22:12, 34:17,	32:11, 33:8

answer 11:19, 38:11, 43:6, 57:22, 59:5, 59:11 anticipate 5:7 any 5:11, 5:21, 12:15, 12:22, 13:1, 23:4, 23:5, 23:25, 25:17, 25:18, 26:7, 26:8, 26:18, 26:19, 28:24, 28:25, 29:3, 29:5, 29:14, 29:18, 29:20, 29:24, 30:2, 30:8, 33:4, 34:14, 35:2, 35:18, 35:19, 35:21, 35:22, 36:5, 53:8, 67:3, 68:18, 68:20 anything 30:9, 43:20, 44:10, 44:16, 52:3 api 45:13 apologize 5:21 appeal 1:3, 2:3 appear 67:4 appearances 3:1 appearing 3:2, 13:5 appears 42:1, 44:5 applicable 10:20 application's 23:7, 24:6, 35:7, 39:4	applications 16:3, 16:9, 17:10, 18:23, 19:4, 20:17, 28:6, 30:7, 31:7, 33:10, 40:17, 41:16, 41:17, 41:24, 43:25, 59:14, 60:2, 60:9, 63:11, 64:11, 64:17 applied 46:14 apply 13:12, 35:25, 60:3 applying 14:14, 63:19, 63:24 appropriate 44:7 art 13:8 articulated 34:20 articulating 34:2 asking 38:2, 51:24, 51:25, 53:1 aspect 40:5, 42:3, 42:13, 48:24, 52:9, 54:9 aspects 42:23 associate 60:23 associated 15:10, 15:21, 18:7, 18:9, 18:18, 18:19, 32:16 assume 8:12 attending 5:6	attorney 3:7, 3:17, 7:13, 68:19 august 3:15, 7:13, 10:6 available 8:21 aware 5:10 away 5:12, 34:19, 35:13 B b 20:13 b2 4:11 back 26:3, 33:20, 39:14, 39:15, 48:16 background 20:6, 20:18, 22:22, 23:3, 23:21, 25:7, 25:14, 26:15, 26:25, 27:21, 28:6, 28:19, 28:23, 30:7, 30:13, 30:16, 31:2, 31:7, 32:13, 32:17, 33:2, 33:10, 34:6, 40:7, 40:9, 40:17, 41:18, 42:5, 42:7, 42:16, 42:18, 42:25, 43:18, 44:14, 45:7, 45:21, 46:4, 46:12, 47:9, 47:17, 47:21, 48:3, 48:11, 48:24, 49:9, 49:20, 50:16, 50:19,	51:2, 51:21, 52:2, 52:10, 52:12, 52:21, 52:24, 53:5, 53:19, 54:8, 54:14, 65:4, 65:9 backup 5:11 bandwidth 29:5, 30:19 based 14:9, 45:20, 46:10, 47:7, 47:10, 47:20, 47:23, 49:4, 49:7, 49:11, 51:10, 54:1, 62:1, 63:4, 65:3 basically 13:4, 22:7, 60:20, 61:3, 61:24, 64:20 battery 28:8, 30:3, 30:10, 32:11, 33:12, 42:9 because 19:4, 50:20, 65:9 been 7:2, 8:2, 9:8, 9:10, 11:13, 15:4, 24:13, 31:18, 39:8, 39:20, 70:24 before 1:3, 2:3, 2:24, 5:17, 7:8, 8:3, 9:17, 20:22, 54:22, 68:6, 68:8 beginning 13:23, 14:1, 55:3 begins 10:13, 12:9, 21:3
--	---	--	---

behalf 2:21	47:3, 47:14, 48:2, 48:9, 48:22	brought 32:22	ccr 1:28, 1:30, 1:32, 68:27
being 19:13, 23:4, 23:24, 25:17, 26:7, 26:18, 28:24, 29:3, 29:14, 31:15, 33:4, 34:14, 35:1, 35:18, 35:21, 36:4, 38:11, 38:15, 38:16, 42:15, 52:7, 58:15, 59:18	blocked 37:19, 38:5, 38:8, 38:10, 38:18, 38:20, 38:22, 39:1, 47:7, 47:20, 49:3, 49:7	build 17:25	cease 41:5
believe 7:9, 23:10, 23:19, 26:22, 36:7, 42:21, 44:2	blocking 27:23, 28:15, 28:17, 34:3, 34:5, 35:23, 36:6, 36:20, 37:2, 37:21, 37:24, 39:2, 39:4	C	certain 14:15, 17:10, 53:21
below 16:6, 64:2	blocks 33:24	california 1:29, 3:20	certification 40:18
benefit 50:1, 51:23, 54:18	blood 68:18	called 59:2	certified 2:25, 2:26, 68:2, 68:3
best 5:9, 8:11	blue 18:10	calls 19:3, 52:15	certify 68:4, 68:10, 68:13, 68:17, 70:22, 70:24
between 48:8, 58:25, 59:3	board 1:3, 2:3, 11:6	canonical 28:14	challenge 10:21
beyond 12:22	bold 21:17	capable 42:4, 42:15	chandra 3:25
bit 12:2, 43:5, 43:11, 47:1	bolded 36:18	capture 56:18, 56:22, 56:24, 57:2, 57:5, 57:8, 57:11, 57:14, 57:24, 61:6, 64:10, 64:13, 64:17	changes 30:23, 70:22, 70:24
block 20:11, 21:18, 22:1, 23:7, 27:17, 34:10, 34:15, 34:21, 35:6, 35:10, 35:12, 35:16, 36:2, 36:17, 36:18, 37:7, 37:8, 37:10, 37:11, 37:13, 37:25, 45:19, 46:1, 46:9,	both 18:14	captured 58:15, 64:22	channel 59:2, 59:17, 59:20, 59:23, 59:24, 59:25, 60:7, 60:11, 60:14, 60:18, 60:22, 61:7, 62:2, 62:4
	bottom 10:13, 16:5, 56:14, 56:24	captures 58:17	channels 60:1, 60:4
	boulevard 3:18	capturing 61:4, 64:10	check 62:13
	break 39:9, 39:12	carefully 43:5, 52:19	checked 52:7
	breaks 8:8	case 20:11, 24:8, 28:14, 30:18, 30:24, 31:10, 31:15, 38:16, 38:20, 38:23, 64:16, 69:2	checking 51:5, 52:3, 54:17
	broad 29:1	cases 51:20	citation 63:14
	broader 44:6, 50:20	catch 16:16, 16:17	citations 24:12
	broadly 15:9, 15:20, 43:23	categories 29:10	citing 34:18
			claim 10:25, 11:3,

11:7, 11:9, 12:15, 12:20, 12:22, 13:6, 13:7, 21:16, 21:25, 22:11, 34:16, 36:13, 37:12, 46:18, 47:1, 47:3, 47:6, 47:13, 48:21, 49:15, 49:16, 49:23, 50:3, 50:4, 50:10, 50:11, 50:12, 50:13, 50:17, 50:20, 50:25, 51:5, 51:6, 51:9, 51:12, 51:15, 51:16, 52:1, 52:9, 52:20, 53:2, 53:5, 53:7, 53:11, 53:13, 53:17, 53:18, 53:22, 54:1, 54:4, 54:6, 54:15, 54:19, 62:23 claimed 36:2, 37:18, 50:19 claims 10:21, 12:12, 12:16, 14:3, 46:6 clarify 8:11, 11:20, 13:2, 69:7 classification 19:2 classified 19:8 classifies 19:24 classify 18:23, 20:3 clause 47:6 clear 22:12, 32:2,	52:7 clearer 57:22 clearly 32:6 client 55:7, 55:14, 56:2, 56:5, 56:8, 56:12, 56:16, 58:6, 61:23, 63:9, 63:18, 63:23 client-side 63:10 codes 69:7 color 19:20 com 3:12, 3:22 combination 14:7, 14:8, 16:13, 16:22, 17:19, 18:1 combine 35:11 combined 17:23, 18:21, 20:1, 20:2, 22:13, 34:4, 35:12, 35:15 come 60:21, 61:24 comes 13:2, 30:22, 58:22, 59:9 coming 57:17, 59:16, 59:23, 61:5, 64:17 commencement 68:6 commencing 2:22, 68:15 communicated 45:17 communications 63:11	completely 27:23, 31:21 complies 6:1 complimentary 5:19 component 25:6, 25:23 compound 53:10 computer 5:12, 7:23 computing 40:6, 42:3, 42:14, 55:14, 55:18, 55:20, 56:1, 56:2 conceptual 56:17, 57:4, 57:10 conclude 65:23 concluded 66:1 conclusions 10:13 condition 48:7, 48:10, 48:12, 48:20, 48:21, 48:22, 48:25, 51:20 conditional 48:8, 48:20 conditions 49:21, 49:22, 50:2, 50:10, 50:12 configuration 19:10, 31:25, 57:18 configure 57:14 configured 51:10 conform 69:8 confusing 37:14, 50:5,	53:24 connect 5:16 connecting 5:16 connection 22:10 consequence 29:1, 29:25 conserve 42:8, 42:18, 43:1, 43:19, 44:14 consistent 61:22 constitute 38:4, 38:17 construction 12:15, 12:22 consume 29:8, 30:21, 30:24, 31:2 consumes 19:13 consuming 23:5, 23:25, 25:18, 26:8, 26:19, 28:25, 29:5, 29:6, 29:14, 33:4, 34:14, 35:2, 35:19, 35:22, 36:5 contained 67:5 contains 56:2 context 17:22, 35:3 contingent 46:16 continue 26:25, 27:10 contradicts 44:12 contributing 16:11, 16:21, 16:23
--	--	--	---

control 21:3, 25:15, 25:22, 25:23, 26:16, 45:11, 45:18, 63:5 conversations 5:13 copies 8:18, 9:2 copy 9:24, 66:3 correct 7:8, 8:3, 8:19, 8:20, 10:2, 10:6, 10:21, 10:22, 11:1, 11:3, 12:13, 12:14, 14:4, 14:7, 17:4, 17:11, 18:2, 19:1, 19:16, 20:18, 22:4, 23:23, 24:9, 24:10, 26:1, 26:11, 29:15, 29:16, 29:19, 30:3, 32:24, 33:5, 33:12, 33:17, 34:1, 34:9, 34:16, 35:2, 35:7, 35:20, 36:15, 37:4, 38:25, 41:4, 41:25, 45:8, 45:9, 45:13, 48:19, 49:16, 50:11, 52:4, 53:20, 55:25, 56:3, 56:4, 58:16, 61:14, 62:10, 63:6, 63:16, 63:20, 63:21, 64:7, 64:25, 67:6, 69:9, 70:23, 70:25 corrected 67:5	corrections 67:4 correctly 10:23, 15:12, 18:14, 23:9, 23:18, 25:19, 42:20 correspond 9:14 could 5:24, 7:15, 10:9, 12:6, 13:21, 20:19, 24:22, 29:22, 30:3, 30:24, 36:22, 51:7, 51:8, 51:11, 53:8, 57:7, 57:8, 57:11, 57:13, 58:18, 59:7, 59:11, 61:16, 62:19 counsel 3:1, 39:8, 68:11 count 41:1 couple 8:3, 21:6, 27:15, 27:19, 39:21, 44:18, 54:23 court 2:26, 5:24, 6:2, 66:2, 66:7, 66:11, 66:14, 68:3 covers 40:2 cpu 32:16 criteria 40:18, 40:19, 51:10 critical 14:24 csr 1:28, 1:29,	1:31, 68:28 curious 11:12 customary 13:7 D dashed 56:9 data 28:7, 31:8, 33:11, 34:7 date 14:25, 69:5 dated 10:6 day 65:22, 67:7, 68:24 decided 29:23 decision 8:25, 48:1 declaration 4:13, 9:11, 9:19, 10:4, 10:10, 12:4, 12:7, 12:11, 13:21, 17:21, 19:18, 20:23, 21:1, 21:15, 24:19, 26:3, 33:20, 34:8, 55:1, 55:3, 55:24, 62:20 declare 67:2 define 40:19 definition 29:7 degree 7:19, 7:21 delivery 66:8 denies 32:14 denying 17:9, 40:16,	43:8, 43:24, 44:7, 44:9 depend 20:5, 20:6 dependency 48:8 dependent 46:2, 47:15, 48:2, 49:16 depending 22:21 depo 65:24 deponent 2:22, 4:2, 6:1, 6:7, 12:20, 38:7, 43:4, 48:16, 50:7, 50:23, 52:6, 52:17, 53:11, 53:25, 54:12, 65:19, 69:4 deponent's 1:22 deposed 8:2 deposition 1:20, 2:20, 5:20, 6:4, 8:4, 66:1, 68:5, 68:7, 68:12, 68:13, 69:1, 69:5, 70:1 describe 17:15, 22:8, 28:16, 63:5 described 14:14, 18:2, 33:16, 33:19, 34:4 describes 14:14, 22:20, 25:5 describing 17:18, 41:7, 58:11 description 17:20, 39:23,
---	---	---	--

58:10 design 18:3 destination 58:8, 62:5, 62:14 destined 61:8 detect 52:22 determination 45:20, 46:3, 46:11, 46:15, 47:8, 47:11, 47:16, 47:20, 47:23, 49:4, 49:8, 49:12, 49:19, 51:1, 54:16 determine 25:7, 45:6, 51:1, 51:10, 53:4, 53:12, 53:13, 58:21, 59:9 determined 52:18 determines 40:6, 54:1, 54:13 determining 42:4, 42:15, 50:14, 50:18, 52:9, 52:20, 53:18, 54:4, 54:7, 58:3 device 15:11, 15:21, 15:24, 16:7, 16:8, 16:12, 17:14, 17:24, 20:16, 22:13, 23:3, 23:20, 26:6, 28:23, 29:13, 29:18, 29:23, 30:6, 32:11, 34:13, 35:1, 35:6,	35:12, 35:16, 36:2, 36:10, 36:17, 37:16, 38:11, 40:6, 40:15, 42:4, 42:8, 42:14, 44:24, 49:24, 50:11, 50:17, 51:12, 51:13, 51:25, 52:8, 53:17, 54:3, 55:15, 56:1, 56:2, 58:16, 58:21, 58:25, 59:9, 60:5, 60:9, 60:19, 61:7, 62:13, 63:18, 65:6 devices 55:18, 55:20 diagram 56:15, 56:17, 57:4, 57:11 differed 43:21 different 11:17, 11:18, 27:20, 28:1, 28:2, 28:17, 31:24, 32:6 differential 45:18, 63:4 differentiates 59:22 direct 54:17 directly 49:24, 50:15, 51:21 disagrees 11:6 disallowing 39:2 discarded 38:15, 39:5, 64:24 discarding 37:2	discards 37:16, 58:7, 58:8 disclose 30:12, 65:8 disclosed 58:11 discloses 28:18, 65:2, 65:6 disclosing 27:25 disclosure 34:12 discuss 12:2, 14:22, 16:2, 16:25, 22:9, 22:15 discussed 44:4 discussing 21:16 discussion 12:19, 29:11, 36:11 discussions 5:11 display 25:8, 52:3, 52:12, 52:13 disregarded 38:24 distinguishes 24:5 doctorate 7:19 doing 19:3, 31:17, 58:17 down 10:9, 12:3, 12:7, 16:5, 16:15 downloaded 41:16 dr 1:20, 2:20, 4:3, 4:14, 7:1,	7:6, 39:16, 65:18, 65:20, 67:1, 67:13, 69:4, 70:28 drain 28:8, 30:3, 30:9, 33:12 drew 1:20, 2:20, 4:3, 7:1, 7:17, 67:1, 67:13, 69:4, 70:28 dropping 37:1, 37:20, 38:3, 65:3, 65:8 drops 37:16 duly 68:6 E e 23:8, 23:17 each 5:17, 42:22, 43:16, 59:24, 66:3 effect 25:16, 26:17 effectively 58:14 efficiencies 15:10, 15:20 efficiency 15:2, 35:10 either 30:22, 57:8, 64:16 electrical 7:22 electronics 1:5, 2:5, 3:4, 69:2 element 21:25, 37:12 elements 22:15, 51:15, 56:10
---	---	--	--

else 44:10, 52:3 embedded 55:7 embodiment 33:8, 55:23, 57:3, 57:6 employed 68:19 employing 57:15 enabled 5:14, 19:11 enacted 39:7 encompasses 56:10 end 21:4, 32:21, 41:12, 47:5, 59:19 end-user 21:19, 22:3, 37:3, 37:17, 37:18, 37:22, 38:5, 38:18, 38:21, 44:24, 47:4, 47:8, 47:11, 47:21, 47:24, 49:19, 52:10, 54:7, 58:22, 59:10 energy 30:19 engineering 7:22 enough 38:4, 40:25 entire 17:21 errata 69:1, 70:1 errors 69:9 essentially 59:16 everyone 5:5	everything 56:6 examination 4:2, 7:4 examined 7:2 example 23:2, 27:20, 28:5, 28:14, 29:21, 29:22, 31:6, 31:10, 31:12, 31:20, 32:3, 32:4, 33:9, 34:5, 43:8, 57:13, 57:16, 58:12, 58:19, 60:13, 60:25, 61:4, 62:6, 64:8, 64:24 examples 44:3 excellent 8:5, 13:19 excuse 9:21 executed 67:7 exemplars 29:10 exhibit 4:10, 4:13, 4:16, 4:21, 9:3, 9:4, 9:9, 9:10, 9:11, 9:18, 24:13, 39:20, 44:19, 61:17 exhibits 8:23, 9:7, 9:13 exist 49:4, 51:6, 51:7, 51:8, 51:11 exists 49:8, 49:12, 51:14, 51:20 expanding 28:2, 28:10	expands 28:16, 29:9 expended 30:19 explain 56:21 explained 16:6 expressly 14:22, 16:1, 16:24	61:4, 61:11, 61:13, 64:12 figures 64:4 figuring 61:25 filter 57:9, 58:3, 58:6, 64:7, 64:21 filtered 58:16 filtering 57:12, 59:3 financially 68:21 fine 66:10 first 10:5, 10:24, 14:13, 21:19, 22:3, 22:9, 22:18, 25:10, 26:10, 30:15, 31:5, 31:14, 31:20, 31:24, 32:2, 32:8, 37:3, 37:18, 37:22, 38:4, 38:17, 38:21, 39:22, 40:5, 41:14, 45:3, 47:4, 47:8, 47:11, 47:20, 47:23, 49:19, 63:4 fish 3:5 floor 3:19 focused 15:10, 15:20 following 27:18 follows 7:3 foregoing 67:3
---	--	---	--

foreground 20:6, 20:9, 22:23, 23:12, 24:7, 25:8, 30:22, 32:12, 32:23, 40:8, 42:6, 42:16, 45:7, 45:22, 46:4, 46:12, 47:12, 47:17, 47:24, 48:4, 48:13, 49:1, 49:6, 49:13, 52:2, 52:12, 52:13, 52:21, 52:23, 53:14, 54:14, 65:4 form 9:22, 38:6, 43:3, 48:15, 50:5, 50:22, 51:17, 52:5, 53:10, 54:11 formed 10:13 forth 68:5 found 23:6, 23:15, 34:21, 44:11, 61:19 frame 57:16, 59:19 framed 57:23 free 13:2, 43:13 frequently 60:18 friday 1:23, 2:23, 5:1 full 7:12, 7:15, 52:17 function 28:13 functionality 18:7, 18:9,	18:18, 18:19, 34:3, 63:19 functions 57:23 further 15:22, 15:23, 17:6, 17:8, 49:18, 65:14, 68:10, 68:13, 68:17 G games 41:17 garbled 60:8 generally 22:2, 22:5 getting 55:12 give 6:4, 21:11, 29:18, 29:24, 50:24, 57:20, 59:11 given 19:13, 23:4, 23:25, 25:17, 26:7, 26:18, 28:24, 29:14, 30:14, 31:18, 33:4, 34:14, 35:1, 35:18, 35:21, 36:5, 68:9 gives 29:10 giving 53:5 go 13:17, 16:5, 16:15, 20:21, 20:25, 39:11, 60:1 goes 17:20 going 9:7, 10:18,	11:21, 17:14, 26:3, 27:7, 33:20, 38:9, 39:8, 46:19, 59:17 good 7:6, 7:7, 66:6, 66:9 great 8:16, 9:1, 9:21, 10:3, 10:8, 11:5, 12:1, 13:19, 24:17, 44:21, 46:25, 65:22 ground 8:6, 10:24, 11:6, 11:12, 11:23, 12:2, 13:23, 14:2, 14:6, 14:9 grounds 10:20, 11:8 guess 38:2, 39:1, 39:23, 51:25, 66:5 H half 56:14, 56:23, 56:24 hand 5:25 handler 25:16, 26:17 handy 39:18 happen 28:17 happens 19:24 head 12:24 heading 59:15 headwater 1:10, 2:10,	3:14, 7:14, 69:3 heard 11:17 help 5:14, 12:6, 59:7 hence 32:15 here 12:23, 20:12, 24:18, 27:6, 33:23, 37:1, 43:7, 44:16, 55:6, 58:2, 61:20, 63:4, 63:8, 65:1 hereby 67:1, 68:3 herein 55:19, 67:5 hereinbefore 68:5 higher-priority 14:15 highlighted 18:6 highlighting 17:21 history 13:9 hope 65:21 hour 39:9 housekeeping 9:16 huang 3:6, 38:6, 39:8, 43:3, 48:15, 50:5, 50:22, 51:17, 52:5, 52:15, 53:10, 53:23, 54:11, 65:16, 66:10, 66:13 I identified 15:9, 15:19,
---	--	---	---

62:5 identify 5:15, 5:17, 59:4 illustrated 18:1 illustrating 57:7 image 55:23 impact 15:1 implement 15:3, 30:6 implementation 14:23, 16:2, 16:23, 30:4, 30:11, 30:12, 33:19 implemented 38:11 implementing 20:19, 40:15 implements 58:19 imply 44:5 imposes 49:18 improve 15:5, 18:5 improved 19:11 includes 56:11, 58:6, 62:11, 64:9 inclusive 8:24 incoming 64:11 inconsistent 44:12 incorporate 17:14, 18:7, 18:16 incorporating 18:13 independent 10:25, 11:2	indicated 13:15 inevitable 29:25 information 60:3 inside 55:7, 56:7 instance 58:12, 58:18, 58:25 instances 57:1 instigate 20:4 institution 8:25 integrated 18:20 inter 8:24 interacting 49:25, 51:22 interaction 54:17 interested 68:21 interface 21:4, 45:12 intermediated 59:18 intermediates 58:25 internet 45:11, 45:16 interpretation 12:12, 12:21, 13:16, 31:23 interpretations 44:6 interpreted 12:18, 13:6 interrupt 25:15, 26:16 invention 28:5, 31:6, 32:9, 33:9, 33:15, 33:16,	40:1, 40:5, 40:15, 41:15, 42:23, 42:24, 43:17, 43:21 ip 62:5, 62:14 ipr 1:14, 2:14, 8:19, 9:4 issue 9:10, 15:25 issues 5:22 itself 41:2, 61:17 J james 3:16, 7:7, 7:12 jennifer 3:6 jhuang@fr 3:12 job 1:33, 69:6 jpickens@raklaw 3:22 jump 10:9, 12:7 june 1:23, 2:23, 5:1, 68:15, 68:24, 69:5 juxtaposition 31:14 K kabat 3:15, 7:13 keep 12:6 kernel 59:18 kind 50:25 kinds 28:17 know 8:2, 8:6, 8:9,	8:11, 8:18, 9:6, 13:5, 20:23, 25:1, 30:20, 36:11, 38:14, 39:22, 43:15, 51:13, 52:19, 53:14, 57:1, 58:19, 60:1, 61:3 knows 59:20 L labeled 12:9 laid 22:13, 28:3, 28:10, 34:23, 35:11 last 19:9, 26:23, 48:5 law 3:7, 3:17 laying 28:13 lays 12:21, 27:19, 28:14, 57:23 least 8:3, 21:5 let's 12:2, 20:21, 46:18 level 40:19, 64:14 limitation 21:3, 22:16, 36:8, 48:6, 49:18, 54:20 line 56:9, 69:10, 69:12, 69:14, 69:16, 69:18, 69:20, 69:22, 69:24, 69:26, 69:28, 70:2, 70:4, 70:6,
--	--	---	--

70:8, 70:10, 70:12, 70:14, 70:16, 70:18, 70:20 little 43:5, 43:10, 43:11 llc 1:10, 2:10, 69:3 local-area 44:25 located 2:22, 7:24 location 1:22 logically 56:10 longer 47:1 look 15:4, 15:15, 20:22, 24:11, 24:22, 26:23, 27:18, 32:7, 35:23, 36:22, 43:13, 44:22, 46:18, 46:22, 55:1, 61:16, 62:19, 62:22 looking 10:3, 15:3, 19:17, 43:7, 52:1, 52:11, 61:24 looks 14:20, 61:7 los 3:20 lots 52:22 lower-priority 14:16	madison 8:1 main 9:7 make 9:6, 11:20, 13:1, 55:13 makes 26:2, 62:18 mapping 33:23 marriage 68:19 materials 8:18, 8:21 matter 68:22 maybe 37:14, 57:21 mcdaniel 1:20, 2:20, 4:3, 4:14, 7:1, 7:6, 7:17, 39:16, 65:18, 65:20, 67:1, 67:13, 68:4, 68:14, 69:4, 70:28 mean 15:18, 51:4 meaning 13:7, 13:13 means 29:17, 39:2, 39:4, 48:1 mechanism 56:18, 56:22, 56:24, 57:2, 57:8, 57:11, 57:12, 57:15, 59:4, 61:6, 64:10, 64:13, 64:18 mechanisms 57:5 meet 7:10, 7:11, 34:15, 37:18,	40:18, 52:8, 53:17, 53:18, 54:3, 65:21 memory 29:5, 29:19, 30:8 mentioned 16:1 merely 41:4 met 7:8, 48:10, 48:12, 48:23, 48:25, 49:23 method 53:25 mic 5:13 michigan 7:23 middle 55:9 might 41:24, 61:19, 64:24 mind 9:17, 24:14 minneapolis 3:10 minnesota 3:10 mobile 15:11, 15:21, 15:24 modem 21:20, 23:8, 23:17, 33:25, 34:16, 35:7, 36:3, 37:3, 37:9, 37:11, 37:19, 37:22, 38:1, 38:5, 38:8, 38:18, 38:20, 38:22, 39:3, 45:17, 47:5 modems 45:1	moment 21:11, 24:25, 57:20 monitor 57:16, 57:24, 59:19 monitoring 57:16 more 9:16, 17:3, 27:12, 43:5, 43:11, 45:6, 53:20, 54:23 morning 7:6, 7:7 most 60:17 motivated 15:4 motivation 35:11 multi-tasking 40:6 multiple 53:15 multitasking 42:3, 42:14 mute 5:13
M			N
made 46:15, 67:3, 70:24			name 7:12, 7:15, 68:24, 69:2, 69:4 natural 29:1 necessarily 51:4 need 8:8, 37:10, 50:2, 50:3, 50:10, 50:18, 51:13 needs 35:6 net 35:21

network 14:16, 15:2, 20:10, 23:8, 23:17, 27:17, 27:22, 28:7, 29:4, 30:18, 31:8, 31:9, 31:11, 31:18, 31:19, 33:11, 34:7, 34:22, 35:13, 35:17, 35:21, 35:22, 35:24, 36:17, 36:20, 37:2, 37:17, 44:25, 45:19, 46:2, 46:9, 58:14, 58:15, 59:15, 59:21, 59:25, 60:6, 60:10, 60:21, 61:5, 61:24, 62:1, 62:15, 63:10, 64:11, 64:16, 64:22, 64:23, 65:3, 65:8 nevada 1:30 new 50:1, 51:22 next 13:20, 15:7, 23:1, 45:5, 45:10, 45:15, 53:16 nice 7:10, 7:11, 65:21 non-trusted 27:2, 40:7 notes 67:4 nothing 6:5 notified 41:6 notion 16:11	number 53:8, 62:14, 62:25 numbers 9:3, 9:5, 62:6 O o-e-s-t-v-a-l-l 9:15, 11:24 oath 7:2 objection 38:6, 43:3, 48:15, 50:5, 50:22, 51:17, 52:5, 52:15, 53:10, 53:23, 54:11 obvious 23:6, 23:15, 34:21, 35:25 obviously 14:3 occurred 68:14 oestvall 9:15, 11:16, 11:23, 14:2, 14:7, 14:9, 15:9, 15:16, 15:19, 15:22, 15:25, 16:11, 16:18, 16:21, 16:23, 17:4, 17:5, 17:6, 17:8, 19:3, 20:20, 22:10, 22:19, 23:22, 24:3, 24:4, 24:12, 24:14, 24:19, 24:22, 25:25, 26:4, 26:11, 26:14, 26:24, 27:6, 27:14, 29:12, 29:17, 29:22, 30:11, 30:12, 31:1, 32:8,	33:24, 34:3, 34:12, 34:17, 35:4, 35:9, 35:14, 35:25, 36:1, 39:18, 40:2, 40:4, 40:25, 42:24 oestvall's 18:8, 18:15, 20:8, 23:3, 23:20, 26:6, 28:22, 29:23, 30:6, 34:13, 34:25, 35:5 off-record 5:11 offered 12:15 offering 65:11 offers 17:6, 17:8 office 1:1, 2:1 often 59:2, 59:18 oh 36:21, 66:13 okay 9:1, 10:9, 10:17, 11:2, 11:5, 11:11, 11:21, 12:1, 12:25, 13:19, 13:20, 13:25, 14:1, 14:10, 18:21, 19:23, 21:8, 21:22, 22:6, 22:18, 24:17, 25:4, 25:5, 26:2, 26:13, 26:23, 36:21, 39:15, 39:24, 41:12, 41:22, 44:8, 44:18, 44:21, 45:25, 46:18, 46:20, 46:25,	48:7, 49:7, 49:15, 50:7, 53:2, 54:22, 55:4, 56:18, 58:13, 62:18, 63:2, 65:13, 65:14, 66:14 once 29:23, 33:1, 64:21 one 5:9, 10:5, 11:2, 11:13, 11:15, 11:16, 11:17, 13:8, 17:22, 18:3, 21:5, 27:16, 27:20, 28:5, 28:14, 29:20, 29:22, 30:4, 30:11, 31:5, 31:21, 32:2, 32:3, 33:8, 33:18, 35:8, 35:22, 37:13, 37:16, 37:21, 38:3, 45:5, 50:13, 50:14, 50:25, 53:8, 53:12, 54:13, 57:3, 57:4, 57:7, 57:10, 57:13, 57:18, 58:19, 58:25, 60:25, 61:11, 62:16, 64:8 only 10:24, 11:2, 28:18, 39:1 open 9:20, 9:22, 24:16, 44:20 opened 60:16 opening 9:18 operate 64:13
--	--	---	--

operated 32:11 operating 42:13, 42:14, 50:15 operation 15:11, 15:21 opinion 15:15, 17:25, 27:25, 28:4, 28:9, 55:2, 58:5, 61:23, 65:1, 65:5, 65:11 opinions 12:16, 12:22, 21:7 optimization 15:23 options 27:12, 27:16, 28:3, 28:10, 28:19 order 37:25, 40:9, 42:7, 42:18, 43:1, 43:5, 43:19, 44:14, 66:5, 66:8 orders 66:3 ordinary 13:7, 13:8, 13:13 oregon 1:31 other 14:16, 20:11, 27:17, 44:8, 48:24, 49:5, 53:9, 61:1 others 30:25 otherwise 8:12, 44:12, 68:21 out 12:21, 22:14,	27:19, 28:3, 28:10, 28:13, 34:23, 35:11, 57:23, 61:25 outcome 68:22 outside 7:25 over 5:9, 14:16, 28:7, 31:8, 33:11, 34:7, 59:21 overall 62:23 owner 1:11, 2:11, 2:21, 3:14, 7:14 P packet 36:20, 37:13, 37:17, 37:21, 37:24, 38:3, 38:7, 56:18, 56:22, 56:23, 57:2, 57:5, 57:7, 57:11, 57:14, 57:24, 58:8, 58:14, 58:17, 58:22, 59:9, 61:3, 61:6, 62:1, 62:15, 63:20, 63:23, 63:25, 64:10, 64:13, 64:22, 64:23, 65:3, 65:9 packet-based 15:5 packets 14:16, 14:17, 36:17, 37:2, 37:8, 37:10, 37:24, 38:14, 38:15, 38:23, 39:5, 57:17, 58:4, 58:7,	58:15, 59:16, 60:21, 61:5, 61:7, 61:24, 63:22, 64:11, 64:16 page 4:3, 10:5, 10:10, 10:14, 10:18, 12:8, 12:9, 13:22, 14:1, 19:10, 19:18, 20:25, 21:10, 44:23, 46:23, 55:3, 55:9, 55:23, 69:10, 69:12, 69:14, 69:16, 69:18, 69:20, 69:22, 69:24, 69:26, 69:28, 70:2, 70:4, 70:6, 70:8, 70:10, 70:12, 70:14, 70:16, 70:18, 70:20 pages 1:34, 10:1, 10:2 paragraph 12:7, 12:20, 13:4, 13:11, 13:18, 14:12, 14:13, 14:21, 15:7, 15:18, 17:3, 17:15, 17:18, 18:2, 18:11, 20:21, 21:9, 21:12, 21:14, 21:17, 22:8, 22:18, 24:12, 24:19, 24:23, 25:1, 25:5, 26:4, 26:5, 26:11, 26:13, 27:19, 27:25, 28:1, 28:9, 28:11, 28:18, 28:22,	30:16, 31:5, 31:23, 32:7, 32:19, 32:21, 33:1, 33:5, 33:7, 33:21, 33:24, 34:8, 34:11, 34:23, 35:20, 36:22, 37:6, 40:4, 40:12, 40:14, 40:25, 41:7, 41:14, 41:20, 41:22, 41:23, 42:2, 42:12, 43:23, 44:5, 44:9, 55:17, 57:25, 58:5, 61:20, 61:22, 62:9, 62:12, 62:25, 63:1, 63:3, 63:6, 64:2 paragraphs 21:24, 22:7, 22:8, 22:12, 22:14, 33:16, 36:13, 40:2, 41:13, 43:14, 43:16, 43:24, 44:11, 63:14, 65:2 part 17:5, 21:25, 22:16, 36:12, 55:12, 56:12, 56:15, 62:23, 63:7 partes 8:24 particular 34:18, 58:12, 58:18 parties 3:2, 68:18, 68:20 parts 56:7 party 41:16, 68:10
--	---	---	--

pass 65:15 patent 1:1, 1:3, 1:11, 1:15, 2:1, 2:3, 2:11, 2:15, 2:21, 3:14, 4:10, 4:16, 4:21, 7:14, 9:9, 9:10, 12:12, 12:16, 13:6, 13:10, 13:14, 13:15, 44:3, 44:19, 44:23, 49:16 patents 13:17 patrick 1:20, 2:20, 4:3, 4:14, 7:1, 7:17, 67:1, 67:13, 68:4, 68:14, 69:4, 70:28 pause 41:9 pdf 9:22, 10:1, 46:22 penalty 6:3, 67:2 perceived 63:20 perceiving 49:25, 51:22 perceptible 54:18 perform 16:7 perhaps 31:17, 44:6, 59:19 perjury 6:3, 67:2 permission 23:16 permitted 23:13, 24:9	pertaining 13:9 petition 8:24, 9:13 petitioner 1:6, 2:6, 3:4, 65:16, 68:11 phone 5:17, 30:20 physical 9:24 pickens 3:16, 4:6, 7:5, 7:12, 12:25, 29:12, 38:13, 39:11, 39:14, 39:15, 43:12, 48:18, 50:9, 51:7, 51:18, 52:8, 52:25, 53:16, 54:3, 54:15, 65:14, 65:20, 66:4, 66:9 picture 64:4 piece 17:22, 34:19 placed 32:13 plain 13:12 please 5:8, 5:9, 5:12, 5:14, 5:17, 5:25, 7:16, 8:10, 10:10, 66:3 poa 8:25 point 39:10, 61:20 pointed 43:25 pointing 61:2 policies 14:14, 27:20,	63:9, 63:24 policy 20:2, 20:4, 20:8, 20:20, 27:23, 28:14, 30:23, 35:24, 38:10, 39:6, 45:18, 46:14, 46:15, 54:12, 57:15, 58:20, 60:3, 63:5, 63:19 polling 27:21, 28:7, 30:17, 31:7, 31:17, 31:19, 33:10, 34:6, 34:7, 34:9 port 62:5, 62:14 portion 54:6, 64:14 posita 14:25, 15:3, 15:8, 15:15, 15:19, 17:25, 18:4, 18:14, 23:5, 23:15, 30:5, 34:19, 34:20, 35:8, 35:23 potential 57:18 potentially 28:8, 33:12 power 32:15 powered 42:9 powering 30:20 practice 29:22, 36:8, 37:25, 50:17, 51:4, 51:12, 52:1 pre-marked 9:11, 39:20,	44:19 predefined 40:18 premarked 4:9, 9:3, 9:8, 24:13 present 3:24, 28:5, 31:6, 32:8, 32:9, 33:9, 33:15, 40:5, 40:15, 41:15, 42:23 presented 10:20 preserve 17:9, 40:10, 40:15 preserves 32:15 preserving 30:18, 30:19 pretty 29:1, 32:2, 35:24, 35:25 prevent 19:12, 20:4, 20:16, 27:8, 27:16, 28:6, 31:6, 33:9, 41:2 prevented 27:1, 27:3, 27:10, 30:17, 32:14, 33:3, 41:17, 43:1, 43:18 preventing 24:1, 24:5, 27:20, 31:11, 31:12, 34:6, 35:17, 36:4, 37:9, 42:6, 42:17, 44:13 prevention 23:7, 34:21, 34:24 prevents 23:3, 23:22,
---	--	---	---

23:24, 25:16, 26:6, 26:17, 28:24, 29:13, 34:13, 35:1, 40:8 preview 46:21 previous 57:22 previously 44:4 principally 22:14 prioritization 14:24, 15:5, 16:3, 16:8, 63:10 prioritize 14:15 priority 19:5 problem 9:25 problems 15:1 proceed 8:7, 8:13 proceeding 5:6, 5:10, 8:19, 9:12, 12:17 process 29:21, 31:15 processing 50:23 processors 45:6, 45:10, 45:17 professional 2:26, 68:2 program 21:4, 29:6, 29:7, 31:16, 45:12 programmed 42:4 pronounce 11:11, 11:13,	11:16 prosecution 13:9 provide 5:19, 34:5 provided 23:14 provides 50:13, 53:25, 63:19 providing 15:22, 33:18, 53:12 pub 4:18, 4:23 publication 4:17, 4:22 pulling 24:14 purchase 5:20 purple 18:9, 18:25 purposes 5:11 put 21:17, 57:8, 64:6	quickly 10:17, 28:9, 33:12 quite 16:16 quotation 26:5 quoted 26:4 quoting 26:10, 26:13, 26:20	63:18, 63:22 rao-oestvall 16:7, 16:13, 16:22, 17:13, 17:19, 18:1, 18:22, 20:15, 35:16, 36:2, 36:10, 38:10, 65:5 read 15:12, 16:9, 21:22, 23:9, 23:18, 25:19, 26:19, 31:9, 32:18, 34:22, 40:11, 41:19, 42:20, 46:13, 48:16, 67:2 reading 13:11, 17:7, 19:9, 25:9, 45:2 reads 26:14 ready 25:2, 25:4 really 60:7, 65:21 reask 16:19 reason 11:9, 11:10, 69:7, 69:10, 69:12, 69:14, 69:16, 69:18, 69:20, 69:22, 69:24, 69:26, 69:28, 70:2, 70:4, 70:6, 70:8, 70:10, 70:12, 70:14, 70:16, 70:18, 70:20 rebecca 1:28, 2:25, 68:1, 68:27 receiving 63:23 recess 39:13
	Q	R	
	question 8:10, 13:12, 16:17, 16:19, 17:16, 28:21, 37:14, 43:6, 43:15, 46:19, 47:13, 48:17, 48:19, 50:8, 50:24, 53:16, 57:22, 59:8, 60:8, 65:7 questions 14:11, 21:6, 39:21, 44:18, 54:23, 65:15, 65:16 quick 39:12	raise 5:24 rao 9:14, 11:15, 11:21, 11:22, 14:2, 14:7, 14:9, 14:14, 14:22, 15:2, 15:3, 15:9, 16:1, 16:12, 16:24, 18:13, 18:16, 18:20, 19:19, 22:8, 22:15, 22:19, 34:4, 35:25, 36:10, 54:23, 55:2, 55:5, 58:6, 58:10, 58:13, 58:16, 58:17, 58:19, 58:25, 60:19, 61:2, 61:13, 61:17, 62:12, 63:5, 63:7, 64:4, 64:23, 65:2, 65:7 rao's 15:5, 18:5, 36:12, 36:17, 37:16, 58:21, 59:8, 63:8,	

record 7:16, 12:19, 29:11, 39:12, 39:14, 65:25, 68:8, 69:7 recording 5:10, 5:20 red 18:6, 64:6 refer 9:2, 18:12 reference 9:14, 9:15, 11:22, 11:23, 19:19, 24:15, 65:8 referenced 62:8 references 11:12, 17:23 referencing 24:18 referred 55:19 referring 21:2, 22:13, 33:15, 34:25, 41:4, 51:14, 58:2, 60:15 refinement 15:23 refining 50:25 refreshing 50:8 regarding 61:2 registered 2:26, 68:1 regulates 22:20 regulating 16:8 related 36:12, 63:11, 68:17 relation 58:11	relevant 22:15 relying 34:12, 34:17, 41:5 remainder 13:18, 41:23 remember 5:8, 5:12 remote 55:6, 56:2, 56:5, 56:8, 56:12, 56:15, 58:6, 61:23, 63:8, 63:23 remotely 1:21, 2:23, 5:6 renders 14:3 report 65:12 reported 1:21, 1:27, 2:24 reporter 2:25, 2:26, 2:27, 5:15, 5:24, 6:2, 11:20, 66:2, 66:7, 66:11, 66:14, 68:2, 68:3 represent 7:13 represented 68:11 requested 27:2, 27:11 require 54:8, 54:16 required 48:5, 54:12 requires 22:1, 52:9, 54:6 research 1:10, 2:10, 3:14, 69:3	resource 30:25 resources 16:9, 17:9, 17:10, 19:6, 19:14, 20:16, 22:21, 23:5, 23:8, 23:14, 23:17, 23:25, 25:18, 26:8, 26:19, 27:17, 28:25, 29:3, 29:4, 29:5, 29:7, 29:8, 29:15, 29:19, 29:24, 30:2, 30:8, 30:14, 30:21, 31:3, 32:15, 33:5, 34:15, 34:22, 35:2, 35:10, 35:13, 35:17, 35:19, 35:22, 36:5, 40:10, 40:16, 42:8, 42:19, 43:2, 43:9, 43:19, 43:24, 44:7, 44:10, 44:15 respect 19:6 rest 65:22 result 30:6 resulting 16:6, 17:13 returning 30:15, 31:4 review 8:24, 21:11, 24:25, 43:5 reviewing 24:24 richardson 3:5 right 5:25, 13:24, 18:10, 19:15, 22:6, 24:20, 26:21, 27:13, 33:13, 36:14, 38:25, 44:16, 46:8, 47:6, 47:18, 48:8, 52:25, 54:10, 55:15, 62:3, 62:8, 62:9, 63:25 romano 1:28, 2:25, 68:1, 68:27 room 43:10 rough 66:4, 66:11, 66:12, 66:13 rpr 1:28, 68:27 rules 8:7 run 5:7, 10:17, 23:13, 24:9, 27:1, 27:10, 32:23 running 19:12, 20:17, 23:2, 23:12, 23:22, 24:2, 24:6, 25:17, 26:18, 27:3, 27:8, 27:11, 27:17, 28:15, 29:6, 29:8, 29:21, 30:21, 31:13, 31:15, 32:10, 32:14, 33:3, 36:4, 36:7, 40:9, 41:3, 41:6, 41:9, 41:17, 42:7, 42:18, 43:1, 43:19, 44:1, 44:14, 45:7, 45:21,
---	--	--

46:4, 46:11, 47:9, 47:12, 47:17, 47:21, 47:24, 48:3, 48:4, 48:10, 48:13, 48:23, 49:1, 49:9, 49:13, 49:20, 51:21, 52:10, 53:14, 53:19, 54:8, 63:12 runs 22:22 russ 3:15, 7:13 S same 10:3, 11:8, 27:1 samsung 1:5, 2:5, 3:4, 69:2 satisfy 35:6, 36:2, 37:11, 37:12, 50:11 saw 43:20 say 13:5, 15:7, 28:22, 31:1, 33:7, 34:24, 35:19, 36:17, 42:22, 44:8, 63:3 saying 8:13, 11:13, 20:15, 25:22, 37:1, 53:2, 62:12, 63:8 says 14:12, 14:13, 14:22, 15:18, 17:6, 19:10, 20:12, 22:19, 23:1, 23:11, 25:13, 25:21,	26:4, 26:6, 26:24, 28:4, 31:5, 31:14, 32:3, 32:8, 32:9, 32:22, 33:1, 33:6, 33:8, 33:14, 40:4, 40:14, 41:15, 42:2, 42:12, 44:23, 45:5, 45:10, 45:15, 47:3, 55:18 scheduler 18:10, 18:16, 18:19, 22:20, 25:15, 25:24, 26:16 science 7:23 scope 52:18 second 11:16, 11:17, 11:22, 17:7, 31:21, 31:25, 32:3, 36:24, 42:3, 50:24 second-to-last 14:21 section 10:12, 10:18, 10:19, 12:11, 14:2, 16:6, 20:23, 39:22, 40:1, 42:24, 44:2, 58:24 see 10:15, 12:10, 13:1, 14:12, 14:18, 16:10, 17:2, 20:13, 22:24, 25:11, 26:5, 27:4, 31:17, 32:18, 35:3, 36:9, 36:18, 36:21, 39:25, 40:11,	40:21, 41:11, 41:19, 42:10, 44:16, 44:23, 45:2, 45:23, 52:1, 56:19, 59:13, 62:7, 62:17, 63:17, 64:3 seeing 60:5, 60:20, 60:22 seeking 15:8 seems 43:9, 43:23 sees 60:9 selectively 21:18, 22:1, 33:24, 35:9, 35:12, 35:16, 37:21, 45:19, 46:1, 46:9, 47:3, 47:7, 47:10, 47:14, 47:19, 47:22, 48:9, 48:11, 48:22, 48:25 send 25:14, 25:21 sending 59:21, 59:24, 60:5, 60:6, 60:10 sends 25:23, 26:15 sense 26:2, 62:18 sent 62:1 sentence 14:13, 14:21, 17:7, 19:10, 22:19, 22:24, 23:1, 25:10, 25:21, 26:10, 26:14, 26:20, 26:24, 27:4,	30:15, 31:5, 31:24, 31:25, 32:9, 34:25, 41:14, 44:9, 45:3, 45:5, 45:10, 45:15, 45:23 sentences 14:20 server 18:8, 18:15, 18:18, 25:6, 25:22, 28:13 service 19:13, 45:11, 45:16 services 17:10, 23:4, 23:14, 23:25, 25:18, 26:7, 26:19, 28:25, 29:14, 29:24, 30:2, 33:4, 34:14, 35:2, 35:18, 35:22, 36:5, 40:17, 43:9 set 68:5 shall 6:4 sheet 69:1, 70:1 short 28:12 shorthand 2:25, 68:2 should 5:11, 13:6, 32:12 showing 64:6 shown 11:7, 18:8, 18:10, 18:25 shut 41:1 signal 25:15, 25:22,
---	---	---	---

25:23, 26:16 signature-5tmlq 68:25 similar 22:19, 46:19 similarly 15:1 simply 27:23, 31:12, 52:11 sitting 43:7, 44:16 situation 41:8 six 11:17, 11:18 skill 13:8 slowly 5:8 smoothly 5:7 socket 59:2, 60:15, 62:2, 62:4 solemnly 6:2 solutions 15:4, 15:8 some 9:16, 14:10, 29:10, 30:24, 38:14, 38:15, 38:23, 38:24, 39:10, 49:21, 51:10 something 13:2, 31:11, 31:17, 50:19, 51:1, 51:20, 52:23, 53:4, 53:13, 53:19, 61:19 something's 54:13 somewhere 12:6 soon 39:10	sorry 16:15, 31:9, 57:4 sort 8:7 sound 8:14 source 62:13 south 3:8 speak 5:8 speaking 5:15, 5:18 special 12:22 specific 50:18, 51:14, 53:6, 53:8, 58:22, 59:9, 59:10 specifically 15:15, 21:9, 34:11 specification 13:16, 13:17, 28:12, 55:18 specify 58:8 specifying 63:9 speculation 52:16 spelled 11:23 st 68:24 stack 59:1, 59:15 stand 11:10 standard 66:5 standing 66:7 state 6:3, 7:15,	16:12, 20:6, 45:7, 45:22, 46:4, 46:12, 46:16, 47:9, 47:17, 47:22, 48:3, 48:24, 49:4, 49:5, 49:8, 49:9, 49:12, 49:20, 51:2, 51:5, 51:11, 51:14, 52:11, 52:21, 53:5, 53:19, 54:8, 54:14, 65:4, 65:9 statement 29:2, 49:10 states 1:1, 2:1, 4:10, 4:16, 4:21, 14:23, 15:1, 15:17, 16:3, 16:24 stenographic 12:19, 29:11 stenographically 1:27 still 30:21, 39:18 stop 27:3, 27:11, 41:8 stopping 43:25, 44:3 stops 31:21 street 3:8 strike 37:15, 60:8 stuff 56:14 subject 70:22 submitted 8:18, 9:12, 10:6 subpart 21:16, 22:10	subscribed 68:23 substance 9:17 suite 3:9 summarizes 10:19 summary 10:12, 40:1, 42:23, 43:17, 43:20 supplemented 19:20 support 9:12 sure 9:6, 11:20, 12:5, 13:1, 13:3, 17:16, 17:17, 25:3, 28:21, 54:24, 55:13, 62:21, 62:24 suspended 41:18 sworn 68:6 system 17:9, 17:19, 18:22, 20:2, 20:16, 29:4, 30:14, 32:15, 40:10, 40:16, 42:8, 42:13, 42:14, 42:18, 43:1, 43:8, 43:19, 43:24, 44:7, 44:10, 44:14, 55:3, 57:14, 57:19, 58:12, 58:13, 58:14 systems 32:6 T take 8:8, 12:3,
--	--	---	--

18:14, 24:11, 24:25, 32:7, 34:19, 35:9, 35:13, 39:9, 39:12, 43:13, 44:22, 46:22, 58:4, 61:16, 62:19 taken 2:21, 39:13, 68:8 taking 26:23, 64:9 talk 5:9, 17:3, 43:25 talking 41:23, 43:8, 43:23, 44:9, 46:6, 46:7, 51:9, 55:5, 58:3 talks 17:5 teaches 40:25, 64:23 teaching 27:6 teachings 36:12 technical-related 5:22 technician 3:25, 5:5 techniques 14:24, 15:6, 16:4, 17:8 tell 41:8 ten 43:8, 44:9 terms 13:5, 13:13, 43:21 testified 7:3 testimony 6:3, 67:4, 68:9 text 21:17	th 3:19, 8:4, 10:6 thank 5:5, 5:23, 39:17, 65:18, 65:19, 65:20, 66:14 theory 14:6 therefore 8:6, 15:4, 23:5 things 52:18 think 8:4, 11:15, 11:16, 12:21, 12:23, 28:2, 30:15, 50:25, 52:19, 54:21, 57:21, 57:22, 65:23, 66:5 third 41:16, 42:13 thought 61:19 three 10:19 through 8:23, 10:18, 21:24, 36:14, 40:2, 43:14, 45:12, 45:17, 55:19, 55:20, 63:11, 65:2 throughout 17:20, 34:4 time 5:17, 30:22, 39:6, 45:16 times 8:3 titled 12:12, 40:1 today 7:24, 8:7, 8:17, 8:22, 8:25, 9:7, 9:24, 43:7	top 12:24, 56:23 toward 41:12, 47:5 towards 59:15 tracking 8:12 trademark 1:1, 2:1 traffic 34:5, 35:24, 38:9, 45:18, 59:15, 59:21, 59:22, 59:25, 60:6, 60:7, 60:10, 63:5 transcript 5:21, 67:3, 69:9, 70:23, 70:25 transmission 14:15 transmitter 30:20 treated 43:22 trial 1:3, 2:3 true 27:24, 48:21, 50:3, 50:11, 55:22, 67:5, 68:8, 70:23, 70:25 trust 40:18 trusted 18:23, 19:3, 26:25, 27:9, 27:12, 41:24 trustworthiness 40:20 truth 6:5, 6:6 truthful 27:24 try 37:15	trying 55:2 turn 13:21 two 11:11, 17:23, 29:10, 32:6, 48:8, 57:1, 57:5 types 16:7 U unable 5:16 unclear 50:6 under 6:3, 20:8, 67:2 understand 7:18, 8:10, 17:16, 28:21, 55:2, 59:5 understanding 10:23, 15:14, 18:13, 22:6, 43:16, 45:25, 47:2 understood 13:8, 14:25, 23:6, 23:15, 34:20 unedited 5:19 unique 59:25, 60:7, 60:10, 60:11 united 1:1, 2:1, 4:10, 4:16, 4:21 university 7:23 unnecessary 32:16 untrusted 18:24, 19:12, 19:25, 20:3, 20:9, 20:17, 22:21, 23:2,
--	---	---	---

23:11, 23:21, 24:6, 25:13, 25:16, 26:15, 26:17, 27:7, 27:15, 27:21, 28:6, 28:19, 28:23, 29:13, 29:18, 29:25, 30:1, 30:7, 30:13, 30:16, 31:2, 31:7, 32:1, 32:10, 32:12, 32:17, 32:22, 33:2, 33:10, 40:8, 41:1, 41:15, 42:5, 42:6, 42:15, 42:17, 42:25, 43:17, 43:22, 44:13 unwanted 58:7 usage 15:2 use 9:4, 15:16, 15:23, 17:23, 28:5, 30:1, 30:2, 30:8, 33:9, 33:14, 34:9, 45:18, 50:18, 54:2, 54:5, 54:9, 60:2 user 49:24, 54:2, 54:5 uses 34:10 using 9:3, 14:23, 16:3, 16:12, 16:23, 30:17, 31:11	various 16:7 verona 1:22, 2:22, 5:1, 7:25 versus 56:23 via 1:21, 2:24, 3:2, 5:16, 21:3 video 2:24, 5:14, 5:16 videoconference 1:21, 2:24, 3:2 view 14:2, 37:12 virtually 68:14 volume 1:24, 4:4 voluntarily 41:5 vs 69:2	ways 11:18, 52:18, 52:22, 53:9, 53:15 we'll 8:7, 9:2, 9:4 we're 9:7, 10:3 we've 39:8 web 1:21, 2:24, 3:2 week 66:8 weekend 65:22 welcome 39:15 whatever 8:8, 66:5 whereas 53:12 wherein 47:6, 47:7, 47:9, 47:19, 47:22 whereof 68:23 whether 22:22, 45:21, 46:3, 46:11, 47:16, 48:2, 51:13, 52:11, 52:21, 52:23, 54:1, 54:4, 54:13, 64:21, 65:7 whole 6:5 wide-area 44:24 wiggling 43:10 wilshire 3:18 window 18:8, 18:15, 18:18, 25:6,	25:22, 28:13 wireless 28:7, 31:8, 33:11, 44:24, 44:25 wisconsin 1:22, 2:22, 5:1, 7:25, 8:1 without 52:3, 54:4 witness 65:15, 65:17, 68:4, 68:9, 68:23 wlan 45:1 wonder 39:9 wondering 43:20 word 34:9, 34:10 work 41:10 worked 61:12 works 61:10 wrapped 54:22 written 14:5, 18:11, 18:17, 22:25, 35:4, 39:22 wrong 11:19 wwam 45:17, 47:5 wwan 21:5, 21:20, 23:8, 23:17, 33:25, 34:16, 35:7, 36:3, 37:3, 37:9, 37:11, 37:19, 37:22, 38:5, 38:8, 38:10, 38:18, 38:22,
v	W		
vague 53:23 validity 11:7	waiting 30:21 want 39:9, 66:12 wanted 9:7, 10:17, 11:20, 13:1, 13:20, 14:10, 21:6, 24:11, 39:21, 62:22 washington 1:32 way 11:13, 27:1, 35:15, 46:22, 50:13, 50:14, 50:18, 53:2, 53:3, 53:6, 53:8, 53:12, 53:21, 62:16, 68:21		

44:25	10	12546	1e
x	14:3, 40:14,	1:29, 68:28	21:3, 21:7,
xi	43:23, 66:1,	13	21:16, 62:22
14:2	68:15	14:3	2
y	100	1336	2
yeah	22:7	8:19, 9:4	50:20, 53:22
12:9, 12:25,	1001	14	20
16:20, 21:2,	4:10, 9:9,	1:23, 2:23,	1:31, 14:4
21:22, 22:17,	44:19	5:1, 14:3,	200
28:12, 32:2,	1003	40:25, 68:15	10:1, 10:2
37:7, 39:11,	4:13, 9:11,	15	2006
43:12, 45:4,	9:18	41:13, 41:14,	4:18
48:18, 49:3,	1005	41:20, 41:23	2007
50:9, 51:19,	4:16, 9:13,	16	4:23
52:17, 55:10,	61:17	14:3, 41:13,	2023
56:17, 58:1,	1006	42:2	1:14, 2:14,
60:12, 63:1,	4:21, 9:13,	17	8:19, 9:4, 10:6
66:10	24:13, 39:20	40:2, 41:13,	2024
yellow	101	42:12, 43:14,	1:23, 2:23,
64:14	8:23, 22:7	44:11	5:1, 67:8,
yourself	102	182	68:15, 68:24,
5:17	22:7, 36:14,	63:14	69:5
yup	36:22, 37:5,	183	207
40:13, 46:24	37:6, 55:18,	63:14	63:15
z	55:19, 65:2	187	21
zoom	103	61:20, 61:22,	32:7, 32:19,
1:20	20:21, 21:9,	62:9, 62:12,	32:21, 33:16,
0	21:15, 21:24,	63:14	68:24, 69:5
0024	22:9, 22:14,	189	22
31:5	22:18, 26:4,	63:14	33:16
0038763	26:5, 33:21,	19	23
4:23	34:2, 34:8,	14:4	24:20, 24:23,
0039354	34:11, 35:20	193	25:1, 25:5,
4:18	1035	63:14	26:11, 26:24,
01336	8:23	194	28:1, 28:3,
1:14, 2:14	105	63:15	28:11, 28:12,
02	55:8, 55:14,	1a	28:18, 28:22,
2:23, 5:2,	55:19, 55:20	10:24, 11:6,	33:1, 33:5,
68:15	108	11:9, 11:12,	33:16, 33:24,
0466	63:17	11:23, 12:2,	34:12, 34:18
1:31	109	13:23, 14:2,	24
1	63:18	14:6, 14:9,	2:23, 24:20,
1-4	12	55:6, 55:9	25:1, 27:19,
14:3	3:19	1b	27:25, 28:9,
	120	11:8	28:16, 29:9,
	56:8, 63:9	1c	30:16, 31:23,
	12424	11:8	33:7, 34:18,
	3:18	1d	
		64:4	

34:23, 44:5 25 10:6, 14:4, 24:20, 25:1, 34:18 3 310 3:21 3200 3:9 322 58:3, 58:7, 64:7 326 18:5, 19:24, 56:12 335 3:11 338 18:23, 63:11, 63:12 34 12:9 3491 1:32 35 12:8, 12:9, 55:3 36 55:9 365 56:19, 56:22, 56:24 38 8:4 39 55:23 4 45 12:7, 12:20, 13:4, 13:11 5 5-day 66:8 5070 3:11	52 13:22, 14:1, 57:23, 57:25, 58:5 53 19:10 54 19:18 541861 1:33, 69:6 55402 3:10 58 66:1, 68:15 5a 19:19, 56:6, 56:7, 61:13, 64:4 6 60 3:8 612 3:11 63 20:25 6th 3:8 7 70 1:34 701 12:12, 12:16, 12:18, 13:14, 44:19 72 14:12, 14:13 73 15:18, 16:6, 17:3, 17:5, 17:7, 21:10 74 17:15, 17:18, 18:2, 18:11, 18:17 7474 3:21	8 826 3:21 827 1:30 86 55:17 9 9 2:23, 5:2, 68:15 9,137,701 1:15, 2:15, 4:11, 9:9 90025 3:20 91 46:23 97 63:3, 63:6 98 21:18, 21:24, 22:7, 36:13, 63:1, 64:2, 65:2 99 22:7, 36:16	
---	---	--	--