

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

ERICSSON AB,
Patent Owner.

Case No. IPR2025-00003

Patent No. 9,313,178

- and -

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

GOOGLE LLC,
Petitioner,

v.

ERICSSON AB,
Patent Owner.

Case No. IPR2025-00004

Patent No. 11,122,313

DEPOSITION OF PATENT OWNER'S EXPERT,

JOHN VILLASENOR, Ph.D.

August 21, 2025 at 9:00 a.m.

Reported by:

Anne E. Vosburgh, CSR-6804, RPR, CRR, CR-25001522

Job No. 1384145

-oOo-

On August 21, 2025, commencing at approximately 9:00 a.m., the remote videoconference deposition of EXPERT WITNESS, JOHN VILLASENOR, PH.D., was held before and stenographically reported by Anne E. Vosburgh, Certified Shorthand Reporter No. 6804, Registered Professional Reporter, Certified Realtime Reporter, Certified Reporter No. 25001522, Notary Public, LiveNote Reporter.

All attorneys participating in this deposition acknowledge and agree not to object to the use of this transcript on the basis that the reporter is not physically present in the deposition room and will be reporting remotely, and that in lieu of an official oath administered in person, by swearing remotely, the Witness verbally declares their testimony in this matter under penalty of perjury.

1 APPEARANCES (REMOTE):

2

3 ON BEHALF OF PETITIONER, GOOGLE:

4 WOLF, GREENFIELD & SACKS, P.C.

5 600 Atlantic Avenue

6 Boston, MA 02210

7 (617) 646-8000

8 BY: TURHAN F. SARWAR, ESQ.

9 turhan.sarwar@wolfgreenfield.com

10 BY: SURESH RAV, ESQ.

11 suresh.rav@wolfgreenfield.com

12 BY: LIBBIE A. DIMARCO, ESQ.

13 elizabeth.diMarco@wolfgreenfield.com

14

15 ON BEHALF OF THE PATENT OWNER, ERICSSON:

16 NOROOZI PC

17 11601 Wilshire Blvd, Suite 2170

18 Los Angeles, CA 90025

19 (310) 975-7074

20 BY: KAYVAN B. NOROOZI, ESQ.

21 kayvan@noroozipc.com

22 BY: PETER C. KNOPS

23 peter@noroozipc.com

24

25

I N D E X

----- EXAMINATIONS -----

Examination by Mr. Sarwar	6
Examination by Mr. Noroozi	151

----- MARKED EXHIBITS -----

NUMBER	DESCRIPTION	PAGE
Exhibit 1001	(IPR2025-00003) US Patent Number 9,313,178	12
Exhibit 1001	(IPR2025-00004) US Patent Number 11,122,313	16
Exhibit 1005	Peterka, Patent Application Publication Number 2002/0172368	55

1 EXHIBITS (Continued):

2

3 Exhibit 1006 Patent Application 143

4 Publication Number

5 2004-166153, English

6 translation and Japanese

7 Exhibit 2010 (IPR2025-00003) Declaration 17

8 of John Villasenor re:

9 Patent No. 9,313,178

10 Exhibit 2010 (IPR2025-00004) Declaration 45

11 of John Villesenor re:

12 Patent No. 11,122,313

13

14

15

16

17

18

19

20

21

22

23

24

25

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

PROCEEDINGS

REMOTE VIDEOCONFERENCE DEPOSITION OF
JOHN VILLASENOR, PH.D.

August 21, 2025, 9:00 a.m.

-oOo-

JOHN VILLASENOR, PH.D.,
(Having been called to testify via
videoconference, pursuant to agreement
of Counsel, was sworn remotely and
agreed to tell the truth, the whole
truth, and nothing but the truth.)

THE REPORTER: Thank you.
Counsel, you may proceed.

MR. SARWAR: I'm Turhan Sarwar, here on
behalf of petitioner Google.

MR. NOROOZI: I'm Kayvan Noroozi for
patent owner Ericsson.

MR. KNOPS: And I'm Peter Knops on behalf
of patent owner Ericsson.

EXAMINATION

1 BY MR. SARWAR:

2 Q. Hello, Dr. Villasenor.

3 Am I pronouncing that correctly?

4 A. Good enough.

5 Q. All right. Thank you.

6 Okay. Have you ever been deposed
7 before?

8 A. Yes.

9 Q. About how many times?

10 A. I don't know, but it's many dozens,
11 I'm sure.

12 Q. Is there anything preventing you from
13 giving your best testimony today?

14 A. No, there's not.

15 Q. You've done many depositions, so this
16 will all probably sound pretty old. But I'm going
17 to provide a few ground rules for today.

18 I'll ask you questions. You'll
19 provide verbal answers so that the court reporter
20 can record the answers.

21 Patent owner's attorney might object
22 to my question, but you still have to answer the
23 question unless you are specifically instructed by
24 patent owner's attorney not to answer.

25 A. Well, if I may, I think there are

1 other conditions under which I would not answer,
2 for example, if you asked me to reveal confidential
3 information which I'm not allowed to reveal, for
4 example.

5 Q. Understood. We can discuss that if
6 that ends up coming up.

7 For breaks, I'm planning on taking a
8 break every hour or so. If you need to take a
9 break before that, let me know.

10 And, you know, before we start any
11 break, you should finish providing your answer to
12 any pending question, you know, for the record.

13 All right. Do you understand all
14 that?

15 A. Yes.

16 Q. Okay. Since we're conducting this
17 deposition remotely, I will ask: Do you have any
18 materials or notes with you in the room where
19 you're taking this deposition?

20 A. I don't have any physical notes, but
21 I'm using my laptop computer and that's where I
22 have -- and that's just my regular laptop computer
23 where I've got, you know, student grades and, you
24 know, everything else.

25 But right now I'm just looking at a

1 Zoom screen.

2 Q. I understand.

3 I'll occasionally be dropping
4 documents into the Zoom chat window so that you can
5 download them and review and we can discuss them.

6 Do you understand that?

7 A. Yes.

8 Q. All right. And if you're consulting
9 anything other than the documents I provide you,
10 will you let me know?

11 A. Yeah. I mean, I assume I have the
12 right to consult, you know, the patent, if you
13 haven't given me the patent, that sort of thing.

14 Q. If we encounter that sort of
15 situation, if you will just ask me to provide it, I
16 will, and then you can take a look at it that way.

17 A. I have with me, for example,
18 obviously, the petition, my declaration, the
19 patents. But you don't want me to use any of that;
20 you just want me to use the documents that you're
21 going to put on the exhibit list.

22 Is that what I'm understanding?

23 Q. That's right.

24 And if you end up needing to reference
25 something or if you happen to be referencing

1 something that I haven't provided you, just let us
2 know.

3 A. Okay.

4 Q. Sound good? All right.

5 How did you prepare for this
6 deposition?

7 A. Well, I mean, I guess I would say that
8 the preparation would include the work I've done on
9 this matter. So -- and obviously, there were some
10 discussions in recent days.

11 But the act of preparing the
12 declarations and then doing the work leading up to
13 that, I would think, all sort of -- and then more
14 generally, just being someone working in the field
15 for many years, that also constitutes preparation
16 in the broader sense.

17 Q. Okay. So let's narrow it down to
18 after you finish your declaration and it was
19 submitted.

20 About how much time would you say you
21 spent preparing for the deposition?

22 A. Well, first of all, you said "your
23 declaration" singular, but there were two
24 declarations.

25 So I assume that you're referring to

1 both of them; is that correct?

2 Q. That's correct.

3 A. Yeah. And then, you know, I don't in
4 my head have a specific number, but I've had
5 multiple conversations in, you know, recent -- in
6 the last week or so with counsel, and have also
7 spent some time reviewing on my own, but I don't
8 have a specific number in my head.

9 Q. What materials did you review?

10 A. Well, I reviewed the materials
11 relevant to the declaration for -- that's the first
12 thing that comes to mind. So, of course, the
13 patents and the petition and the declaration and
14 some of the art that was -- some of the art that
15 was cited.

16 And I'm trying to think. There may be
17 other things. But just as far as I remember, just
18 the documents that are in the record that I've
19 already -- you know, that have already been cited
20 is what I remember.

21 Q. All right.

22 Did you review any materials or
23 documents that were not submitted as papers or
24 exhibits in these two proceedings?

25 A. Not that comes to mind. I mean, the

1 only thing I'll say is I don't know if -- for
2 example, I think I viewed the declaration -- I'm
3 sorry, the deposition transcript of the -- Google's
4 expert.

5 And I don't recall right now whether
6 that is included or not within the papers that you
7 just referenced. So if that's not, then that would
8 be one other thing.

9 But other than that, nothing comes to
10 mind.

11 Q. And did you conduct any research
12 outside of the documents, you know, the papers and
13 the exhibits that were submitted in these two
14 proceedings?

15 A. Are you asking in the last week, when
16 preparing for this deposition, did I do any
17 research outside those?

18 Q. Yes, that's correct.

19 A. Not that I recall.

20 Q. Okay. All right. I'm going to be
21 dropping into the window Exhibit 1001 from IPR
22 2025-00003.

23 (US Patent Number 9,313,178, marked as
24 Exhibit 1001 from IPR 2025-00003.)

25

1 BY MR. SARWAR:

2 Q. Let me know when you've downloaded
3 that.

4 A. I don't know where I'm supposed to
5 see -- oh, this is in the chat?

6 Q. Yes.

7 A. I see.

8 So I just click download. Let me make
9 sure it actually did download.

10 MR. NOROOZI: I just want to clarify for
11 the witness that the witness is free to look at his
12 declarations at any point to address the questions.
13 I don't think there's any limitation on that.

14 Is there any disagreement about that?

15 MR. SARWAR: We can address that if that
16 ends up coming up.

17 THE WITNESS: Well, obviously, if I may,
18 I mean, since the deposition is on my opinions off
19 of the declaration, I would like to respectfully
20 request that the declarations, both of them, be
21 marked as exhibits and dropped -- or I can just
22 open my own copies, but I do believe I should have
23 the right to refer to them.

24 BY MR. SARWAR:

25 Q. Sure. I just -- you should let the

1 record know -- you should let us know whatever
2 you're reviewing, which we -- which I haven't given
3 you.

4 And for the purposes of sort of
5 establishing shorthand and, you know, coming up
6 with a common language for us to be able to speak
7 about these matters, I will be providing you the
8 patents, your declarations. So I don't think this
9 is something that we need to worry about.

10 A. Well, perhaps to make it easier, you
11 can do that right now and that way I can just open
12 the versions that you provide me.

13 Q. How about we start with the questions
14 I have for you.

15 A. Okay. But I respectfully would
16 reserve the right to refer to my declaration if I
17 believe that's appropriate in answering the
18 question.

19 Q. Understood. Just let us know if
20 you're doing that.

21 A. Okay.

22 Q. All right. Exhibit 1001 from IPR
23 2025-00003.

24 Do you have it in front of you?

25 A. I do, yeah.

1 Q. All right.

2 This is US Patent Number 9,313,178,
3 correct?

4 A. That's what it appears to be, yeah.

5 Q. Will you understand me if I refer to
6 this patent as the '178 patent?

7 A. Yes, I will.

8 Q. All right.

9 And you reviewed the '178 patent,
10 correct?

11 A. That's correct.

12 Q. Will you understand me if I refer to
13 the proceeding in which the '178 patent was
14 challenged as the IPR 2025-3 proceeding?

15 A. Sure. I mean, I might get it flipped
16 every once in a while, so it's probably easier if
17 we refer to it as the "'178 IPR," if that's not too
18 much to ask.

19 Q. All right. I will try to do that, if
20 that's your preference. Apologies if I'm
21 automatically going to the IPR number for purposes
22 of the record. But if there's any confusion, we
23 can clarify it on the record and that way we'll be
24 good.

25 All right. So now I'm showing you

1 Exhibit 1001 from IPR 2025-00004.

2 (US Patent Number 11,122,313, marked
3 as Exhibit 1001 from IPR 2025-00003.)

4 BY MR. SARWAR:

5 Q. Can you download that, please?

6 A. Okay. I've just opened it.

7 Q. All right.

8 This is US Patent Number 11,122,313,
9 correct?

10 A. That's what it appears to be, yes.

11 Q. Will you understand me if I refer to
12 this patent as the '313 patent?

13 A. Yes.

14 Q. And you've reviewed the '313 patent,
15 correct?

16 A. Yes.

17 Q. Will you understand me if I refer to
18 the proceeding in which the '313 patent was
19 challenged as the IPR 2025-4 proceeding?

20 A. Again, my preference would be to call
21 it the '313 IPR because I think that's a clearer
22 reference for me, but I can try.

23 Q. Understood. Thank you.

24 The '178 and '313 patents share a
25 common specification, right?

1 A. Yes.

2 Q. I'm now providing Exhibit 2010 from
3 the '178 IPR.

4 (From IPR2025-00003, Declaration of
5 John Villasenor re: Patent No.
6 9,313,178, marked as Exhibit 2010.)

7 A. Okay. I have it.

8 BY MR. SARWAR:

9 Q. All right.

10 This is the declaration you prepared
11 for the IPR proceeding that challenges the '178
12 patent, correct?

13 A. It appears to be.

14 Q. Did you write this declaration?

15 A. Well, I wrote it or parts of it were
16 written at my direction by counsel, but the whole
17 thing is my opinion.

18 Q. What documents did you rely upon to
19 prepare this declaration?

20 A. Well, I believe I -- certainly I cited
21 multiple documents, and I believe that the
22 documents that I cited, I mean, they're listed.
23 They're referenced in the declaration.

24 Q. When preparing the declaration, did
25 you review any documents or materials that you did

1 not cite in your declaration?

2 A. I don't specifically recall. I may
3 have but, you know, if I reviewed something and
4 decided it wasn't something that I was going to
5 address in my opinion, then I may not have cited
6 it.

7 Q. So the documents that are cited and
8 listed in the declaration are a comprehensive list
9 of documents you relied upon?

10 A. I mean, I'm not sure what you mean by
11 that. I think the -- I think the -- where
12 appropriate, I cited various documents. I quoted
13 from them or otherwise discussed them and that's
14 why they're referenced in the declaration.

15 But I'm not quite sure what you mean
16 by "comprehensive."

17 Q. Well, for your opinions, are you
18 relying on any document that you did not cite?

19 A. Not that explicitly comes to mind.
20 But, again, my opinions are based, among other
21 things, on my experience over, you know, a third of
22 a century working in this area.

23 So obviously, that experience and the
24 knowledge I have from it is gained in significant
25 part from, you know, presumably many thousands of

1 documents.

2 But the fact that I didn't cite those
3 doesn't mean I don't rely on the expertise that I
4 have from having seen them in the past.

5 Q. Understood.

6 Can you turn to paragraph 12 of your
7 declaration.

8 A. Yes.

9 Q. All right. Do you see where you
10 reference your standard rate?

11 A. Yes.

12 Q. What is your standard rate?

13 A. \$1,000.

14 Q. Can you turn to paragraph 19, please.

15 A. Yes.

16 Q. Do you see the sentence starting "I do
17 not dispute"?

18 A. Yes.

19 Q. And that sentence ends with "in view
20 of that further calculation," correct?

21 A. I see the end of the sentence, yes.

22 Q. All right.

23 What is your clarification here?

24 A. Well, I have a "but" here in that
25 sentence. I say "but I note that obviousness must

1 be viewed from the perspective of one of ordinary
2 skill in the art in the field of information
3 security."

4 And my opinions -- just basically
5 clarifying that this is, you know, an aspect of
6 what I understand the person of ordinary skill in
7 the art would -- the perspective of a person of
8 ordinary skill in the art.

9 Q. Is there anything different about your
10 clarification from the definition of a person of
11 ordinary skill in the art that the parties are
12 using?

13 A. Well, potentially, I guess it depends
14 on how somebody might read the definition of
15 "ordinary skill in the art," but it's just a
16 further point that -- to the statement of how I
17 believe obviousness must be viewed.

18 And so to the extent that somebody
19 reading or interpreting the definition earlier in
20 that paragraph would somehow have a different -- if
21 they were to have a different view, for example, of
22 obviousness, well, then that would be a difference.

23 I'm not saying there's evidence that
24 they do have a different view, but I'm just making
25 that clarification.

1 Q. The perspective you describe, though,
2 in that sentence is not different from the
3 definition of POSA, or person of ordinary skill in
4 the art, is it?

5 A. Well, again, I can't -- in my --
6 I can't know all the different ways -- I mean, if
7 you give this to -- this definition to, you know, a
8 hundred different people and ask them to sort of
9 comment on it, interpret it, perhaps there might be
10 some variation there.

11 So I'm simply stating an additional
12 fact that I think is contextually important for a
13 person of ordinary skill in the art.

14 Q. Okay. And what's that additional
15 fact?

16 A. Well, just that obviousness must, as I
17 said, be viewed from the perspective of one of
18 ordinary skill in this field.

19 Q. Okay. I think I understand.

20 Do you work in the field of -- sorry.

21 Are you a person of ordinary skill, in
22 view of your clarification?

23 A. I am, and I think just as importantly,
24 I have been since well before the priority date of
25 these patents.

1 Q. Do you work in the field of
2 information security using cryptographic keys for
3 encryption and decryption of digital data?

4 A. I do, among other things, yes.

5 Q. All right.

6 Let's turn to Exhibit A of your
7 declaration. That's the 72nd page of this
8 document.

9 A. Okay.

10 Q. Okay. It should say Exhibit A and
11 then page 1 of your CV.

12 A. Okay.

13 Q. Do you recognize this document?

14 A. I do.

15 Q. This is your CV, correct?

16 A. That's correct. It appears to be.
17 I'm looking at the first page.

18 Q. All right. If you -- can you leaf
19 through it just to make sure that this is, in fact,
20 your CV?

21 A. Again, it looks to be.

22 Q. Okay. On page 2 of your CV, it says
23 you have approximately 20 issued patents in the
24 areas -- sorry, "in areas including communications,
25 information processing, and cybersecurity," right?

1 A. That's correct.

2 Q. Do you know how many of those issued
3 patents are in the area of cybersecurity?

4 A. Off the top of my head, I don't
5 recall, no.

6 Q. Do you know how many of your issued
7 patents are in the field of information security
8 using cryptographic keys for encryption and
9 decryption of digital data?

10 A. I don't recall off the top of my head,
11 although I would add that the patents are not the
12 only reflection of the areas where I work. But I
13 don't recall off the top of my head.

14 Q. Do you know how many of your issued
15 patents discuss cryptographic keys?

16 A. Again, I don't recall off the top of
17 my head.

18 Q. Do you know how many of your issued
19 patents discuss encryption and decryption of
20 digital data?

21 A. Same answer. Again, it's been a long
22 time and I haven't memorized the content of the
23 patents.

24 Q. Are any of your papers in the field of
25 information security using cryptographic keys for

1 encryption and decryption of digital data?

2 A. Many of them do, in fact, address
3 systems where that is an important or core part of
4 the system.

5 Q. All right.

6 If you'll indulge me, I think you've
7 included a list of technical papers in your CV; is
8 that right?

9 A. Yes.

10 Q. Can you tell me which ones that are
11 listed here, you know, are in the field of
12 information security using cryptographic keys for
13 encryption and decryption of digital data?

14 A. How much time do you want to spend? I
15 mean, what I would do is I would ask you for -- I
16 could probably give you a few dozen of these, and I
17 would ask you to provide me the copies.

18 Are we prepared to do that?

19 Q. Are you able to look through the list
20 of papers in your CV and tell me which ones are in
21 this field or not?

22 A. Again, I -- this is a publication list
23 that literally spans, I guess, 40-something years,
24 so many, many thousands of pages. It's literally,
25 you know, not too far short of half a century.

1 So if you're going to ask me to opine
2 on the specific contents of -- or evaluate the
3 specific contents of the entire body of work here,
4 I'm going to ask you for an opportunity to actually
5 do that rather than to try to, you know, recite
6 from memory, you know, the contents of a paper
7 I might have published three decades ago.

8 I'm happy to engage in that process.
9 I can start now and start giving you a list. Do
10 you want me to do that? I can start -- so, for
11 example -- do you want me to start giving you --
12 I can probably give you a couple dozen of these and
13 you can provide them to me and I can look at them.
14 That's probably the best way to answer your
15 question.

16 Q. Why don't you start by providing me
17 the couple dozen.

18 A. Okay. I'll give you the numbers.
19 Number 3, Number 6, Number 7. Let's
20 see. Number 13 --

21 Do you want me to keep going?

22 Q. Yes, please.

23 A. And by the way, these are not papers
24 that I have any specific knowledge. These are
25 papers that I think are places I would look about

1 systems that might discuss these things.

2 Let's see. Number 15, Number 17,
3 Number 20, Number 21, Number 22, Number 25,
4 Number 27, Number 30, Number 33, Number 34,
5 Number 35, Number 40, Number 41, Number 42,
6 Number 43, Number 44, Number 45, Number 46,
7 Number 47, Number 48, Number 49, Number 51,
8 Number 52, Number 54, Number 55, Number 57,
9 Number 61, Number 62, Number 65, Number 66,
10 Number 93, Number 94, Number 100, Number 101,
11 Number 109, Number 110, Number 112, Number 117,
12 Number 120, Number 128, Number 129, Number 130,
13 Number 132, Number 133, 134, 135, 136, 142, 149,
14 152, 153, 158, 159, 160, 163, 165, 169, 170, 172,
15 174.

16 Those are the ones that come to mind
17 where I'm -- again, just so the record is clear,
18 those are the papers describing systems where I may
19 have addressed cryptography or cryptographic-based
20 issues or that the systems that were the subject of
21 those papers used those keys, even if those keys
22 and systems weren't described specifically in the
23 papers.

24 But, again, we're spanning, you know,
25 19- we're going back to early 1990s. I think

1 I misspoke if I said 40 years. Probably
2 30-something years, 35 years, so it's a long time
3 ago.

4 I don't remember what's in these
5 papers, but if you'd like to give me the time to go
6 through the papers I've just identified, then I'm
7 happy to provide some more information on the
8 papers and the systems that those papers were
9 related to.

10 Q. Thank you very much.

11 All right. So let's turn to
12 paragraph 31 of your declaration. And this starts
13 on page 11 and goes onto page 12.

14 A. I'm sorry, page 11?

15 Q. Yes.

16 A. Which -- are we talking about the '178
17 declaration or the '313 declaration?

18 Q. The '178 declaration.

19 A. Okay. I think in one of these
20 declarations, just so the record is clear, there's
21 a paragraph numbering issue where the numbering
22 kind of restarts in the middle.

23 So I'm just making that clear. So if
24 you can give me a page -- you said page 11,
25 I think.

1 Q. Yes. This numbering issue is actually
2 present in both of your declarations.

3 A. Yeah.

4 Q. We're in the '178 declaration right
5 now, paragraph 31, the one that starts on page 11
6 and goes onto page 12.

7 A. Okay. I'm there.

8 Q. All right.

9 You've reproduced the claim language
10 here, correct?

11 A. Some of the claims, yes.

12 Q. The claim language for Claim 1?

13 A. Yes.

14 Q. And you used the same claim element
15 designations that were used in the petition,
16 correct?

17 A. I think that was the goal. I hope
18 that was the goal for simplicity.

19 Q. It looked correct to me, but I'll
20 admit I have not checked completely thoroughly.

21 Limitation -- we'll use the
22 designations that are on this page here.

23 Limitation 1A recites:

24 "Initiating a media playback
25 request and receiving a playback

1 request response."

2 Correct?

3 A. Yes.

4 Q. Limitation 1A does not recite sending
5 the media playback request to any particular
6 location or entity, correct?

7 A. Well, I'm not sure what you mean by
8 that because it's -- it's -- and I think it's --
9 you have to -- the entity that initiates the
10 playback request is going to be the entity that
11 receives it, if that's what your question is. I'm
12 not --

13 Q. You're saying that the entity that
14 initiates the media playback request is the one
15 that receives the media playback request?

16 A. I mean, that's -- my understanding is
17 that's -- that, you know, this is -- for example, a
18 client can initiate a media playback request and
19 then receive a playback request response as an
20 example of how this claim element can be met.

21 Q. Okay. I'm asking you whether
22 Limitation 1A recites sending the media playback
23 request to any particular location or entity?

24 MR. NOROOZI: Objection, form.

25 A. Yeah. I don't recall that the

1 petition raised that issue at all.

2 BY MR. SARWAR:

3 Q. Limitation 1A does not --

4 A. I'm sorry. And to the extent that
5 you're suggesting that the initiation is done by a
6 different entity than the entity that receives a
7 playback request, again, I don't recall the
8 petition suggesting that as an interpretation.

9 Q. In your opinion, you list the -- this
10 Limitation 1A, correct?

11 A. I list the entire claim, which, of
12 course, includes the limitation.

13 Q. Right. So the entirety of Limitation
14 1A is here, right?

15 A. Yes, that's right.

16 Q. And the language for Limitation 1A --
17 I'm sorry.

18 The language here that's been
19 designated Limitation 1A says:

20 "Initiating a media playback
21 request and receiving a playback
22 request response."

23 Correct?

24 A. That's what it says, yes.

25 Q. Right. And my straightforward

1 question is: It's not reciting the media playback
2 request going to any particular entity or location,
3 correct?

4 A. I guess I'm not sure what your
5 question means.

6 I mean, it says you initiate a
7 playback -- a media playback request and you've got
8 to receive a playback response. I mean, so I'm not
9 sure -- I guess your question is a little bit
10 unclear to me.

11 If -- you know, something sends a
12 request for a media playback, and it receives a
13 response.

14 Q. Okay. So is the media playback
15 request the same thing as the playback request
16 response?

17 A. Well, no. There's a request and a
18 response. Those are different things, right?

19 A request is -- I'm not sure of your
20 question because it's clearly not -- a request is
21 different from a response.

22 Q. That's correct. So does Limitation 1A
23 recite sending the media playback request anywhere
24 in particular?

25 A. I'm not sure. It says "initiating a

1 media playback request." I mean, for example, it
2 doesn't say it has to be, you know, a particular
3 type of server.

4 I mean, you could send it to, you
5 know, one server -- you know, a server of a certain
6 category and meet the claim, or you could send it
7 to a server of a different category and still meet
8 the claim.

9 So it doesn't -- it doesn't limit, as
10 far as I'm aware, the specific type of server that
11 you send the media playback request to. But it's
12 limited -- it's inherently limited to some extent
13 in the sense that it has to be something that can,
14 you know, receive and respond to a media playback
15 request.

16 Q. Okay. Limitation 1A does not recite
17 specifically sending the media playback request to
18 a license server, correct?

19 A. It doesn't specifically say the word
20 "license server" here. But, again, it has to be --
21 it inherently has to have -- be sent to something
22 that can receive, understand, act on, and respond
23 to a media playback request.

24 Q. And you would agree with me that the
25 claim language here in Limitation 1A does not

1 require that the playback request be sent to any
2 particular location?

3 A. Again, it depends what you mean by
4 "location." I think -- it certainly is agnostic to
5 whether the server is in, you know, San Francisco
6 or Los Angeles. In that sense, it's agnostic.

7 But I do think there's a requirement
8 that, again, it has to be something that can
9 receive and understand what a media playback
10 request is and -- and then issue a response.

11 Q. Limitation 1A does not recite anything
12 specific that needs to be in the media playback
13 request, does it?

14 A. I'm sorry. The question again,
15 please?

16 Q. Limitation 1A does not recite anything
17 specific that needs to be in the media playback
18 request, does it?

19 A. I'd have to -- I mean, the words here
20 say "media playback request," but then there's --
21 you know, there may be -- and I may have addressed
22 elsewhere; there may be statements in the patent
23 about what must be in a media playback request.

24 So it has to be at least specific
25 enough to say -- you know, to be a media playback

1 request as opposed to a request for something else
2 that's not a media playback.

3 So, again, there's a -- there's a
4 constraint in that sense.

5 Q. Is there anything in the language of
6 Claim 1 that recites anything specific that needs
7 to be in the media playback request?

8 A. Well, I haven't looked at the whole
9 language of Claim 1 in the last two minutes here in
10 this set of questions. But it's -- again, it has
11 to be -- it's a media playback request.

12 It's not just a -- it's not just, you
13 know -- it doesn't say -- the claim language
14 doesn't say "initiating a request." It says
15 "initiating a media playback request."

16 And so that narrows the permissible
17 scope of what's in the request to being a media
18 playback request. And so that has to have -- you
19 know, there's certain attributes.

20 In other words, not all requests that
21 you can imagine being sent from, you know, a client
22 to a server, for example, would necessarily be
23 media playback requests.

24 Q. Does Limitation 1A recite anything
25 specific that needs to be in the request for it to

1 be a media playback request?

2 A. Well, I think it -- again, it has to
3 be -- it has to be a request to play back media,
4 right, which is narrower than simply a generic
5 request that might have nothing to do with media
6 playback.

7 Q. All right. Let's turn to
8 Limitation 1B.

9 Limitation 1B requires "parsing
10 content information from the playback request
11 response," correct?

12 A. Among other things.

13 Q. What besides content information needs
14 to be parsed from the playback request response?

15 A. Well, it says "parsing content
16 information," but the reason I said "among other
17 things" is because there's further requirements on
18 the -- on what is -- what constitutes the content
19 information that needs to be met in order for this
20 claim to be satisfied.

21 Q. I see. So you said, among other
22 things, because content information was further, I
23 guess, defined in Limitation 1B?

24 A. Well, you only read the first part of
25 Limitation 1B. But Limitation 1B doesn't merely

1 say -- or only say "parsing content information
2 from the playback request response."

3 Limitation 1B goes on to state that
4 the content information must include at least the
5 things listed here.

6 And so if there's something that
7 somebody might consider to be content information,
8 but that, for example, didn't have any content
9 encryption keys, then it wouldn't meet the language
10 of this claim, even though it might nonetheless be
11 a playback request response that contained content
12 information.

13 Q. Okay. So the content information in
14 the playback request response for Limitation 1B
15 needs to include content encryption keys, correct?

16 A. Among other things.

17 Q. So the answer is yes?

18 A. The -- well, the answer is what's in
19 the claim. It has to include -- I mean, the best
20 answer is what the claim says, which is that it has
21 to include "content encryption keys, content
22 encryption key identifiers, and content encryption
23 key expiration times."

24 Q. Okay. Limitation 1B does not recite
25 anything specific that needs to be in the media

1 playback request, does it?

2 A. Well, Limitation 1B is addressing the
3 playback request response. So it's focused on the
4 response.

5 You know, it does reference the fact
6 that there was a playback request. So -- so in
7 that sense, it does echo some of the language from
8 the request that was sent.

9 But the main focus of 1B is on the --
10 what information is contained in the response.

11 Q. Okay. So we agree that Limitation 1B
12 recites what needs to be parsed in the playback
13 request response, correct?

14 A. I'm not sure -- again, when you say
15 "we agree that" and then you paraphrase the claim,
16 I get a bit concerned that you might
17 mischaracterize it.

18 I mean, we can agree that 1B says the
19 words that are in 1B. It's a pretty short claim.
20 And so rather than paraphrasing it, I think I would
21 rather just stick with the words that are there.

22 Q. And what words did I use that were
23 different from the claim?

24 A. You used different words. You know,
25 the claim says X, and you paraphrased it and you

1 said, you know, "We would agree that -- wouldn't
2 you, that the claim is how I paraphrased it."

3 And I said: Well, you know, without
4 agreeing or disagreeing specifically to that,
5 I think the best source of what 1B says is 1B
6 itself, not your paraphrasing of it.

7 Q. All right.

8 Does Limitation 1B recite parsing
9 content information from a media playback request?

10 A. It does recite that. And then it
11 places some further -- it further narrows what --
12 what content information must include.

13 MR. NOROOZI: I'm sorry. I didn't have
14 time to put in an objection. I object to that
15 prior question: Form.

16 BY MR. SARWAR:

17 Q. Limitation 1B, the question I asked
18 was whether Limitation 1B recites parsing content
19 information from a media playback request.

20 A. It says "from the media playback
21 request response."

22 I'm not sure if you switching "the" to
23 "a" was intentional or not intentional, but there's
24 an antecedent basis. I'll ask, do you intend to
25 strip out the antecedent basis in the question or

1 not?

2 Q. I'm trying to determine if you think
3 limitation 1B has to do with the request or the
4 response. Which one does it have to do with?

5 A. Well, it has to do with both. I mean,
6 it's most specifically talking about the playback
7 request response, which obviously has an antecedent
8 basis in Claim 1A where a playback request response
9 is first recited.

10 But that playback request response, in
11 turn, is related to an earlier media playback
12 request, which is recited in 1A and not
13 specifically recited in 1B, but obviously has a
14 connection there.

15 Q. All right.

16 In your opinion, does Limitation 1B
17 require the media playback request in Limitation 1A
18 to specifically include a request for content
19 encryption keys?

20 A. I'm not sure what the question is
21 asking.

22 Q. In your opinion, does Limitation 1B
23 require the media playback request to specifically
24 include a request for content encryption keys?

25 MR. NOROOZI: Objection.

1 A. It certainly can. You know, whether
2 there might be other -- whether there may be
3 other -- other forms of requests that -- it depends
4 what you mean by, you know -- it depends on what
5 you mean by asking for the keys.

6 But what is certainly undisputable or,
7 in my view, subject to interpretation, is that the
8 request -- or, I'm sorry, the response, the request
9 response, must include content encryption keys.

10 BY MR. SARWAR:

11 Q. Okay. So I'm asking about the request
12 specifically, and whether or not Limitation 1B is
13 explaining what's in that request.

14 And so I'll repeat the question sort
15 of slowly in case there's a misunderstanding about
16 whether or not I'm asking about the request or the
17 response.

18 Does Limitation 1B require the media
19 playback request to specifically include a request
20 for content encryption keys?

21 A. Limitation 1B is focused most directly
22 on the playback request response; in other words,
23 what comes back as a result of the request. And
24 what comes back must include content encryption
25 keys, among other things.

1 That's -- that's its primary focus.

2 But it ties to the prior media playback request
3 because it is, of course, only because that request
4 was sent that there is the response that is
5 addressed in Claim 1B.

6 Q. Okay. So if a media playback request
7 does not include an explicit request for a content
8 encryption key, could it still meet Limitation 1A?

9 A. I guess I'm not sure what your
10 question is.

11 Is it asking -- it has to be a media
12 playback request. And so I -- you know, I'm sure
13 there are various ways in which you could, you
14 know, you could ask for a media playback request,
15 but it has to -- it has to, you know, be a request
16 for you to be playing back the media.

17 Q. Okay. So there's nothing in
18 Limitation 1A and 1B suggesting that the request
19 needs to include a request for content encryption
20 keys, correct?

21 A. I wouldn't necessarily say that. I'd
22 have to go look at the spec and what else I've said
23 that about. It certainly can. But certainly the
24 response has to have the content encryption keys.

25 Q. Okay. Let's jump to Limitation 1E.

1 That should be on page 12 of your declaration.

2 We're still on paragraph 31.

3 A. Okay.

4 Q. Limitation 1E recites "issuing
5 requests to a license server," right?

6 A. Among other things.

7 Q. All right.

8 The requests in Limitation 1E are to
9 retrieve a second encryption key, correct?

10 A. That's right.

11 Q. Okay. In your opinion, does the claim
12 require the media playback request that was in
13 Limitation 1A to be issued to a license server, as
14 recited in Limitation 1E?

15 A. I mean, I don't see that same language
16 there. I mean, it could be.

17 Q. Okay. Let's go to Limitation 1F.

18 Limitation 1F recites applying the
19 second key for content decryption before the key
20 rotation boundary is reached, right?

21 A. No. You misread the claim.

22 Q. How did I misread the claim?

23 A. The claim says "after" and you said
24 "before."

25 Q. Can you explain to me more about the

1 sequence of events that's being described in
2 Limitation 1E and 1F?

3 A. I'm just trying to understand. You
4 read the entire claim word for word, but you
5 switched "after" with "before."

6 So I'm trying to understand whether
7 that was intentional or what -- I'm trying to
8 understand what you're asking, really.

9 Q. I understand what your question is.

10 Okay. You were disagreeing because
11 the claim requires applying the second key for
12 content decryption after the key rotation boundary
13 is reached instead of before, correct?

14 A. Yeah. Because you asked the question
15 in a manner that would lead a reasonable person to
16 believe that you were reading the claim, and all
17 the words were the same, but then you switched --
18 when you got to "after" you switched to "before."

19 And I wasn't sure whether that was
20 simply a mistake or --

21 Q. Yeah.

22 A. It was confusing because it's
23 literally not what the claim says.

24 Q. Right. Apologies.

25 Would a prior art system that applies

1 the second key for content decryption before the
2 rotation boundary meet Limitation 1F?

3 A. Well, I think to evaluate that, you --
4 you would look at what happens after the key
5 rotation boundary is reached.

6 Q. Okay. So a prior art system that
7 applies a second key for content decryption before
8 the key rotation boundary, but not after it, would
9 not meet Limitation 1F, correct?

10 A. I'd have to look at the particular
11 prior art system. I mean, is there a particular
12 prior art system that you have in mind, or a place
13 in the petition that you can point me to where such
14 a system is described?

15 Q. I'm referring to a hypothetical
16 system.

17 A. Yeah. I'm happy to analyze -- if
18 someone provides substantive analysis on a new
19 hypothetical system, I'm happy to provide my
20 responsive opinion, but I don't have enough
21 information from your hypothetical to answer the
22 question.

23 Or all I can say is that
24 Claim Element F requires what it says, which says:
25 "Applying the second key for

1 content decryption after the key
2 rotation boundary is reached."

3 Q. I'm showing you Exhibit 2010 from IPR
4 2025-4.

5 (From IPR2025-00004, Declaration of
6 John Villesenor re: Patent No.
7 11,122,313, marked as Exhibit 2010.)

8 BY MR. SARWAR:

9 Q. So this is the declaration related to
10 the '313 patent.

11 MR. NOROOZI: I'm sorry. I don't see it
12 in the chat.

13 When you say you're showing it, where are
14 you showing it?

15 MR. SARWAR: It should be in the chat.
16 Hopefully the internet is not clogged.

17 THE WITNESS: I have it downloaded here.

18 MR. NOROOZI: Yeah. I received it too.
19 Thank you.

20 MR. SARWAR: Excellent. Sorry. There's
21 probably a bit of a lag every now and then.

22 BY MR. SARWAR:

23 Q. All right. When you have it -- oh,
24 you already have it?

25 A. Yeah.

1 Q. This is the declaration you prepared
2 for the IPR proceeding that challenges the '313
3 patent, correct?

4 A. That's what it appears to be.

5 Q. Did you write this declaration?

6 A. Yes. I wrote it or it was written by
7 counsel at my direction. And it's my opinion.

8 Q. All right. Let's go ahead and turn to
9 page -- this is page 11, going onto 12,
10 paragraph 30 of the '313 declaration.

11 A. Yes.

12 Q. All right. Here you've reproduced the
13 language from the '313 patent, correct?

14 A. Yes.

15 Q. And again, you used the same claim
16 element designations that were used in the
17 petition, correct?

18 A. I tried.

19 Q. Okay. Limitation 1A recites "sending
20 a request for live media playback" and "receiving a
21 live media playback request response."

22 Correct?

23 A. Yes.

24 Q. Limitation 1A does not recite
25 specifically sending the request for the live media

1 playback to a license server, correct?

2 A. It doesn't specifically say sending it
3 to a license server, that's correct.

4 Q. All right.

5 And it doesn't specify any particular
6 location or entity to send it to, correct?

7 A. Well, again, I would give the similar
8 answer that I gave before, which is that it does
9 require that the entity it's sent to be an entity
10 that is capable of receiving and acting on the
11 request and sending an appropriate response which,
12 again, has, for example, the contents recited later
13 on in the claim.

14 Q. Okay. Limitation 1A does not recite
15 anything specific that needs to be in the request
16 for live media playback, does it?

17 A. Well, again, it's -- I mean, for
18 example, it doesn't say, you know, the packet size
19 must be a certain number of bits, but it has to be
20 a request for live media playback, which has
21 information that, you know, makes it possible for a
22 server to send back the request response containing
23 required information, for example, listed in 1B.

24 Q. Does the request need to include the
25 information that's contained in 1B?

1 A. Well, no, because -- because otherwise
2 if you already had the encryption keys, then you
3 wouldn't need to get them from a response.

4 So, I mean, I think it's -- it
5 wouldn't -- the question, as I think you're well
6 aware, doesn't really make a lot of sense because
7 it's in the response that you -- that the
8 requester, the requesting entity receives the
9 content encryption keys as well as the encryption
10 key identifiers.

11 Q. Right. And does the request need to
12 include specific requests for those content keys
13 and those identifiers?

14 A. I guess the question is confusing
15 because you said "does the request need to
16 include" -- plural -- "requests for those."

17 It has to be a request for live media
18 playback. And so I expect there are various ways
19 that such a request could be formulated. But in
20 all cases it must be formulated -- it must comply
21 with what's recited in the claim, which is that it
22 can lead to a response that has the information in
23 1B, for example.

24 Q. Okay. So the request in Limitation 1B
25 needs to be a request for live media playback,

1 correct?

2 A. No. You said -- you re-misidentified
3 the claim.

4 Q. You're correct.

5 So the request in Limitation 1A needs
6 to be a request for live media playback, correct?

7 A. Yes. That's what it says.

8 Q. All right.

9 And it does not need to be a request
10 for content encryption keys, correct?

11 A. Well, it has to be a request that can
12 allow a live media playback request response, such
13 that the system operates or the method operates as
14 is recited in this claim.

15 Q. Okay.

16 Limitation 1E recites obtaining a
17 second content encryption key, correct?

18 A. Yes.

19 Q. And Limitation 1F recites applying the
20 second key for content decryption after, not
21 before, the key rotation boundary is reached,
22 correct?

23 A. That's what it says.

24 Q. All right.

25 Let's turn to paragraph 33 of your

1 '178 declaration. So we're switching away from the
2 declaration that you have in front of you now, and
3 going to the '178 declaration.

4 This is Exhibit 2010.

5 A. Can you give the paragraph number?

6 Q. This is Exhibit 2010 from IPR 2025-3.
7 This is for the '178 patent, paragraph 33, which is
8 on page 17.

9 A. Okay.

10 Q. And since I asked you to switch
11 between declarations, I just want to confirm that
12 you're in the '178 declaration now; is that right?

13 A. Yes. I believe that's right.
14 Paragraph 33 on the document I'm looking at starts
15 on the third line of this page.

16 Q. Okay. Perfect.

17 MR. NOROOZI: Counsel, we've been going a
18 little over an hour, I think, maybe, and we're
19 switching into another area, if it's a good time
20 for a break?

21 MR. SARWAR: This is a great time for a
22 break. How long would you like to break for?

23 MR. NOROOZI: Five minutes.

24 MR. SARWAR: Five minutes sounds good.

25 All right. Wonderful. See you guys in

1 five.

2 (Recess taken, 10:05 a.m. to
3 10:11 a.m.)

4 BY MR. SARWAR:

5 Q. All right.

6 We've turned to paragraph 33 of
7 Exhibit 2010 from IPR 2025-3. This is the
8 declaration for the '178 patent, and we're on
9 page 17.

10 A. Yes.

11 Q. All right.

12 It says here that under the petition's
13 theory, only the --

14 A. I'm sorry. Which line -- where are
15 you reading?

16 Q. I'm reading from paragraph 33 of
17 Exhibit 2010.

18 A. All right. Can you direct me to a
19 particular line in paragraph 33?

20 Q. Sure. Do you see the --

21 A. I see, okay. I see it now, okay.

22 Q. All right. It says here:

23 "Under the petition's theory,
24 only the content key and not the
25 program key constitutes a 'content

1 encryption key' for the purposes of
2 the challenged claims."

3 Do you see that?

4 A. I see that.

5 Q. And then it has this excerpt from the
6 deposition of petitioner's expert,
7 Mr. Wechselberger, regarding Peterka's content
8 keys.

9 Do you see that?

10 A. I do.

11 Q. Why did you cite to petitioner's
12 expert here?

13 A. I'm not sure I understand the
14 question. I mean, petitioner's expert is offering
15 opinions on -- on the theory that the petition
16 presents regarding invalidity, and so it seems
17 perfectly reasonable to cite to petition's expert.

18 Q. Right. I'm not implying that you
19 shouldn't cite to the petition's expert. I was
20 asking you substantively why you cited to
21 petitioner's expert here.

22 A. Well, because it directly corroborates
23 and supports the statement that I make prior to
24 that citation.

25 Q. Okay. What fact are you saying that

1 he acknowledged?

2 A. That it was the content key in Peterka
3 that the petitioner -- the theory of invalidity
4 presented in the petition relies on a mapping in
5 which the Peterka content key is alleged to be the
6 claimed content encryption key for the purposes of
7 the challenged claims.

8 Q. Okay. Let's turn to paragraph 58 of
9 your declaration.

10 A. Okay.

11 Q. Let me know if you need a page number.
12 I think all of the paragraphs at this point, the
13 numbering is uncomplicated. So I don't think I
14 need to give you a page number, but I can provide
15 that if you need it.

16 A. I'm at paragraph 58.

17 Q. Here you use the phrase "the only
18 relevant key type," right?

19 A. Yes.

20 Q. Okay. And you're referring, again, to
21 Peterka's content key?

22 A. Again, referring to the fact that the
23 allegation of invalidity is based on the mapping of
24 Peterka's content key as allegedly being the
25 claimed content encryption key.

1 And so this is -- even Peterka
2 discloses various types of keys. It's the content
3 key that is relevant -- is the specific key within
4 Peterka that is alleged to be the claimed content
5 encryption key, which is why I'm focusing on it
6 here.

7 Q. Okay. Let's turn to paragraph 65.

8 65 is long. It spans from page 36 to
9 37. A third of the way down page 37 is where I'm
10 at.

11 Here you say:

12 "Peterka's content keys are the
13 only relevant key type for the
14 petition's theory."

15 Right?

16 A. Are you talking about the phrase
17 "which is the only relevant key type for the
18 petition's theory"?

19 Q. That's right.

20 A. That's what it says in the
21 declaration, yes.

22 Q. And you bold and italicize the word
23 "content," right?

24 A. Yes.

25 Q. And it looks like you cite to

1 Exhibit 1005, paragraph 101, right?

2 A. I don't recall. I think that's --
3 that's Peterka 1005? I think that's what it is.

4 Q. I think so as well. What I'm going to
5 do is I'm going to give you Exhibit 1005.

6 All right. I'm presenting to you
7 Exhibit 1005.

8 (Peterka, Patent Application
9 Publication Number 2002/0172368,
10 marked as Exhibit 1005.)

11 BY MR. SARWAR:

12 Q. Exhibit 1005 is the same in both
13 proceedings?

14 Does that sound right to you?

15 A. I don't claim to have memorized
16 exhibit numbers, but I'll take your word for it.

17 Q. Okay. Yeah, it is.

18 And this is the Peterka reference,
19 right?

20 A. This is the Peterka reference, yes.

21 Q. All right.

22 Let's turn to paragraph 101 of
23 Peterka.

24 A. Hold on. Let me make sure I've got --
25 you said paragraph 101?

1 Q. Yes. Paragraph 101, please.

2 A. Okay. Yes.

3 Q. And paragraph 101 is the paragraph you
4 cited in paragraph 65 of your declaration, right?

5 A. Can you remind me, were we talking
6 about which -- were we in the '178 declaration or
7 the '313 declaration?

8 Q. The '178 declaration.

9 A. Okay. And that was -- remind me,
10 again, which paragraph we were on?

11 Q. Yes, of course. Paragraph 65, a third
12 of the way down page 37.

13 A. Okay. Yes.

14 Q. So paragraph 101 of Peterka explains
15 what Peterka means when it uses the two words
16 "content" and "key" together, correct?

17 A. This is one place where, yeah, Peterka
18 discusses a content key.

19 Q. All right.

20 And in your declaration, did you bold
21 and italicize the word "content" to distinguish
22 between Peterka's content keys and the other key
23 types listed in Peterka in paragraphs 95 through
24 103?

25 A. Well, it's part of the broader point

1 that what matters for the purposes of the
2 petition's position -- I mean, in other words, you
3 have to be careful not to sort of conflate --
4 there's lots of things that are keys, various keys,
5 but not all keys are content keys.

6 And the content keys are the focus, as
7 I've described in my declaration.

8 Q. Okay. All right. Let's go back to
9 your declaration, paragraph 34.

10 Now it might be a little bit clearer
11 why I'm asking these questions.

12 In paragraph 34, you say that only one
13 of those keys is relevant to the petition's theory,
14 right?

15 A. Again, it's a big -- you just pointed
16 me to a paragraph that consumes a whole page. So
17 if you want to point me to a particular line here,
18 that would be helpful.

19 Q. Yes, of course.

20 So do you see where paragraph 35 is?

21 A. Okay. I see just above that.

22 Q. Four lines up.

23 A. Right.

24 Q. Four lines up. So in paragraph 34,
25 sort of near the end of paragraph 34 --

1 A. Yeah, I see the text.

2 Q. Right. And it says: "A program key
3 and a content key" -- and then it says -- "only one
4 of those keys is relevant to the petition's
5 theory."

6 To clarify, the key you're
7 referring to is Peterka's content key, correct?

8 A. Yes. Just making the point that if
9 it's not -- this Pay-Per-View request, the response
10 includes a program key and a content key, which are
11 two keys, but they are not two content encryption
12 keys, which is -- it's the content key or the
13 content encryption key in the language of the
14 patent that is relevant to the petition's theory.

15 Q. Okay. Let's turn to paragraph 40 of
16 your declaration. This is the '178 declaration.

17 A. Uh-huh. Yes.

18 Q. Near the top of paragraph 40, so
19 second line of paragraph 40, you use the phrase
20 "one relevant key" again.

21 To clarify, again, you're referring to
22 Peterka's content key here, correct?

23 A. I'm referring to content key.

24 But, again, I should say that this all
25 reflects the argument or the position articulated

1 in the petition.

2 So in other words, my focus on this is
3 a reflection of the petition's focus on this as
4 allegedly being the key that maps to the claimed
5 content encryption key.

6 Q. Okay. Do you use the same focus in
7 your '313 declaration?

8 A. Well, my recollection is for a lot of
9 it, the declaration is identical. Obviously, there
10 are some -- I do address there are some claim
11 differences. For example, the '178, I have some --
12 I address some things that aren't present in the
13 '313.

14 But I think the broader -- the point
15 that the petition -- well, both petitions with
16 respect to Peterka point to Peterka's content key
17 as allegedly meeting the requirement of the
18 challenged patent's content encryption key.

19 Q. Okay. Why don't we turn to
20 paragraph 44 of the '178 declaration.

21 A. I'm sorry. Were we just on
22 paragraph 40 of that declaration?

23 Q. Yes.

24 A. Okay.

25 Q. So now if we can go to paragraph 44 of

1 the '178 declaration.

2 A. Yep.

3 Q. You can let me know when you're there.

4 A. I'm there.

5 Q. All right.

6 In paragraph 44, you repeatedly
7 reference a concept called "provisioning."

8 Do you see that?

9 A. I see a reference in the fourth line
10 from -- but that's actually -- it's not actually me
11 making the -- it's -- Peterka is -- that's a quote
12 from Peterka, I believe.

13 Q. Okay. Do you see that you quote
14 Peterka several times in this paragraph as using
15 the word "provisioning"?

16 A. Yeah. I see a few quotes here. I see
17 one other one, but there may be more. I see one
18 towards the middle of the page.

19 Q. Yeah. And there should be one in the
20 last line, as well, of the page.

21 Do you see that?

22 A. Yes.

23 Q. Okay. What is your understanding of
24 "provisioning"?

25 A. Well, provisioning is -- I don't have

1 a complete -- I wouldn't claim to sort of be able
2 to recite every possible thing that anyone could
3 think of as provisioning.

4 But provisioning, for example, would
5 include the process of a server and a client kind
6 of establishing a connection and doing, you know,
7 authentication and setup.

8 This is one example of some of the
9 things that provisioning can be -- can include.

10 Q. Do you think that's the way Peterka is
11 using the phrase or the term "provisioning"?

12 A. I think it -- I think it is
13 encompassed with -- again, I didn't say it was an
14 exhaustive list of everything.

15 Q. Sure.

16 A. But I think that would -- I think that
17 would comport with how Peterka is using
18 "provisioning."

19 And, you know, again, as I -- the
20 point I make here is that there isn't -- there
21 isn't -- the claimed media playback request is not
22 sent from the Peterka client to the Peterka server
23 during provisioning.

24 Q. Okay. So is it your opinion that
25 provisioning would occur before any request to play

1 back media?

2 A. Well, the -- yeah. Provisioning, you
3 can't -- I mean, it could be -- in order to -- if
4 you're not connected, for example, you can't
5 request media playback is one example.

6 But there's no -- in the provisioning
7 as described by Peterka, there is -- there's no
8 request for media playback sent from a server to a
9 client during what Peterka -- sorry. There's no
10 request for playback sent from a client to a
11 server -- no media playback request sent from a
12 client to a server during what Peterka describes as
13 "provisioning."

14 Q. In your opinion, does the client need
15 to do anything for provisioning to occur?

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

18 Q. Well, you've referenced the client and
19 server communicating with each other during
20 provisioning, correct?

21 A. Yes. That's one thing that would --
22 could commonly occur.

23 Q. Okay. Does that -- I think you
24 mentioned that this could occur during some sort of
25 setup?

1 A. Yes. That's an example of how a
2 person of ordinary skill in the art would
3 understand as an example of what happens in
4 provisioning.

5 Q. Okay. Does that happen automatically
6 or does the client need to send requests to the
7 server during that process?

8 A. Well, the client, during that process
9 in Peterka, is not sending media playback requests.
10 I mean, there can be information exchanged, you
11 know, for example, for authentication, and the
12 packets would be understood to go back and forth.

13 So there's, you know, communication of
14 necessity requires information, at least in this
15 context, information going -- it would be going
16 typically in both directions.

17 But patents at issue don't claim
18 requests, you know, generically. They claim, for
19 example, media playback requests or requests for
20 live media playback.

21 And in Peterka, that is not -- that is
22 not what is described as occurring during Peterka's
23 provisioning.

24 Q. Okay. So during provisioning in
25 Peterka, does the server send keys to the client?

1 A. The server can. I mean, let's look
2 and see.

3 Well, I think that's addressed in
4 paragraph 44 here, right?

5 So it says, for example, a free -- I'm
6 looking at the middle of the paragraph -- a free
7 preview key is provided ahead of time during
8 provisioning, right? So that's an example of a
9 free preview key.

10 And that free preview key -- that's
11 not the content key, but that free preview says
12 that's used to distribute the content key.

13 I think, for example, the free preview
14 key could be used to distribute a content key CK0.

15 Q. Okay. So focusing in on the
16 provisioning part, I'm trying to figure out what's
17 happening during provisioning as it relates to keys
18 getting from the server to the client.

19 And I was asking, you know, during
20 provisioning, is the server sending keys -- for
21 example, a free preview key -- to the client over a
22 network?

23 A. Well, again, first of all, I'm going
24 to make sure when we say "keys," we distinguish
25 keys generically from content keys, right?

1 Q. Okay. Yeah, sure.

2 A. That's not just a "yeah, sure."

3 That's an important distinction, right? That's a
4 distinction that, if that's not made clear, is a
5 concern.

6 Q. So shall we focus our discussion on
7 free preview keys?

8 A. But that's not a content key.

9 You ask the questions -- you get to
10 ask the questions, but so you can ask about free
11 preview keys if that's what you want to ask about.

12 Q. Yeah.

13 A. But it's not a content key.

14 Q. Yeah, sure. Let's talk about -- so
15 here in paragraph 44 of your declaration, you quote
16 Peterka, and from -- it looks like -- there's
17 language here that says "a free preview key is
18 provided ahead of time, e.g., during provisioning,"
19 right?

20 A. You'll have to point me again to where
21 we are on this page.

22 Okay. I see it. I see it in the
23 middle, yeah.

24 Q. Yeah. So you say here:

25 "A free preview key is provided

1 ahead of time, e.g., during
2 provisioning, to a client as shown in
3 block 420."

4 Right?

5 A. Your question says "you say here," but
6 I was actually quoting what Peterka says.

7 Q. Okay.

8 A. So it's true that I do write that in
9 the declaration, but it is -- those are Peterka's
10 words as quoted by me, not my kind of spontaneous
11 composition here. This is just quoting Peterka.

12 Q. Okay. So is Peterka talking about
13 sending the free preview key to the client from a
14 server?

15 A. Well, yeah. I think it's talking --
16 it's talking about sending a free -- yes. It says
17 what it says: A free preview key is sent -- it's
18 provided ahead of time, during provisioning, to a
19 client.

20 So that -- I think that's what your
21 question was. So it says there's a free preview
22 key sent to a client during provisioning in this
23 particular portion of Peterka.

24 Q. Okay. And you cite that as coming
25 from paragraph 84 of Peterka, correct?

1 A. I'm looking at 85 -- oh, yeah, I see,
2 it's 84, yeah.

3 Q. But that language is not actually from
4 paragraph 84 of Peterka, correct?

5 A. I thought it was, but perhaps I'm
6 misquoting the paragraph number.

7 Q. Oh, yeah. I think it comes from
8 paragraph 85.

9 Why don't we pull up Peterka and take
10 a look.

11 A. Well, actually, I think -- hold on a
12 second. You put words in my mouth. The citation
13 is after 85, right?

14 Q. Yeah. I'm talking about the citation
15 before, which you attribute to the phrase:

16 "A free preview key is provided
17 ahead of time, e.g., during
18 provisioning, to a client as shown" --

19 A. Yeah. I think the citation is -- it's
20 cited in paragraph 85, I think.

21 Q. Oh, do you think that parenthetical
22 that says "A free preview key is provided ahead of
23 time, e.g., during provisioning, to a client as
24 shown in block 420," you're saying that that
25 citation is actually supposed to be to

1 paragraph 85?

2 A. Well, I don't remember whether it's 84
3 or 85. Maybe I can just go to Peterka and --

4 Q. Yeah. Let's go to Peterka.

5 A. -- look at it.

6 Q. And if you could turn to paragraph 84
7 and then turn to paragraph 85, just let me know
8 where that language is coming from.

9 A. It looks like it's in the beginning of
10 85.

11 Q. Okay. So -- I agree with you. I
12 don't think it's from 84. I do think it's from 85.
13 I think we're on the same page there.

14 Paragraph 85 is discussing Figure 4 of
15 Peterka, correct?

16 A. The particular citations of it are
17 discussing Figure 4, that's right, yes.

18 Q. Okay. But Figure 4 doesn't have a
19 block 420, correct?

20 A. I don't know. I haven't memorized the
21 block numbers.

22 Yeah. I'm looking at the -- I'm
23 looking at Figure 4, and I don't see -- I don't see
24 a block -- yeah, I don't see a block labeled 420.

25 Q. Okay. Did you notice this before I

1 pointed it out to you?

2 A. I may have, but I don't remember.

3 Q. Okay.

4 A. Again, it's -- the point still stands.

5 The key sentence here -- the key text is:

6 "A free preview key is provided

7 ahead of time, during provisioning."

8 That's the -- "to a client."

9 That's the disclosure in Peterka.

10 And that stands, regardless of whether there's a
11 block labeled 420 or not.

12 Q. Okay. So looking at Figure 4, what do
13 you think Peterka was referring to when it referred
14 to "block 420"?

15 MR. NOROOZI: Objection, form.

16 A. Yeah. I hesitate to sort of add --
17 you know, modify a figure for Peterka --

18 BY MR. SARWAR:

19 Q. I understand.

20 A. -- but I think that the earlier blocks
21 in Figure 4 are consistent with the text that I've
22 quoted from paragraph 85.

23 And so, again, the point that I'm
24 making here is in the text that I've just read to
25 you, that the free preview key is provided ahead of

1 time, e.g., during provisioning, to a client.

2 Q. Are you referring to block 402 when
3 you're saying "earlier block"?

4 A. Well, there's -- I'm going to go back
5 up there.

6 Block 402 does specifically talk about
7 "provide client with a free preview key." So
8 that's clearly relevant to the disclosure, you
9 know, that I've cited.

10 Q. Okay. And do you think that's what
11 Peterka was talking about when it said "as shown in
12 block 420"?

13 A. Yeah. Again, I'm -- I'm hesitant
14 to -- I mean, perhaps they meant to write 402
15 instead of 420? But, again, the number on the
16 block is less important to me than the fact of
17 what's stated in the text here, which is that a
18 free preview key is provided ahead of time during
19 provisioning to a client.

20 Q. Okay. So is the free preview key
21 described here, is it sent in encrypted form?

22 A. I don't recall. I'd have to look. It
23 doesn't specifically say in Figure 402 -- I'm
24 sorry, Figure 4 either way. So I'd have to look at
25 the other portions of Peterka.

1 Q. Okay. Do you know what an ECM is?

2 A. Yeah. It's one of the two categories
3 of messages that are sent by -- ECMs and EMMs. And
4 so that's the -- yeah. Those are two messages that
5 are -- types of messages that are described.

6 Q. Is it your understanding that the free
7 preview key is provisioned in an ECM?

8 A. Well, let me look at -- yeah, I think
9 a free preview key can be sent, yes, using an ECM.

10 Q. I'm specifically asking for the
11 purpose of provisioning.

12 Is your answer the same for if the
13 free preview key is being provisioned, it can be
14 sent in an ECM?

15 MR. NOROOZI: Objection.

16 A. I think that's -- I mean, that's
17 how -- that's -- I'm just trying to understand what
18 your question -- what your question is.

19 In the embodiment in Peterka, for
20 example -- I've got to open Peterka again.
21 I accidentally closed it.

22 Yeah. So there's -- it says -- ECM
23 can be used to send a free preview key, you know,
24 so people can -- so people who are potentially
25 interested can watch a free preview.

1 And that happens without any sort of
2 request, just, you know, the server sends those out
3 without the client saying it specifically wants to
4 watch, to view, you know, playback.

5 BY MR. SARWAR:

6 Q. I think you just implied that you were
7 reading from something. I think you said "Here it
8 says." I just wanted to know where you were
9 looking.

10 A. Yeah. I was looking at paragraph 104
11 of Peterka because that's where it was talking
12 about ECM. And then I was also looking at my
13 declaration.

14 Q. Okay. And can a free preview key be
15 provisioned in an EMM?

16 MR. NOROOZI: Objection, form.

17 A. I'm not seeing -- EMM, it looks like
18 it's for unicast messages, so I'm not seeing a
19 specific description that it can or that it is but
20 I'd have to look more carefully at my declaration
21 in Peterka to answer that question with certainty.

22 BY MR. SARWAR:

23 Q. Okay. Let's stay on paragraph 104 of
24 Peterka.

25 You see here that Peterka uses the

1 phrase "encrypted under," right?

2 A. I'm sorry. You're pointing to these
3 15 lines, and you've got to tell me --

4 Q. Yeah. It's line 4 from paragraph 104
5 of Peterka.

6 A. Yeah. I see that.

7 Q. Yep. It says -- there's a
8 parenthetical there, and it says "shown as keys
9 encrypted under the UK," right?

10 A. Right.

11 Q. Okay. I think I saw that you also
12 used the phrase "encrypted under" in your
13 declaration.

14 A. I might have.

15 Q. Yeah. For example, in paragraph 40 of
16 the '178 declaration.

17 Yeah. Sort of near the first few
18 lines of paragraph 40, there's a parenthetical that
19 says "one content key encrypted under one service
20 key."

21 Do you see that?

22 A. I'm sorry. Which page?

23 Q. This is page 20 of the '178
24 declaration, paragraph 40.

25 A. Oh, in the parenthetical, yeah, "one

1 content key encrypted under one service key."

2 Q. Are you using the phrase "encrypted
3 under" in the same way that Peterka is using it?

4 A. I'm basically talking about wrapping,
5 the idea of a key being kind of inside another key,
6 basically.

7 You can use a method or a key at one
8 level to contain contents sort of inside it. So
9 that's the idea of sort of key wrapping.

10 Q. Can you describe a little bit more
11 about key wrapping?

12 A. Well, I mean, for example, you could
13 send -- just taking it off, away from if there's a
14 key A that is being sent, and it's possible to
15 basically, you know, encrypt that key, you know,
16 using key B and send the encrypted, you know --
17 send the encrypted message.

18 And then you unwrap that encrypted
19 message and that exposes key A. That's an example.

20 Q. Okay. So if you're sending key A
21 under key B --

22 A. Right.

23 Q. -- that message includes an encrypted
24 key A, correct?

25 A. Once it's been encrypted by the

1 higher-level key, that would be true, yeah.

2 Q. Okay. And then does that message also
3 include key B?

4 A. What do you mean?

5 I mean, I guess in general -- I mean,
6 just talking generally about, you know, symmetric
7 key encryption, you can use a key to encrypt a
8 message, but you don't actually transmit, I mean,
9 the key.

10 Obviously the recipient, when they
11 receive the encrypted message, they have to have
12 possession of the key obtained by some other
13 mechanism in order to decrypt the message, if
14 that's what the question is.

15 Q. You got the question exactly right,
16 yes.

17 So I'm trying to figure out whether,
18 if we see, you know, in Peterka, for example, key A
19 encrypted under key B, and you see that in a
20 message, I'm trying to figure out whether or not
21 just key A is being sent in that message or is it
22 key A and key B?

23 A. Yeah. I wouldn't necessarily say that
24 that -- you know, but I was speaking generally.

25 And, again, Peterka -- what Peterka

1 does -- I'm not willing to make kind of a blanket
2 statement about what key is or isn't transmitted in
3 all cases in Peterka.

4 I mean, I certainly -- it is certainly
5 the case, for example, that the content keys do
6 need to get conveyed, you know, to the client.

7 But -- but I wouldn't purport to have
8 in my head, you know, the answer to all -- you
9 know, how all of the different keys in Peterka are
10 conveyed or not conveyed.

11 Q. That's reasonable. This will be
12 useful context though for some future questions.

13 So let's turn to Table 1 in Peterka,
14 which is in paragraph 104, which we've been
15 discussing.

16 Do you see that?

17 A. Yes.

18 Q. Table 1 lists all the ways Peterka
19 teaches that its various keys can be distributed to
20 clients, right?

21 A. It talks about the different keys in
22 Peterka. I just want to see what it says -- where
23 it references Table 1.

24 Yeah. So this is just an example of
25 the different keys that are present in Peterka, and

1 it's also got different columns for different --
2 different -- I guess I'll call them "viewing
3 models" disclosed by Peterka.

4 Q. Okay. So what we're seeing in Table 1
5 is a list of all the ways that Peterka is teaching
6 that its keys can be distributed to clients, right?

7 A. I wouldn't -- I don't know if I would
8 say it that way. I think it's saying -- it does
9 contain information about that, but it's more --
10 I think of it as just -- because there's these
11 different viewing models in Peterka, I think it's
12 conveying, among other things, the different -- the
13 different ways that these keys apply or don't
14 apply, as the case may be, in some of these
15 different models.

16 Q. Okay. Does Table 1 list the ways that
17 you can distribute the free preview key?

18 A. Well, I mean, it addresses the free
19 preview key in -- at the bottom row or near the
20 bottom of the table, if that's the question.

21 Q. Are you looking at the row labeled
22 "FPK"?

23 A. Yes, which I understand to mean free
24 preview key.

25 Q. So does Table 1 show that there's two

1 ways of distributing the free preview key?

2 A. I'm not sure what you mean by two ways
3 of distributing the free preview key.

4 Q. Okay. So it says --

5 Do you see where it says "(FPK) UK"?

6 A. Yes.

7 Q. That means that the free preview key
8 is encrypted under the unique key, correct?

9 A. Yes. That's what that means.

10 Q. And I guess the table is saying that
11 you can distribute the free preview key under the
12 unique key, and that's one way of distributing it,
13 correct?

14 A. That's what the entry in the table is
15 conveying, that under a -- like a unicast model, I
16 believe, this is how the free preview key could
17 be -- this is an example of how the free preview
18 key could be delivered.

19 Q. Okay. In an ECM in which you have the
20 free preview key encrypted under the unique key,
21 would you expect that ECM to include the unique
22 key?

23 A. I think the ECM is used for multicast
24 messages.

25 Q. Okay. So in an EMM in which you have

1 the free preview key encrypted under the unique
2 key, would you expect the EMM to include the unique
3 key?

4 A. I don't recall whether that -- whether
5 Peterka is specific in that respect or no. Again,
6 it's encrypted -- it's encrypted under the unique
7 key, but it doesn't -- I don't -- again, there may
8 be something in Peterka which says how the unique
9 key itself is distributed. And I don't -- I don't
10 recall how that -- how that is --

11 Actually, I'm looking at paragraph 95.
12 It looks like it's -- the unique key is unique per
13 viewer and per session, so...

14 So it looks like -- I mean, at least
15 as I'm reading paragraph 95, it looks like the
16 client would already have a unique key for a
17 particular server.

18 Q. Okay. And then Table 1 also says that
19 you can provision the free preview key, correct?

20 A. It says "provisioned," yes.

21 Q. So those are two alternatives; is that
22 right?

23 A. Well, there's a -- in this table,
24 they're presented as two different -- two
25 different -- two different ways for the free

1 preview key to be -- to be sent.

2 But the underlying principle in both
3 with respect to the points I've made is the same,
4 which is that it's sent without a request.

5 Q. Okay. You're familiar with the group
6 key, correct?

7 A. Yeah. I mean, again, I've run into
8 the group key before, but it's described in 102.

9 Q. Okay. And it looks to me like Table 1
10 is listing these two -- these same sort of two
11 different ways to distribute the group key to a
12 client, correct?

13 A. Hold on a second. I'd better reopen
14 my declaration.

15 So the question again?

16 Q. It looks to me like the table is
17 showing that the group key can be conveyed or
18 distributed to clients in the same two ways:
19 Encrypted under the unique key or provisioned.

20 A. Yeah, that's what Table 1 appears to
21 be showing there, yeah.

22 Q. All right. Let's turn to Figure 7A of
23 Peterka.

24 A. Okay.

25 Q. Do you see a curved line there in

1 Figure 7A?

2 A. The thing that rises up and peaks and
3 then goes down again?

4 Q. Yeah.

5 A. I do, yes.

6 Q. That's a plot showing the number of
7 requests for a program over time, right?

8 A. Well, we have to be careful with the
9 context.

10 It's a -- I sort of think of it as
11 a -- maybe it's like a PDF or a histogram of the
12 number of subscribers, the number of people who
13 will basically indicate an interest in continuing
14 to watch a piece of content that they've already
15 started to be able to see thanks to the free
16 preview.

17 Q. When you say "PDF," what do you mean?

18 A. I mean, it's a smooth curve. So if
19 you had 10,000 subscribers, and you gave them all a
20 free preview and you looked at, you know, as a
21 function of time, how many -- which of those 10,000
22 subscribers -- of course, some of them would choose
23 not to watch -- would not want to watch it.

24 But some subset of them are going to
25 decide that, you know, in addition to receiving

1 the -- they've been sent the free preview without
2 having to ask for it, but they might say: Hey,
3 this looks pretty interesting. I'd like to see the
4 whole thing.

5 And so -- but they're going to make
6 that decision at different points in time. I think
7 the curve is intended to reflect sort of the
8 distribution of when that decision is made.

9 And PDF is a probability density
10 function. But it's -- you can think of it as sort
11 of like a histogram. They're not exactly the same,
12 because a histogram is a discrete set of bars,
13 basically, whereas a PDF is a continuous function
14 that has certain mathematical properties to it.

15 But the principle is the same in that
16 this picture is illustrating that there's a range
17 of times when people are going to elect to see the
18 content and that it's not equally distributed,
19 right?

20 People are more likely to decide to
21 view the content as the free preview is nearing its
22 end or just after the completion of the free
23 preview.

24 Whereas all the way over on the right
25 side of the graph, you know, there's obviously very

1 few people who are going to want to say: Hey, I
2 want to watch this program, if they've already
3 missed, you know, the majority of it.

4 Some people will, but most people
5 won't.

6 Q. Okay. Is it fair to characterize
7 Figure 7A as a plot showing the number of requests
8 for a program over time?

9 A. That's a tricky question, isn't it?
10 I think that's a question phrased in a very
11 perilous manner so -- because the word "request"
12 is, as you know well, also in the claims.

13 I think that's a mis- -- a dangerous
14 misphrasing that would, you know, likely be quoted
15 out of context.

16 So I think, again, it's the number
17 of -- it's the number of people -- it's basically
18 the people who are making indications that they
19 want to watch the content.

20 And it's true that the label is number
21 of requests, but that is a completely distinct use
22 of the word "request" from the patent itself -- or
23 from the claims, I should say.

24 Q. So -- sorry. I'm going to try the
25 question again.

1 Are you saying it's not fair to
2 characterize Figure 7A as a plot showing number of
3 requests for a program?

4 A. What I'm saying -- no, the vertical
5 axis says that. But I am concerned that an answer
6 will be taken out of -- an answer -- what I believe
7 or might believe to be an innocuous answer will be
8 taken out of context and conflated with the term
9 "request" in the challenged claims. And that's not
10 what this is.

11 This is -- the number of requests that
12 are labeled here relates to the actions of people
13 who are watching the free preview and deciding or
14 not deciding to go ahead and indicate in a desire
15 to watch the rest of the program.

16 And so I just think, given the
17 sensitivity of the term "request" in the claims, I
18 think it's important to make that distinction.

19 Q. Okay. I mean, Peterka itself
20 characterizes these as requests for a program,
21 correct?

22 A. Peterka uses the word "request" but
23 it's not the same as -- there's a risk that it
24 could be inadvertently confused with the --
25 conflated with the claims in a manner that would

1 not actually be -- have fidelity to what Peterka is
2 actually disclosing.

3 Q. So is Peterka not disclosing requests
4 for a program?

5 MR. NOROOZI: Objection, form.

6 A. Peterka is disclosing -- I mean, the
7 word "request" is used in a few different ways.
8 And one of the ways that Peterka is using the word
9 "request" is in the vertical axis of this graph,
10 which is reflective of the decisions by human
11 viewers to indicate a desire to continue to watch a
12 program that they've had a chance to see a portion
13 of through the free preview.

14 But I think that's distinguished --
15 distinct from the request that's actually claimed
16 in the challenged claims.

17 BY MR. SARWAR:

18 Q. Well, I'm asking about whether or not
19 it's fair to characterize it as request for a
20 program.

21 Is that fair or not?

22 A. Again, as long as we have the -- it's
23 only fair as long as there isn't an either
24 intentional or unintentional conflation of the
25 terminology here.

1 Q. Okay. So, I mean, Peterka literally
2 characterizes those requests in Figure 7A as
3 requests for a program, right?

4 A. I don't dispute that, yes. But my
5 earlier point stands about the distinction between
6 the claim language and the term as used in relation
7 to the vertical axis of the graph here.

8 Q. All right.

9 The horizontal axis underneath the
10 curved line is time, correct?

11 A. Yes, the horizontal axis is a time
12 axis.

13 Q. And the plot shows that during the
14 free preview, the number of requests increases,
15 correct?

16 A. The way I'd characterize it is that as
17 the free preview continues, up to a certain point,
18 the number of people who will decide that they want
19 to -- who will elect to indicate a desire to
20 continue watching will go up, but that number will
21 then at some point, as the curve indicates, start
22 to go down.

23 Q. So the number of people who will
24 decide what they want and who will elect to
25 indicate a desire to continue watching, does that

1 correspond at all to the number of requests the
2 server receives for the program?

3 A. I'm not sure what you mean by -- I'm
4 not sure what you mean by that.

5 I mean, certainly if they -- if they
6 decide to, you know, for example -- if they have to
7 purchase -- if they have to pay to continue to
8 watch it, then there will be -- there can be a --
9 you know, they will press some button, and at some
10 point associated with that there can be, for
11 example, a request saying -- a request sent from a
12 client to a server. But those are different
13 things.

14 And that's illustrated, for example,
15 in Figure 7B.

16 Q. Well, sticking with Figure 7A, I'm
17 hearing you make a distinction between the number
18 of requests that's in the plot on Figure 7A or
19 reflected by the plot on Figure 7A and the number
20 of requests that are sent from clients to the
21 server.

22 Is that fair?

23 A. Well, I mean, I think -- I guess
24 I'm -- I find the question confusing because
25 there's -- the claim -- the number of requests in

1 the graph here is talking about sort of at a system
2 level or a network level, right?

3 There's -- you might have hundreds or
4 thousands of people on a particular network. But,
5 you know, if I go -- let me just go to -- yeah.

6 For example, if I go to Claim 1 of the
7 '178 patent, you know, it's initiating a media
8 playback request. So it's reciting a media
9 playback request there. So that's -- that's
10 referring to the -- for example, to the
11 communication between a single client and a single
12 server, whereas the graph is referring to kind of
13 the network-wide -- at least the curved part of the
14 graph is referring to the sort of aggregate
15 behavior of the base of people -- the set of people
16 over the network -- on the network generally, or on
17 the system generally.

18 Q. Okay. And do you think the aggregate
19 behavior of the base of people corresponds to
20 requests from a client or from clients?

21 A. Well, from clients, plural, in the
22 sense that -- I mean, obviously there's a -- there
23 is a relationship, you know. If 5,000 people press
24 a button saying they want to pay for and then view
25 the remainder of the program, that will result

1 in -- you know, in each individual client
2 associated with each individual user may, depending
3 on other factors, then, you know, send an
4 indication of that to the server.

5 But those are -- they are related, but
6 they're different.

7 Q. Okay. And you're saying that the plot
8 that's shown in Figure 7A reflects user desires but
9 not client requests?

10 A. I think that's a mischaracterization
11 of what I just said.

12 I think my prior answer stands on its
13 own.

14 Q. Okay. I'm just trying to find out --
15 I'm trying to have some clarification about whether
16 a systemwide number of requests going up or down
17 correspond to requests from a client to a server.

18 And your answer seems to distinguish
19 between requests from a client to a server and user
20 desires.

21 Is that fair?

22 A. Well, I think -- again, I prefer to
23 use my own words, not your summary of them.

24 Q. Sure.

25 A. But like I mentioned -- I think I did

1 say in my previous answer that there's a -- there
2 can be -- there's a correlation, that they're
3 related, but they're -- so this curve is
4 examining -- is kind of looking at a system from
5 one angle.

6 It's kind of -- it's stepping back and
7 looking at the aggregate behavior of a bunch of --
8 well, you know, lots of users, lots of viewers on
9 the system.

10 And those viewers will make individual
11 decisions that collectively will correspond to the
12 curve that you see right there.

13 But at the individual level, that's
14 where a particular decision can lead to a request
15 being sent. But it's not the claimed -- it doesn't
16 meet the claimed request because there's not, you
17 know, for example, in Peterka, there's not the
18 response -- the response doesn't contain the
19 information that is required under the claim.

20 But there can be a request
21 generated -- there can be a request sent to a
22 server based on client behavior; just it's not
23 going to satisfy the claim language for the reasons
24 I've explained.

25 Q. So the plot in Figure 7A, does it

1 reflect client requests received by servers?

2 A. I would say it is -- again, the -- it
3 reflects system-level behavior of users, which in
4 turn will have a correlation with the amount of
5 activity between the client associated with each
6 particular human user and the server that that's
7 connected to.

8 So there are relations there, but it's
9 not the same thing.

10 Q. Does Peterka ever use the word
11 "request" in conjunction with the user desire?

12 A. I'm not sure what you mean. I think
13 this -- this graph here, in fact, is a direct
14 reflection of decisions that users will make and
15 that reflects what they want to do.

16 Q. Well, I'm asking about the use of the
17 word "request" by Peterka, which is I think what
18 you're, I guess, treating very carefully, right?

19 A. I'm treating it carefully because I
20 don't have confidence that my answers won't be
21 taken out of context.

22 There's the requests -- these requests
23 here, and then there's the claimed requests in the
24 challenged claims in the challenged patents, right?

25 Q. So when Peterka uses the word

1 "request," is it referring to user desires or
2 client requests?

3 A. Well, I think it's referring to the
4 view -- the desires of users, which will be
5 reflected at the individual level with -- through
6 requests from an individual client to a server.

7 Q. Okay. Can you point me to anything in
8 Peterka suggesting that the term "request" is ever
9 used outside of the context of a client request to
10 a server?

11 MR. NOROOZI: Objection, form.

12 A. I mean, the Peterka you've given me is
13 not text-searchable, so it takes a long time to --
14 I've got to read the whole thing if I want to look.

15 I don't know if you want to give me a
16 text-searchable one or have me pull up a version
17 which might be text-searchable.

18 What's your recommendation there? I
19 mean, I'm happy to do whatever you recommend.

20 BY MR. SARWAR:

21 Q. Do you have a version of Peterka
22 that's text-searchable?

23 A. I don't know. I have a version of
24 Peterka. I don't recall whether its
25 text-searchable. I'll find out in a moment.

1 Yes. My version is text-searchable.

2 So is it okay if I look at my version
3 here?

4 Q. Can you let me know whether there are
5 any notes in this version of Peterka.

6 A. There's no notes. This is the PDF
7 that is part of the record from the IPR.

8 Q. It's the same PDF?

9 A. No.

10 Q. Or, I'm sorry, the same document?

11 A. That's my understanding, yes.

12 Q. Okay. Why don't you use that to try
13 to answer this question.

14 A. Yeah. So there is some text in
15 Peterka here expressing -- or relating to consumer
16 desires or wants.

17 Q. Where?

18 A. For example, in relation to
19 subscription, it talks in paragraph 72 that when
20 the client consumer wants to subscribe -- so it's
21 talking specifically about consumer wants.

22 So, again, your question before sort
23 of, you know, "Can you point me to anywhere in
24 Peterka," sort of suggested that nowhere in Peterka
25 is there any hint of anything about what a consumer

1 might want.

2 But my respectful response to that is
3 that -- this example in paragraph 72 shows that
4 Peterka does indeed have -- you know, does indeed
5 contain some disclosure about the wants of a human
6 consumer.

7 Q. Sure. But the question I asked you
8 was whether or not Peterka ever discusses requests
9 outside of the context of client requests.

10 A. Again, I --

11 Q. And you're showing me in paragraph 72
12 of Peterka a phrase that says "client/consumer
13 wants to subscribe."

14 It's not discussing requests, and also
15 it's discussing the client. So I'm still looking
16 for --

17 A. With all due respect, I think it's
18 discussing the person.

19 Q. Is it discussing the client?

20 A. Well, also that. But the next line
21 says "It will be required to provide a credit card
22 number."

23 So I think it's -- I think it's, you
24 know -- I think people provide -- I mean, it says
25 "consumer." And a consumer is understood to be a

1 person.

2 Q. Is paragraph 72 discussing requests?

3 A. Well, I mean, you're sort of changing
4 the question.

5 Q. No. No. That was the question.

6 A. No. No. That was a different
7 question.

8 Q. The question was whether or not
9 Peterka ever discusses requests outside of the
10 context of client requests?

11 A. Right. But I guess the earlier
12 question was phrased -- or the questions were
13 phrased in a way that expressed high skepticism
14 that Peterka ever discussed anything about what a
15 consumer might want. And, you know, I don't have
16 the realtime, but I think the realtime certainly
17 reflects that.

18 And then you asked another question,
19 basically saying, well, that if that's your view
20 that Peterka does, at least at times, provide
21 disclosure about what a consumer wants, show me
22 where.

23 So I'm showing you at least one
24 instance where Peterka does have that disclosure.

25 Q. I can read back to you the question

1 that I asked before, which was: Does Peterka ever
2 use the request in conjunction with user desire?

3 A. And, yeah, I haven't finished my
4 review. I mean, again, I've given you one example
5 which I think is responsive to user desire.

6 Q. Does paragraph 72 use the word
7 "request"?

8 MR. NOROOZI: Well, I'm just going to have
9 to step in for a second.

10 I mean, please don't interrupt the witness
11 when he's in the middle of an answer. And for both
12 your sakes, please don't talk over each other. The
13 reporter can't accurately transcribe that. It's
14 quite a challenge for her. And we want a good
15 record here.

16 MR. SARWAR: I appreciate that.

17 A. Yeah. I'd have to take a look at -- I
18 don't see the word -- in a brief eye scan here, I
19 don't see the word "request," although I can't rule
20 out that a request isn't, you know, part of what's
21 happening here.

22 BY MR. SARWAR:

23 Q. Are you aware of any instances in
24 Peterka where Peterka uses "request" and is not --
25 outside of the context of client requests?

1 A. Again, to answer that question, I
2 would need to go through Peterka, which I'm happy
3 to do if you are okay with that.

4 But I can't -- I haven't -- I've --
5 I haven't memorized the entirety of Peterka, so I'd
6 have to go through it to answer that question.

7 Q. Okay. But without reviewing it right
8 now, you are unaware of any locations in Peterka
9 where Peterka refers to requests as reflecting user
10 desire and not reflecting a client request?

11 A. Again, I haven't memorized Peterka.
12 And so if the question is have you, you know -- I
13 mean, I'm not able to identify from memory a
14 particular paragraph responsive to that question,
15 but neither can I exclude that such a paragraph
16 exists.

17 Q. Okay. In paragraph -- sorry,
18 Figure 7A of Peterka, it's your opinion that the
19 number of requests that's shown in the plot of
20 Figure 7A relates to user desires and not to client
21 requests?

22 A. That's yet again a misstatement of
23 what I said before. I didn't say that. I didn't
24 say it's not related. I said it was
25 distinguishable.

1 Q. Okay. Can you turn to paragraph 91 of
2 Peterka.

3 A. Yes.

4 Q. Do you see paragraph 91 of Peterka
5 discusses requests a number of times?

6 A. Yes.

7 Q. Are those client requests?

8 A. Yes. This is -- this would be
9 requests that -- what's being discussed here is a
10 request that would be sent. But, again, there's
11 the singular/plural issue, right? A single client,
12 a single user, a single person is going to, at
13 most, initiate a single request. But Figure 7A is
14 illustrating the behavior of the system in the
15 aggregate, not of any one particular client.

16 Q. So do you agree that Figure A
17 illustrates a plot showing the number of requests
18 for a program versus the program duration?

19 A. I'm not sure what -- you said
20 "Figure A," but if you mean Figure 7A --

21 Q. I apologize, Figure 7A.

22 A. Yeah. I think it reflects what
23 users -- the decisions that users make, which will
24 then correlate to a -- in the case of each single
25 user, to a request saying, you know, I want to see

1 the rest of this program.

2 That can result in a transmission from
3 a client to a server, but not the claimed request,
4 for the reasons that I've already discussed at --
5 or I address at length in my declaration.

6 Q. Okay. And the plot in Figure 7A is
7 referring to the number of client requests,
8 correct?

9 A. Well, it's referring to the -- it
10 reflects the number of people who are making
11 decisions they want to watch the program.

12 And then having made that decision,
13 they will indicate that decision, and collectively
14 there will be a lot of requests from clients.

15 But any one client or any one customer
16 is going to basically just send one indication that
17 they want to watch the remainder of the program, at
18 least as shown in Figure 7A.

19 Q. Okay. So turning to Figure 7A, the
20 plot shows that during the free preview, the number
21 of requests increases, correct?

22 A. As that free preview period
23 progresses, the number of requests across the
24 network -- again, at any one -- any one consumer
25 who is in control of any one client will just make,

1 at most, one request in the context of this graph.

2 But aggregate -- aggregated over the
3 network as a whole, the number of aggregate
4 requests will increase.

5 Q. So the aggregate number of client
6 requests increases during the free preview in
7 Figure 7A?

8 A. Yeah. But, again, we have to
9 understand that this is -- I think this is like a
10 PDF. This is not a plot of cumulative requests,
11 right? It's really an indication of the number of
12 people per unit time who will indicate a desire to
13 watch the content.

14 And that, in turn, will get reflected
15 in messaging between each consumer's particular
16 client and the server. But it's not a
17 cumulative -- it's not a cumulative plot. It's,
18 again, like I said, the best mathematical analogy
19 is it's a PDF.

20 Q. Okay. But it's a plot showing the
21 number of requests, correct?

22 A. With the qualifications that I just
23 explained.

24 Q. Okay. And that plot is showing that
25 the number of requests keeps increasing through the

1 free preview and into the program duration itself,
2 correct?

3 A. When you say into the program duration
4 itself, again, I think if someone only heard that
5 question and they didn't have the plot, they would
6 think that it keeps going up and up and up. So,
7 I mean, I'm not sure what else there is to say.

8 You know, the height of the curve
9 increases to the end of the free preview period.
10 It appears to slightly increase briefly after that.
11 And so, again, this is sort of requests per unit
12 time, you know, reflecting what the people are
13 going to decide to do.

14 And then it starts to decline and
15 continues to decline until the end of the program.

16 Q. Yeah. Is there anywhere in that plot
17 where the number of requests for the program is
18 zero?

19 A. Well, it looks like at the very
20 beginning, it looks like it's, you know, there's
21 a -- there's a period where -- the resolution is
22 too small to really know where it picks up, and if
23 you zoomed in, it does appear to hit zero at the
24 very beginning.

25 Again, that's why it's important to

1 understand what a PDF is. It's not -- it's not --
2 it's not itself directly a measure. And it's a
3 mathematical construct that -- that's how you'd
4 have to understand something like this.

5 Q. All right. Is it showing -- does
6 Figure 7A -- does the plot in Figure 7A show the
7 number of requests for the program to be zero
8 anywhere else, aside from just to the left of the
9 free preview period?

10 A. No, I wouldn't say -- okay. Just at
11 the left -- within the free preview -- within the
12 free preview period at the left, it appears to hit
13 zero. But that is the only place in the figure
14 where it appears to hit zero.

15 Q. Okay. So the only point on that plot
16 where we can say for sure there have been no
17 requests for the program is at the beginning of the
18 free preview period, right?

19 A. I mean, that's what the -- the -- let
20 me say, they're not -- the point of this figure is
21 to show that, responsive to the free preview, as
22 people watch the free preview, they make decisions
23 about whether or not they're going to want to watch
24 the whole program beyond what's offered to them
25 without cost.

1 And so -- and in this particular
2 example, it's showing that even towards the very
3 end of the program, there can still be a relatively
4 lower number of people who make the decision to
5 watch it. But it doesn't actually show it going to
6 zero.

7 Q. And those decisions -- I think the
8 word you used was "correlate" with the aggregate
9 number of client requests that are sent to the
10 server in the system, right?

11 A. It will not be the claimed request as
12 in the challenged claim, but, yes, there will be --
13 there will be requests in the aggregate sent. But
14 for any one person, they're just going to have a
15 single client.

16 But, again, this is a graph
17 illustrating kind of the aggregate behavior of
18 the -- over many users.

19 MR. SARWAR: Okay. I think it -- have we
20 been going for an hour?

21 I'm sorry. I'm not sure if anyone else
22 has been keeping track of the time.

23 Probably, right?

24 MR. NOROOZI: We've been going for,
25 I think, about an hour and 20 minutes or so.

1 MR. SARWAR: Okay. Apologies for that.

2 Would you like to take a break?

3 THE WITNESS: It's fine with me.

4 MR. NOROOZI: Yeah. Let's take a break.

5 (Recess taken, 11:32 a.m. to

6 11:41 a.m.)

7 BY MR. SARWAR:

8 Q. Let's turn to Figure 7B of Peterka.

9 All right. In the top half of this
10 figure, we see another plot similar to the one that
11 we see in Figure 7A, correct?

12 A. Yes. I think it's intended to show
13 the same general sort of behavior.

14 Q. All right.

15 And this is the one that Peterka
16 characterizes as the number of requests for a
17 program, and it's plotted over time, correct?

18 A. Well, again, with all the kind of
19 context that I provided before, that's right.

20 Q. Right. Peterka is referring to it as
21 a request for a program, right?

22 A. Well, Peterka -- the vertical axis is
23 number of requests. But, again, it has to be
24 understood in the context of what and how
25 I explained it before.

1 Q. Right. And as with Figure 7A, the
2 plot shows that, you know, during the free preview,
3 the number of requests or what Peterka calls the
4 number of requests increases, correct?

5 A. Again, that's exactly the same
6 question that was asked with respect to 7A, so my
7 answer is the same.

8 Q. Okay. And the number of requests
9 keeps increasing through the free preview period
10 into the program duration itself, correct?

11 A. Again, as I clarified last time, you
12 know, the number of requests-per-unit time that
13 will be made, you know, as a result of the
14 collective behavior of people on the network, it
15 increases until the end of the free preview period,
16 and then it continues to increase briefly after
17 that, and then it begins to decline.

18 Q. And I guess, just like in Figure 7A,
19 the only point on the plot in Figure 7B where there
20 have been no requests for the program is at the
21 beginning of the free preview period, right?

22 A. Well, at the very beginning they
23 haven't even seen the free preview. It takes
24 people a certain amount of time to see at least a
25 portion of the preview and decide they want to

1 watch it.

2 So that's why it starts, you know,
3 basically at zero.

4 Q. Right. And it's not zero anywhere
5 else on this plot, right?

6 A. This particular plot does not hit zero
7 anywhere but at the very left end.

8 Q. Okay. So let's go back to Figure 7A.

9 At the bottom of Figure 7A, there are
10 double-headed arrows with labels "Content Key 0,"
11 Content Key 1," and "Content Key 2," correct?

12 A. That's correct.

13 Q. And the bottom of Figure 7A is showing
14 the distribution of Content
15 Keys 0, 1, and 2, correct?

16 A. I don't know if I would say it's
17 showing the distribution. I think it's showing the
18 periods of time where the program is encrypted, or
19 the content is encrypted with the keys shown there.

20 Q. Okay. Let's turn to Peterka
21 paragraph 92.

22 A. Okay.

23 Q. Do you see that Peterka there says:

24 "At the bottom of Figure 7A, the
25 distribution of Content Keys 0, 1,

1 and 2 is shown"?

2 A. Yes.

3 Q. All right.

4 Based on that statement, do you
5 disagree that at the bottom of Figure 7A,
6 distribution of Content Keys 0, 1, and 2 is shown?

7 A. I think what they're saying there is
8 that -- where each key is used in the program.

9 Q. So you do disagree with the statement
10 that, at the bottom of Figure 7A, the distribution
11 of content keys is shown?

12 A. No. I'm not saying Peterka doesn't
13 say what it says. I'm saying what I believe it
14 means -- what I believe someone understanding
15 that -- in other words, if you look at Content
16 Key 2 in this figure, you can't just look at the
17 figure and know, for example, exactly when the
18 client received Content Key 2, other than it was
19 hopefully before the start of that period of time.

20 It doesn't talk -- and you can't look
21 at this figure and say, for example, what other
22 kind of key it might have been wrapped in. So it
23 doesn't say that.

24 As I read this figure, it's showing
25 when, which time periods in the program are

1 decrypted with which particular Content Key. And
2 that's a reasonable use of the word "distribution"
3 as well.

4 So I'm not contradicting what Peterka
5 says. I'm expressing what I believe it's conveying
6 by using that term.

7 Q. What does "distributing" mean to you?

8 A. Well, again, it can have -- it can
9 have multiple meanings. If -- you know, if I just
10 talk about, you know, one way that you can talk
11 about distribution is the act of sort of conveying,
12 you know, conveying a key, for example, to a client
13 that didn't previously have it. That's -- in fact,
14 that is a use that Peterka -- that Peterka has.

15 But another alternative and different
16 way of distribution is saying how are the -- how
17 are the keys distributed over time in terms of the
18 content that they decrypt.

19 That's another perfectly reasonable
20 and, in fact, common use of a word like
21 "distribution."

22 Q. Okay. So what do you think the bottom
23 of Figure 7A is showing?

24 A. Just looking at the figure, what it
25 appears to me to be indicating is that, for

1 example, Content Key 0 is used to decrypt the
2 content during the free preview. And then
3 subsequent to that, Content Key 1 is used. And
4 subsequent to that, Content Key 2 is used.

5 So, for example, I know from this
6 figure that if I tried to use Content Key 0 to view
7 the last 10 percent of the program, that wouldn't
8 work because the relevant key for that portion of
9 the program would be Content Key 2, not Content
10 Key 0.

11 Q. And those arrows there, how is it
12 showing that Content Key 0, 1, and 2, are being
13 distributed?

14 A. Well, it shows that they're -- this
15 shows the time -- this shows the time span over
16 which Content Key 0 is appropriate or the right key
17 to use to decrypt the content. And likewise for
18 Content Key 1 and Content Key 2.

19 Q. You keep using the word "use" and not
20 using the word "distribute."

21 I'm trying to focus in on how
22 Peterka's statement that -- at the bottom of
23 Figure 7A, the distribution of Content Keys 0, 1,
24 and 2, squares with your answer that what Figure 7A
25 is showing is when content keys are used for

1 decryption.

2 A. I guess I'm not fully understanding --
3 understanding the question.

4 Q. Okay. Does --

5 A. I understand the question, I just --
6 to me, that's how -- that's how I read -- that's
7 how I read -- the time spans shown by the double
8 arrows are the times when the associated content
9 key can be used to decrypt the content.

10 So it's just showing that as time
11 progresses, there are, in this example, three
12 different content keys.

13 If you wanted to -- if you were going
14 to watch the whole thing from the start of the free
15 preview to the end of the program, you would, at
16 different times, need to use three different
17 content keys in order to have a continuous viewing
18 without interruption.

19 Q. Okay. So when Peterka uses
20 "distribute" in paragraph 92 to describe Figure 7A,
21 what Peterka means is use for decryption; is that
22 right?

23 A. Well, again, I'm -- I don't know if I
24 want to use different words, but I guess if you
25 do -- if you simply look at Figure 7A, and you

1 say -- let's take the example of Content Key 2.

2 Could you look at Figure 7A and
3 determine exactly when and through what mechanism
4 the client received Content Key 2?

5 And the answer is, no, other than to
6 conclude that it almost certainly was before the
7 start of the time period when you needed to have it
8 in hand. But it doesn't actually tell you how and
9 when, other than that, and in what manner the key
10 is distributed to the client.

11 It tells you -- what it does tell you
12 though, quite clearly, is the time period
13 associated with each of these content keys.

14 Q. Is Figure 7A showing you when Content
15 Key 0 is distributed?

16 A. Well, I mean, it's related to that in
17 the sense that you know that if Content Key 0 was
18 distributed after the time period when it's useful,
19 that obviously can't be possible. That wouldn't
20 work.

21 So Content Key 0 must be provided at
22 the start of or prior to the start of the free
23 preview.

24 So it does contain information about
25 that, yes. But it's -- but the actual hours are

1 not indicating the time when the content key is
2 received by the client. They're indicating the
3 time period over which the client would use that
4 content key to decrypt the content.

5 Q. Okay. So if a client were to --
6 scratch that.

7 If a key were to be distributed to a
8 client during the middle of the free preview
9 period, would the client be receiving Content
10 Key 0?

11 MR. NOROOZI: Objection.

12 A. That's a very confusing question.

13 BY MR. SARWAR:

14 Q. If a key were distributed to a client
15 during the middle of the free preview period, would
16 that key be Content Key 0?

17 A. You mean, it -- first of all, let me
18 say, does a key -- there's lots of keys in Peterka.

19 So are you talking about a content
20 key?

21 Q. I'm talking about the keys that are
22 described in Figure 7A.

23 So in Figure 7A, if you look at
24 Figure 7A --

25 A. Right.

1 Q. -- and you look at the free preview
2 period.

3 A. Yes.

4 Q. And you see that during the free
5 preview period, there are a number of "requests"
6 for the program, as Peterka uses that term.

7 And underneath it, at the bottom of
8 Figure 7A, it shows Content Key 0. And Peterka
9 describes Figure 7A as showing the distribution of
10 keys, including Content Key 0.

11 My question is: Is Figure 7A showing
12 that during the free preview period, Content Key 0
13 is distributed to clients?

14 A. Well, Content Key 0 is used by
15 clients, but in order for the client to watch --
16 for a client to watch the entirety of the free
17 preview, they would need to be in possession of
18 Content Key 0 at the very start of the free
19 preview, of course.

20 So it would not be -- but they
21 wouldn't be able to watch it if Content Key 0 only
22 showed up halfway through.

23 Now, of course, if they turned on
24 their system halfway through or joined that program
25 or something, in that case, of course, they might

1 perhaps get Content Key 0, you know, in the middle.

2 But this is -- again, this is just
3 illustrating the periods where a particular content
4 key is relevant.

5 Q. So in Figure 7A, if you look at the
6 program duration and you see the double-headed
7 arrows that's labeled "Content Key 1"?

8 A. Yes.

9 Q. If a client were to start viewing the
10 program during the time indicated by those
11 double-headed arrows -- so, in other words, within
12 the Content Key 1 period -- would Content Key 1 be
13 distributed to the client?

14 A. Well, if the client was not previously
15 watching the free preview, and let's suppose it was
16 some kind of event where the free preview had
17 already elapsed and the client shows up in the
18 middle of the period underlined by Content Key 1 --
19 and there's no free preview at that point, but if
20 the client were to say: I want to watch this
21 program even though I've already missed part of it,
22 then they would need to -- there would be a
23 mechanism to receive Content Key 1, which the
24 client would then use until the end of that period
25 indicated by Content Key 1.

1 Q. Okay. And so that mechanism to
2 receive Content Key 1, is that what the bottom of
3 Figure 7A is trying to show?

4 MR. NOROOZI: Objection.

5 A. The bottom of Figure 7A isn't saying
6 anything about mechanisms. It's just illustrating
7 time periods.

8 That's the axis here. The axis is
9 time. All right?

10 So, for example, it doesn't say -- as
11 I've mentioned before, it doesn't say what other
12 key might be used to wrap the content key.

13 And it doesn't -- you wouldn't know by
14 looking at this figure -- again, if you take the
15 example of a client, a user, a person who watches
16 the free preview, and then right after the free
17 preview starts, they say: Hey, I like this
18 program; I'm going to choose to pay for the entire
19 thing.

20 7A tells you that such people do
21 exist, in other words, people who make that
22 decision during the beginning of the time of the
23 free preview.

24 But 7A is silent on when specifically,
25 for example, they would receive Content Key 1 other

1 than that it would be before the start of that
2 period -- or no later than the start of that
3 period.

4 BY MR. SARWAR:

5 Q. So can you explain to me what
6 distribution of Content Key 0, 1, and 2 means in
7 paragraph 92?

8 A. Well, I understand it, again, as this
9 is showing the period that the -- how the use of
10 these keys is distributed over time.

11 And, of course, these keys also need
12 to be distributed to the client.

13 So, again, that's related to the times
14 when they would be used. But it doesn't say the
15 mechanism of how they're actually distributed.

16 Q. Okay. All right. Let's turn to
17 Figure 7B again.

18 Figure 7B shows exemplary distribution
19 of cryptographic keys during portions of the
20 program, right?

21 A. This is an example of different keys,
22 CK0, CK1, CK2, across the time period of the
23 program.

24 Q. Right. And Figure 7B shows the
25 distribution of such keys during portions of the

1 program, correct?

2 A. In the same manner as -- well,
3 actually, it's got more detail than 7A.

4 Q. Okay. And we're using the word
5 "distribution" here.

6 I want to know what you think
7 distribution means in the context of your answer.

8 MR. NOROOZI: Objection, form.

9 A. So -- yeah. So this is -- well,
10 Figure 7B has more information than Figure 7A. So
11 it shows the time periods, how the use of these
12 keys is distributed over the time period. But it
13 also has information about messages used to
14 actually distribute the keys to the client.

15 BY MR. SARWAR:

16 Q. Okay. So you used the word
17 "distribute" in two different ways just there,
18 right?

19 A. Well, I mean, again, I think the word
20 "distribute" has, you know, several different
21 meanings here.

22 But -- so, yeah, I think that's
23 consistent with how Figure 7A and Figure 7B is
24 treating these.

25 Q. Okay. Figure 7B shows some keys being

1 distributed in ECMs, correct?

2 A. There's an ECM for CK0, and there's a
3 separate ECM for CK1, and then another ECM for CK2,
4 for example.

5 Q. And Figure 7B shows some keys being
6 distributed in EMM -- scratch that. I'm going to
7 try it again because I sort of stuttered.

8 Figure 7B shows some keys being
9 distributed in EMMs, correct?

10 A. Not content keys, but keys, yes.

11 Q. Yes. Okay.

12 I think you referenced just now the
13 labels of ECMs at the bottom of -- the bottom left,
14 right?

15 A. Well, not only the bottom left, but
16 yes.

17 Q. Okay. Figure 7B is showing when
18 during portions of the program the ECMs and EMMs
19 are distributed, right?

20 A. It's showing that there can be
21 transmissions of the ECMs-- it's not specific,
22 because it has a range, but there can be ECMs that
23 are distributed in these times containing these
24 keys.

25 Q. So some ECMs are distributed during

1 the free preview, right?

2 A. Well, the ECM containing CK0 is
3 distributed during the free preview period or at
4 the start of it.

5 Q. I apologize. You should finish that
6 answer.

7 A. Or at the start of it.

8 Q. And some ECMs are distributed during
9 the initial key distribution period; is that right?

10 A. Well, there's the ECM for CK1 which
11 can be distributed, but also can be distributed
12 prior to that.

13 Q. Okay. And some EMMs are distributed
14 during the initial key distribution period,
15 correct?

16 A. That's what the figure seems to
17 suggest.

18 Q. And some ECMs are distributed during
19 the program duration, other than the initial key
20 distribution period, right?

21 A. Again, that's what the -- that's what
22 this seems to indicate.

23 Q. And the Figure 7B also indicates this
24 for EMMs, right?

25 A. Well, it's a little less specific, but

1 it just indicates that EMMs containing program keys
2 can be sent during this period.

3 Q. Okay. Do you see the ECM labeled
4 ECM:[CK2]PK?

5 A. Yes.

6 Q. Is that showing an ECM with CK2 that's
7 been encrypted using the PK?

8 A. Yes. That's -- it would be wrapped in
9 the PK.

10 Q. Okay. Is that ECM only conveying the
11 encrypted CK2, or is it conveying both the
12 encrypted CK2 and the PK together?

13 A. I don't recall. I mean, the EMMs look
14 like they're conveying the program key.

15 But, again, I'd have to go back and
16 look at this. I don't recall.

17 Q. Let me direct you to a paragraph to
18 see if it helps you answer the question.

19 Paragraph 122 of Peterka.

20 A. Okay.

21 Q. So after you review that, I can give
22 you the question again.

23 A. Okay. I see that, yes.

24 Q. Okay. I'm not sure if that paragraph
25 does answer this question, but I pose it to you.

1 The ECM in Figure 7B, the one that
2 we've been discussing, which is ECM:[CK2]PK, is
3 that ECM only conveying the encrypted CK2 or is it
4 also conveying the PK?

5 A. I have to say, I don't recall. And I
6 think paragraph 122 gives a couple of different
7 options, right?

8 And it talks about using a unique key,
9 a program key can be unicast to individual clients.
10 But then it also says that it can be multicast to
11 multiple clients.

12 So, yeah, I don't recall -- I don't
13 recall specifically how the program key is
14 distributed. I may have addressed it in my
15 declaration. If it was important to my opinion, I
16 did.

17 Q. I'm going to ask a similar question
18 about the EMMs in Figure 7B.

19 I'd like to know if the -- those EMMs,
20 are they distributing a program key encrypted under
21 a unique key?

22 A. That's what it shows. That's my
23 understanding.

24 Q. Okay. And does that EMM include
25 encrypted PKs along with the unique keys or just

1 the encrypted PK?

2 A. I think I addressed this before in
3 that if you look at paragraph 95, it looks like the
4 unique keys are sort of set up.

5 It says: "The key is unique per
6 viewer and per session."

7 So the client, once the session was
8 established, the client would have its list of
9 unique keys because, again, as this does here,
10 there's one for each caching server.

11 So at least as suggested in
12 paragraph 95, the client already has the unique
13 keys so it knows what they are. And if it receives
14 an EMM containing a program key that's encoded with
15 the unique key for that particular client, then it
16 can decode that key -- decode that message and then
17 obtain the program keys.

18 At least that's what paragraph 95
19 seems to suggest.

20 Q. Okay. And actually, good recall. Now
21 I'm remembering this sort of similar exchange that
22 we had before.

23 Okay. In Figure 7B, do you see the
24 ECM that's labeled ECM:[CK0]FPK?

25 A. Yes.

1 Q. Do you know whether that ECM is only
2 conveying the encrypted CK0, or is it also
3 conveying the FPK is that same ECM?

4 A. I'd have to go -- again, I don't
5 recall off the top of my head. But if it was
6 important to my opinion, I'm sure I addressed it in
7 the declaration.

8 Q. Okay. But that notation, I guess I
9 should ask, that shows an ECM with CK0 that's been
10 encrypted using the FPK, correct?

11 A. Yes. It's been wrapped, you know,
12 using the FPK.

13 And, again, this has been sent to lots
14 of people, right? Because it's not unique to any
15 one -- any one client because everybody has access
16 to the free preview.

17 Q. All right.

18 So do you see the ECM labeled
19 ECM:[CK1]GK?

20 A. Yes.

21 Q. All right. Similar questions, again.

22 Is that showing an ECM with CK1 that's
23 been encrypted using the GK?

24 A. Yes.

25 Q. And --

1 A. That's what the notation seems to
2 indicate.

3 Q. Okay. And do you know whether that
4 ECM is conveying the encrypted CK1 alone or is it
5 also conveying the GK in that same ECM?

6 A. So I think it's conveyed in advance,
7 if you look at paragraph -- let me see. I've just
8 got to search through for a second.

9 So 102, it says, "Clients will get the
10 GK ahead of program events." That's one example.

11 And then there's a citation to 128.

12 Yeah. So 128 says, "Since the group
13 key is distributed ahead of time." So that text
14 conveys that the group key is already known.

15 Q. Okay.

16 A. That's what it seems to suggest.

17 And I may have -- I think I quote this
18 in my declaration. And I may have similar quotes
19 about the distribution of the free program key, but
20 I don't -- I'm not able to recall off the top of my
21 head where those might be.

22 Q. I understand.

23 Figure 7A. I'm sorry for -- let's go
24 back to Peterka Figure 7A.

25 Is Figure 7A showing provisioning

1 anywhere?

2 A. Well, it's not specifically describing
3 the actions that happen in provisioning, but it
4 does indicate a -- it does show a period of time
5 that can be covered by provisioning.

6 So if you look at -- and actually, I'm
7 just realizing as I search here, if you look at
8 paragraph 43 of my declaration, it says:

9 "A free preview key is provided
10 ahead of time during provisioning."

11 So that's the answer to the
12 earlier question that I didn't remember the answer
13 to.

14 Q. Okay. So back to the Figure 7A
15 question.

16 Can you tell me whether Figure 7A is
17 showing provisioning?

18 A. I'm just looking at what -- we need to
19 go look at what Peterka says about provisioning.

20 And I think it's -- provisioning
21 would -- for someone who's going to watch -- let's
22 see.

23 For someone who's going to watch the
24 entirety of the free preview, they would have
25 needed to get -- for example, Figure 7B -- let me

1 go back.

2 Figure 7B shows you need to know the
3 free preview key in order to decrypt CK0.

4 And paragraph 85 says:

5 "The free preview key is provided
6 ahead of time during provisioning."

7 So if you combine those statements,
8 then if you're going to watch the entirety of the
9 free preview, you must have received the free
10 preview key before you start watching -- before the
11 start of the preview, which means the provisioning
12 would be before the start of the time period shown
13 in that graph.

14 But if -- again, if somebody turns on
15 their system or something in the middle of the free
16 preview, you can imagine that there would be some
17 provisioning that occurs right then. And then they
18 can jump in to join the free preview, even though
19 they're late.

20 Q. Okay. Okay. And so you were
21 answering in the context of Figure 7B.

22 Is it the same answer for Figure 7A?

23 A. I mean, again, it's the same -- you
24 know, 7B contains more information.

25 You know, 7A contains less detail

1 than 7B. And so, you know, assuming it's the case
2 that you can only watch the free preview if you've
3 got the free preview key, which is what you need to
4 decrypt and access CK0, then the same answer would
5 apply.

6 Q. Okay. So it seems like Figures 7A and
7 7B don't have any line items in them that
8 illustrate provisioning?

9 A. Again, I'm not sure. It depends on
10 what you mean by, you know, "provisioning."

11 For example, FPK, as I've just
12 mentioned, the text elsewhere says the free program
13 key is provided during provisioning.

14 So 7B, for example, does contain
15 information relevant to what occurred during
16 provisioning, because if you don't have the free
17 program key, you can't watch the free preview.

18 Q. I see.

19 But Figure 7B is showing -- it seems
20 like it's showing -- it has indications of what
21 happened after provisioning. Is that fair?

22 A. Well, again, I mentioned, you know,
23 the case where somebody, you know, turns on their
24 system in the middle of the free preview; then I
25 guess what would happen is you would have the

1 provisioning occur right then. And then they
2 could, like I said before, join the -- join the --
3 join the free preview.

4 But if they are going to watch the
5 free -- again, it depends on whether it's sort of
6 an event that's fixed in time, like a live football
7 game or something, and that is a free preview that
8 once it's gone -- once the time on the clock is
9 passed, you can't get the free preview, or whether
10 it's a broadcast or a program where anybody at any
11 time of the day can start to watch it and get a
12 free preview.

13 So it depends on -- I don't think the
14 figure is specific in that regard.

15 Q. Okay. All right. Let's turn to
16 paragraph 28 of your '178 declaration. That's
17 Exhibit 2010 in the IPR 2025-3 proceeding.

18 A. Okay. I've got to go get that one.

19 Q. And let me check to see if you need a
20 page number for that, actually.

21 A. Which paragraph number did you say?

22 Q. We're in the '178 declaration, and the
23 paragraph is paragraph 28.

24 A. On page 10? There's a paragraph 28 on
25 page 10. I don't know if that's the one that

1 you're talking about.

2 Q. That is the one that I'm talking
3 about.

4 A. Okay.

5 Q. And it's a good clarification because
6 there actually is another paragraph 28 in here.

7 So the one on 10 that goes onto
8 page 11.

9 All right. Here it looks like you're
10 quoting from the patent specification, right?

11 A. Let me just go back to the top of this
12 section. Yes, this is a description of the
13 '178 patent.

14 Q. And the first sentence you quote in
15 paragraph 28 is:

16 "A history of individual content
17 encryption keys and the order in which
18 they were generated is maintained."

19 A. That's right.

20 Q. The second sentence you quote is:

21 "Each content encryption key in
22 the history is assigned a unique
23 identifier, which is referred to
24 herein as the 'content encryption key
25 identifier.'"

1 Is that right?

2 A. That's what the patent says and what
3 I've quoted here.

4 Q. All right.

5 Does the specification of the patent
6 have any description of how long the history is
7 maintained?

8 A. I don't recall, but if it was
9 important, I would have addressed it in the
10 declaration.

11 Q. Okay. Can you take a look at the
12 portions of the specification that you cited to
13 here?

14 This is Column 3 of the patent, the
15 '178 patent.

16 A. Okay.

17 Q. All right.

18 Can you let me know if you see any
19 description of how long the history is maintained?

20 A. I mean, which part of the patent would
21 you like me to review?

22 Q. Oh, Column 3, starting around line 28
23 and the surrounding areas.

24 This is the portion of the patent that
25 you cited for your discussion in paragraph 28 on

1 page 10 of your '178 declaration.

2 A. Yeah. I mean, I've reviewed some of
3 the text in that specific section.

4 Q. Okay. And did you see any description
5 of how long the history is maintained?

6 A. In the five or ten lines, you know,
7 before and after Column 3, line 29, I didn't see a
8 mention of a particular period of time for the
9 history.

10 But, you know, other than there is
11 a -- sort of a -- a -- so, for example, there's an
12 example here which says -- for example, you know,
13 time since the beginning of the livestream could be
14 related to the length of the history. But, you
15 know, it doesn't give an explicit number of minutes
16 or seconds.

17 But I haven't looked at the rest of
18 the declaration -- I'm sorry, the patent with this
19 specific question in mind. So there may be other
20 information that's responsive to your question that
21 I'm not seeing.

22 Q. Okay. Does the patent ever describe
23 where the history is maintained?

24 A. Again, I'm not able to recall off the
25 top of my head. It may, but I can't -- I can't --

1 I haven't memorized it. So I can't tell you off
2 the top of my head.

3 Q. Okay. Are you familiar with the
4 patent's workflow manager?

5 A. I believe I address it somewhere in
6 the -- in my declaration, but not in a lot of
7 detail.

8 Q. Yes. I think you mention it in
9 paragraph -- in your '178 declaration in
10 paragraph 102, and then also in 104.

11 A. Let me go there.

12 Oh, yeah, this has to do with when the
13 key rotation -- yeah. So now this is coming back
14 to me. So, yes, I do address this. And it has to
15 do with the various methods that can require a key
16 rotation.

17 Q. Okay. Is the workflow manager
18 something that's on the client?

19 A. I'd have to go back and look. Again,
20 I don't recall.

21 Let me look at the patent here.

22 So the workflow manager is described
23 in Figure 1, and it's shown as Item 102, which is
24 distinct from the client 110 -- in this figure, at
25 least.

1 Q. Okay. The claims don't recite a
2 workflow manager, right?

3 A. The phrase "workflow manager," I don't
4 recall being in the challenged claims.

5 Q. Okay. Let's turn to paragraph 101 of
6 your '178 declaration.

7 A. Okay.

8 Q. All right.

9 Here, you say:

10 "Importantly, the '178 patent
11 teaches that every key rotation
12 boundary can be defined through two
13 alternative items of information
14 provided to the client: Normal-period
15 based expiration (in which the
16 expiration time assigned to the key is
17 reached), and 'an explicit key change
18 notification' that requires a key
19 change outside the period-based
20 boundary that was otherwise defined."

21 Do you recall that?

22 A. Yeah. I mean, if you -- it looks like
23 you just read from paragraph 101.

24 Q. That's right.

25 Why are you calling these alternative

1 items of information?

2 A. Well, because they're not -- they're
3 distinct in the sense that the key rotation may in
4 some cases occur in a particular instance when the
5 period-based boundary is reached.

6 But in other cases, there can be a
7 notification that instructs -- you know, that
8 requires a key rotate -- that a key be rotated
9 before the period-based boundary is reached.

10 Or, in other words -- yeah, before
11 the -- that the rotation boundary can be at the
12 period-based boundary, in other words, when the
13 timer countdown hits zero, or it can be earlier
14 than that, pursuant to a -- as I've quoted here, an
15 explicit key change notification.

16 And so the -- one of the claim
17 elements of the '178 Claim 1 is -- the reason I'm
18 addressing this is because it relates to, you know,
19 how the system has to be able to handle both of
20 these circumstances without knowing in advance
21 which one will actually be the one that happens in
22 any particular -- for a particular key.

23 Q. Okay. It sounds like you're saying
24 the '178 patent is describing a system where the
25 client needs to identify period-based key rotation

1 boundaries and also early non-period-based key
2 rotation boundaries; is that fair?

3 A. Well, I mean, the -- let me just go
4 to -- hold on a second. Let me find -- yeah. The
5 way I would say it is, the portion of the
6 declaration that I was just discussing -- I need to
7 find it again because I swapped out of it.

8 Sorry. Which paragraph were we in
9 here?

10 Q. I think you're referring to
11 paragraph 105 of the '178 declaration, maybe 104,
12 around there.

13 A. I'm sorry. Is the '178, 003?

14 Q. Yes.

15 A. I think if you read paragraph 105, I
16 think that stands on its own. That's an expression
17 of what I was -- it's loosely related to -- it's
18 another way of saying kind of what I was just
19 saying a moment ago.

20 Q. Okay. There wasn't any reason back in
21 June 2011 to use both normal period-based key
22 rotation and explicit key change notifications, was
23 there?

24 A. Well, I would disagree.

25 In other words, are you saying there's

1 no reason why a system would have needed to do
2 that?

3 Q. Yeah.

4 A. Well, no. I don't agree with that
5 assertion.

6 Q. What reasons were there?

7 A. You're saying why would a system need
8 to --

9 MR. NOROOZI: Excuse me. I'm just going
10 to interpose my objection for a second.

11 Objection, form.

12 A. You're saying why would a system
13 potentially benefit from being -- having a rotation
14 boundary which was not necessarily fixed at a time
15 expiration, but could also occur earlier pursuant
16 to an express key change notification?

17 BY MR. SARWAR:

18 Q. Yeah.

19 A. Yeah, well, because if, for example,
20 the -- there's -- the key got, for example,
21 compromised, and there was, you know, a desire --
22 there was a benefit to causing clients to switch to
23 a different key earlier than they would otherwise
24 have done, there are -- in some circumstances,
25 there can be benefits to that -- that approach.

1 In fact, this is exactly what
2 paragraph -- so if you look at Column 10,
3 line 39 -- I've got to find it again.

4 Yeah. So, for example, Column 10, it
5 talks about -- it says in relation to Figure 3, it
6 talks about to see if a key change signal -- i.e.,
7 a key change was requested outside of any
8 fixed-duration lifespan. This can occur for
9 security reasons as mentioned above.

10 So I take it from that that the
11 security reasons are also mentioned elsewhere.

12 Q. But back in June 2011, in a system
13 where you already had key rotation, and you already
14 had like key expiration times, and the key is
15 compromised, it wouldn't be necessary to replace
16 that key since it's going to be rotated anyway,
17 right?

18 MR. NOROOZI: Objection, form.

19 A. I disagree with that because -- I
20 mean, for example, suppose the key expiration isn't
21 for another 30 minutes and the network provider
22 doesn't want -- you know.

23 Let's say only in theory, only people
24 who have paid for the program, you know, had the
25 key, but somehow it's been put on the internet or

1 something, and they don't want, you know, everybody
2 else -- and anybody in the world, you know, to
3 watch it for free.

4 So they -- there's a very good reason
5 why they might want to say, okay, well, had nothing
6 gone wrong, we would have waited another
7 30 minutes, but something has gone wrong so, you
8 know, 30 seconds from now, we're going to tell you,
9 you need to rotate to a new key.

10 And that's express -- that's, you
11 know -- the '178 patent specifically talks about
12 security reasons. And that would be an example of
13 a security reason.

14 BY MR. SARWAR:

15 Q. So, okay. All right.

16 So a system that already has key
17 rotation in place wouldn't have a way to deal with
18 compromised keys in the situation you just
19 described, I guess; is that right?

20 MR. NOROOZI: Objection.

21 A. That doesn't sound right to me.

22 Again, I just -- I just gave you a
23 circumstance where there would be a way to deal
24 with it, which is that you express -- send an
25 express notification that you're going to rotate

1 the key earlier than you otherwise would have.

2 So that is a way to deal with it. And
3 that's specifically described in the '178 patent.

4 BY MR. SARWAR:

5 Q. Okay. I'm sorry. I think my question
6 was a bit garbled.

7 Basically, you're saying that a system
8 that has key rotation in place doesn't
9 necessarily -- wouldn't necessarily be able to deal
10 with compromised key scenarios for the reasons you
11 stated: A key rotation period of like half an
12 hour, and then you have a key rotation, you have
13 some sort of key compromise and you need to change
14 your key sooner than that.

15 Is that right?

16 A. Again, I'm going to use my words, not
17 yours, because I don't think --

18 Q. That's fair.

19 A. With all due respect, I don't think
20 you've accurately said it.

21 I don't think the fact of key -- of
22 having, you know, fixed-boundary key rotation is
23 itself problematic. It's a question of -- the
24 question is what else might you have in addition to
25 that, right?

1 So it's a more secure system -- a
2 system where you always rotate the keys on
3 time-based boundaries and you can never rotate them
4 any other time is less secure than one where you
5 default to that, but you always have the option of
6 signaling an earlier key rotation, right?

7 So you can sort of have the best of
8 both worlds. You can have the kind of
9 predictability -- with that kind of system, you can
10 have the predictability and kind of mechanized
11 operation of a time-based key rotation while also
12 benefiting from the protections that you get if you
13 have the ability to rotate to cause a boundary to
14 occur earlier than the otherwise scheduled time.

15 And, again, I gave an example of a
16 half hour. Maybe it's a day or maybe it's a week.

17 And, you know, obviously the longer it
18 gets, the more benefit -- the more risk there would
19 be that a key would get compromised.

20 But even if the key rotation is
21 30 seconds, maybe if it gets compromised, you want
22 to rotate it after 2 seconds and not wait those
23 extra 28 seconds. So it applies across all the
24 time scales.

25 Q. Okay. All right.

1 I see that we're sort of getting close
2 to another hour, I think.

3 Is that right, Kayvan?

4 MR. NOROOZI: Yes.

5 MR. SARWAR: So I actually only have like
6 a handful of other questions. And I think I'm then
7 like done.

8 Do you guys want to break now for lunch
9 and then sort of pick that up after lunch? Do you
10 want to break now briefly for 10 minutes and come
11 back and see if I can wrap it up like within
12 20 minutes? I'm open to whatever you guys would
13 like to do.

14 THE WITNESS: I'd rather have a short
15 break.

16 MR. NOROOZI: I'll defer to the witness.
17 So let's take a 10-minute.

18 MR. SARWAR: Okay. See you guys in
19 10 minutes.

20 (Recess taken, 12:41 p.m. to
21 12:51 p.m.)

22 BY MR. SARWAR:

23 Q. Hello again.

24 During the breaks today during our
25 deposition, did you speak to patent owner's

1 counsel?

2 A. No. I have not had any conversation
3 with counsel for patent owner since the deposition
4 started.

5 Q. Understood.

6 Let's turn to paragraph 78 of the '178
7 declaration. This is Exhibit 2010 in IPR 2025-3.

8 A. The '178 declaration.

9 I'm sorry. Which paragraph did you
10 say?

11 Q. Paragraph 78.

12 A. Okay.

13 Q. All right.

14 Do you see that you opined that
15 Suzuki's paragraphs 76 and 77 do not teach
16 transmitting multiple content encryption keys, as
17 recited in the challenged claims; rather, those
18 paragraphs disclose providing key information
19 relating to the key currently in use, key A, and
20 the next key to be used, key B?

21 A. Yes, I see that.

22 Q. Do you recall saying something similar
23 to this for your '313 declaration?

24 A. Yes.

25 Q. I'll represent to you that that was in

1 paragraph 77 of your '313 declaration.

2 A. Okay.

3 Q. All right. Let's turn to Suzuki.

4 I don't think I've given that one to
5 you yet, so let me do that now.

6 Exhibit 1006, Suzuki. It's the same
7 in both proceedings. It should be coming to you
8 now.

9 (Patent Application Publication Number
10 2004-166153, English translation and
11 Japanese, marked as Exhibit 1006.)

12 A. Okay. Yes, I have it.

13 BY MR. SARWAR:

14 Q. This is the Suzuki reference, right?

15 A. Yes.

16 Q. And you reviewed the Suzuki reference
17 in preparing your declaration?

18 A. Yes.

19 Q. Please turn to paragraph 77 of Suzuki.

20 A. Okay.

21 Q. Okay. Do you see that paragraph 77
22 references response message 82?

23 A. Yes, I see -- yes, I see that.

24 Q. Okay. And do you see that
25 paragraph 77 references Suzuki's Figure 5?

1 A. Where is that? Oh, in the next
2 sentence, yeah.

3 Q. All right.

4 Before we turn to Figure 5, have you
5 looked at Figure 5 before today?

6 A. Yes.

7 Q. Okay. Do you remember what Figure 5
8 is?

9 A. I can't --

10 Q. It's okay.

11 A. I haven't memorized each figure for
12 Suzuki, but I reviewed Suzuki, including the
13 figures, so --

14 Q. That's completely understandable.

15 Paragraph 72 of Suzuki -- it's on the
16 same page --

17 A. Okay.

18 Q. Says that Figure 5 is a diagram
19 specifically showing the information in each key
20 information management table and the contents of
21 each packet/request/message, right?

22 A. Yes.

23 Q. And also in paragraph 72 of Suzuki, it
24 says:

25 "In Figure 5, the key currently

1 in use is indicated as key A. The key
2 next to be used is indicated as key B.
3 And their key numbers are indicated as
4 key number A and key number B."

5 Correct?

6 A. That's what it says, yes.

7 Q. Okay. So let's turn to Figure 5.

8 Figure 5 is on -- the translation to
9 Figure 5 is on the 24th page of this PDF.

10 A. Okay.

11 Q. Now, it's small, right? So you're
12 going to have to zoom in onto Figure 5, which is
13 the top left figure.

14 A. Yeah -- no. Oh, I see. The top left
15 before you rotate it, okay.

16 Q. Yes. You'll have to rotate it, right?
17 And let's take a look at response message 82.

18 A. Okay.

19 Q. All right. Response message 82
20 includes key number A, correct?

21 A. That's what it says.

22 Q. Response message 82 includes key A,
23 correct?

24 A. It says that, but I don't -- that
25 doesn't make a lot of sense.

1 That one doesn't make sense. It does
2 say that, but it doesn't make sense.

3 Q. Why doesn't it make sense?

4 A. I've got to look back. Give me a
5 second here to look.

6 My recollection of Suzuki -- I'd have
7 to find it -- is that it describes that the client
8 already has key A at the time key information
9 request 81 is sent. So it doesn't need to get it
10 again.

11 It makes sense that you would get
12 key B, but it doesn't make sense that you would get
13 key A because, in Suzuki, you already have it.

14 Q. Okay. So turning back to Figure 5,
15 you agree with me though that Figure 5 is showing
16 response message 82 is including key A, correct?

17 A. Well, that's what the text in the
18 box -- there's no question that's what the text in
19 the box 82 says.

20 Q. Okay.

21 A. But you also have to read this -- I
22 think it's prudent to read the description of how
23 Suzuki works.

24 And Suzuki is clear that the key
25 information request is sent, you know, at the time

1 when you already have key A and it's going to run
2 out, so you need to get key B.

3 So it makes no sense that the
4 response -- the client doesn't need to be told what
5 key A is because the client already has key A. So
6 that's a problem with this figure in Suzuki.

7 Q. So you're saying the figure is just
8 wrong?

9 A. I mean, I don't want to say wrong or
10 right. Like I said, it doesn't make sense in the
11 sense that it's very clear in Suzuki that the
12 client already is in possession of key A at the
13 time the key information request 81 is sent.

14 So it makes no sense from a design
15 standpoint to send key A in response to a request
16 that could only have been sent when key A was
17 already in the client's possession.

18 So it's not -- it's not at all a --
19 it's an ambiguous and contradictory teaching that
20 doesn't make sense in light of the other
21 description in Suzuki.

22 Q. Okay. And is there -- does Suzuki
23 contemplate the possibility of a client not having
24 key A at the time it sends request 81?

25 A. Well, I mean, I focused on what the

1 petition cited. And the petition cited the
2 paragraphs -- I don't think the petition actually
3 discussed -- I don't think the petition actually
4 discussed the contents of box 82, but I think the
5 petition did cite the paragraphs that you -- at
6 least paragraph 77 that you just referenced.

7 And so I -- my work was to review the
8 petition and provide an opinion in response to
9 that.

10 So I don't believe the petition cited
11 anything else in Suzuki pursuant to your question.
12 There may be, but I don't know off the top of my
13 head.

14 Q. Did you review all of the portions of
15 Suzuki that the petition cited?

16 A. I reviewed the entirety of Suzuki,
17 including the portions that were not cited. But I
18 focused my analysis on reviewing and responding to
19 the specific statements and opinions offered --
20 statements by the petition and opinions offered by
21 the expert relating to the portions of Suzuki that
22 were cited in those documents.

23 Q. Okay. In Figure 5, in response
24 message 82, that includes a key number A, right?

25 A. Same answer I gave before. I mean --

1 Q. Is it yes or no?

2 A. Well, do you want me to -- I mean,
3 again, the full answer to that isn't a simple yes
4 or no. It's contextualized by the fact that it's
5 contradictory in the sense that -- I'll give the
6 answer again.

7 Suzuki makes clear that at the moment
8 of sending the key information request, that's
9 something that occurs when the client is already in
10 possession of key A.

11 And so it makes no sense in a response
12 message to provide to the client key A, which the
13 client already has. It does make sense to send
14 key B to the client.

15 So it's a -- like I said, it doesn't
16 make sense. But I don't dispute that the text says
17 what it says. It's simply just incongruous, given
18 the other disclosures of Suzuki.

19 Q. And does response message 82 include
20 key A?

21 A. It's the same question. I can give
22 you the same answer if you want.

23 Q. No. I asked about key number A
24 before. Now I'm asking about key A.

25 A. Oh, I'm sorry. I answered the

1 question understanding you to have been asking
2 about key A. Sorry.

3 Q. Oh, that's okay. Let's answer the
4 other one.

5 Does response message 82, you know, as
6 shown in Figure 5, include key number A?

7 A. Well, let me just -- because then the
8 record is going to be confusing to everybody
9 because only those of us on this call are going to
10 know that we switched the answers.

11 So I'm just saying, to make it clear,
12 for both key number A and key A, that's information
13 that is in possession already at the client, is
14 known to the client, is available to the client at
15 the time key information request 81 is sent.

16 And so it doesn't make sense to have
17 in the response key number A and key A and
18 remaining validity time because that information
19 was already at the client. It doesn't make sense.

20 That said, I certainly see the text
21 that is written in box 82. But it simply doesn't
22 make sense given the other disclosures of Suzuki.

23 And by the way, the more logical,
24 sensible way is you -- Suzuki seems to basically
25 generally be saying, notwithstanding what's in 82,

1 that you send the request to get the new key
2 information that you don't already have, not
3 with -- but the box 82 says what it says.

4 Q. Okay. And response message 82 in
5 Figure 5 includes key number B, correct?

6 A. It does, yes.

7 Q. And it includes key B, correct?

8 A. That's true.

9 MR. SARWAR: All right.

10 Nothing further from me.

11 ---

12 EXAMINATION

13 BY MR. NOROOZI:

14 Q. Dr. Villasenor, take a look at
15 paragraph 78 of your '178 declaration which you
16 were just discussing.

17 Do you have in front of you?

18 A. I do.

19 Q. You were asked to address your
20 statement that you disagree with the petition at
21 page 22 and that Suzuki's paragraph 76 and 77 do
22 not teach transmitting multiple content encryption
23 keys as recited in the challenged claims; is that
24 right?

25 A. Yes, that's right.

1 Q. Did anything that you just reviewed in
2 Suzuki or discussed with counsel for petitioner
3 change your opinions with respect to paragraph 78,
4 or do you have anything further to say about your
5 opinions in paragraph 78?

6 A. No.

7 Q. Do you believe that your statement in
8 paragraph 78 is consistent with Suzuki and with
9 what is stated in the petition?

10 A. I think my statement -- I'm sorry.
11 I'm not sure -- I think my statement is accurate
12 with respect to Suzuki.

13 So, for example, I say:

14 "Suzuki's paragraphs 76 and 77 do
15 not teach transmitting multiple
16 'content encryption keys' as recited
17 in the challenged claims."

18 The challenged claims, of course, are
19 directed towards responses to playback or media
20 playback requests.

21 So I stand by that statement when it's
22 read with proper, full context.

23 Q. Can you elaborate on what you mean by
24 that, why the issue of playback request is
25 relevant?

1 A. Well, the challenged claims require --
2 in fact, if you -- if I go to them...

3 The challenged claims specifically
4 require that the -- there has to be, for example,
5 in the '178 patent, a media playback request.

6 And then the response will include,
7 plural, content encryption keys, plural.

8 And with respect to the '313 patent,
9 there has to be a request for live media playback.
10 And the response, again, will have content
11 encryption keys, plural.

12 So that is not what is disclosed in
13 Suzuki.

14 Q. And is that what you were conveying in
15 your paragraph 78?

16 A. Among other things, yes.

17 MR. NOROOZI: No further questions.

18 MR. SARWAR: Nothing further from me.

19 (Proceeding concluded.)

20 ---

21

22

23

24

25

1 C E R T I F I C A T E

2

3 I, ANNE E. VOSBURGH, Certified
4 Shorthand Reporter, Registered Professional
5 Reporter, Certified Realtime Reporter hereby
6 certify:

7 That JOHN VILLASENOR, PH.D., via
8 remote videoconference, agreed to testify
9 truthfully, under penalty of perjury; that all
10 counsel stipulated to the remote swearing and waive
11 objection, notwithstanding the location of reporter
12 or witness during testimony; and that this
13 transcript is a true and correct record of
14 testimony given.

15 I further certify that I am not
16 related to any of the parties and am in no way
17 financially interested in the outcome of this
18 matter.

19

20

Anne E. Vosburgh

21

ANNE E. VOSBURGH, CSR, RPR, CRR

22

Notary Public - Exp. July 20, 2029

23

24

25

1 E R R A T A

2 Deponent: JOHN VILLASENOR, PH.D., August 21, 2025

3 Reason Codes:

4 1. To clarify testimony.

5 2. To change/correct testimony.

6 3. Transcription error

7

8	Page/Line	Now Reads	Should Read	Reason
---	-----------	-----------	-------------	--------

9. _____ / _____

10 _____ / _____

11 _____ / _____ _____ _____ _____

12 _____ / _____ _____ _____ _____

13 /

14. _____ / _____

15 _____ / _____ _____ _____ _____

16 _____ / _____ _____ _____ _____

17 _____ / _____ _____ _____ _____

18 _____ / _____ _____ _____

19 / _____

20 _____ / _____ _____ _____ _____

21 / _____ _____ _____

22

23 _____

24 Signature of Deponent Date

25



Magna

Key Contacts

Schedule a Deposition:

Scheduling@MagnaLS.com | 866-624-6221

Order a Transcript:

CustomerService@MagnaLS.com | 866-624-6221

General Billing Inquiries:

ARTeam@MagnaLS.com | 866-624-6221

Scheduling Operations Manager:

Patricia Gondor (E: PGondor@MagnaLS.com | C: 215-221-9566)

Customer Care:

Cari Hartley (E: CHartley@MagnaLS.com | C: 843-814-0841)

Director of Production Services:

Ron Hickman (E: RHickman@MagnaLS.com | C: 215-982-0810)

National Director of Discovery Support Services:

Carmella Mazza (E: CMazza@MagnaLS.com | C: 856-495-1920)

Billing Manager:

Maria Capetola (E: MCapetola@MagnaLS.com | C: 215-292-9603)

Director of Sales Operations:

Kristina Moukina (E: KMoukina@MagnaLS.com | C: 215-796-5028)

A			
AB 1:4,14 ability 140:13 able 14:6 24:19 61:1 81:15 97:13 113:21 124:20 131:24 134:19 139:9 about 7:9 10:20 13:14 14:7 14:9,13 20:9 25:25 27:16 33:23 39:6 40:11,15,16 41:23 42:25 54:16 56:6 65:10,11,14 66:12 66:16 67:14 70:6,11 72:12 74:4,11 75:6 76:2,21 77:9 85:18 86:5 88:1 89:15 91:16 93:21,25 94:5 95:14,21 102:23 103:25 108:10,11 111:24 112:19,21 115:6 117:13 121:8 121:18 124:19 125:19 129:1,3 137:5,6 138:11 149:23,24 150:2 152:4 above 57:21 137:9 access 123:15 127:4 accidentally 71:21 accurate 152:11 accurately 96:13 139:20 acknowledge 2:13 acknowledged 53:1	across 99:23 116:22 140:23 act 10:11 32:22 108:11 acting 47:10 actions 84:12 125:3 activity 91:5 actual 111:25 actually 13:9 25:4 28:1 60:10 60:10 66:6 67:3,11 67:25 75:8 79:11 85:1,2,15 103:5 111:8 116:15 117:3 117:14 122:20 125:6 128:20 129:6 134:21 141:5 148:2 148:3 add 23:11 69:16 addition 81:25 139:24 additional 21:11,14 address 13:12,15 18:5 24:2 59:10,12 99:5 132:5 132:14 151:19 addressed 26:19 33:21 41:5 64:3 121:14 122:2 123:6 130:9 addresses 77:18 addressing 37:2 134:18 administered 2:18 admit 28:20 advance 124:6 134:20	after 10:18 42:23 43:5,12 43:18 44:4,8 45:1 49:20 67:13 82:22 101:10 105:16 111:18 115:16 120:21 127:21 131:7 140:22 141:9 again 16:20 18:20 21:5 22:21 23:16,21 24:22 26:17,24 30:7 32:20 33:3,8,14 34:3,10 35:2 37:14 46:15 47:7,12,17 53:20,22 56:10 57:15 58:20,21,24 61:13,19 64:23 65:20 69:4,23 70:13 70:15 71:20 75:25 79:5,7 80:7,15 81:3 83:16,25 85:22 89:22 91:2 93:22 94:10 96:4 97:1,11 97:22 98:10 99:24 100:8,18 101:4,11 101:25 103:16 104:18,23 105:5,11 108:8 110:23 114:2 115:14 116:8,13,17 117:19 118:7 119:21 120:15,22 122:9 123:4,13,21 126:14,23 127:9,22 128:5 131:24 132:19 135:7 137:3 138:22 139:16 140:15 141:23 146:10 149:3,6 153:10 aggregate 88:14,18 90:7 98:15 100:2,3,5 103:8,13 103:17 aggregated 100:2	agnostic 33:4,6 ago 25:7 27:3 135:19 agree 2:13 32:24 37:11,15 37:18 38:1 68:11 98:16 136:4 146:15 agreed 6:12 154:8 agreeing 38:4 agreement 6:10 ahead 46:8 64:7 65:18 66:1 66:18 67:17,22 69:7 69:25 70:18 84:14 124:10,13 125:10 126:6 all 2:12 7:5,16 8:13,13 9:8 10:4,13,22 11:21 12:20 14:22 15:1,8,19,25 16:7 17:9 19:9,22 21:6 22:5,18 24:5 27:11 28:8 30:1 34:20 35:7 38:7 39:15 42:7 43:16 44:23 45:23 46:8,12 47:4 48:20 49:8,24 50:25 51:5,11,18,22 53:12 55:6,21 56:19 57:5 57:8 58:24 60:5 64:23 76:3,8,9,18 77:5 80:22 81:19 82:24 86:8 87:1 94:17 102:5 104:9 104:14,18 107:3 112:17 115:9 116:16 123:17,21 128:15 129:9 130:4 130:17 133:8 138:15 139:19 140:23,25 142:13

143:3 144:3 145:19 147:18 148:14 151:9 154:9 allegation 53:23 alleged 53:5 54:4 allegedly 53:24 59:4,17 allow 49:12 allowed 8:3 almost 111:6 alone 124:4 along 121:25 already 11:19,19 45:24 48:2 79:16 81:14 83:2 99:4 114:17,21 122:12 124:14 137:13,13 138:16 146:8,13 147:1,5,12 147:17 149:9,13 150:13,19 151:2 also 10:15 11:6 72:12 73:11 75:2 77:1 79:18 83:12 94:14 94:20 116:11 117:13 119:11,23 121:4,10 123:2 124:5 132:10 135:1 136:15 137:11 140:11 144:23 146:21 alternative 108:15 133:13,25 alternatives 79:21 although 23:11 96:19 always	140:2,5 am 7:3 21:23 84:5 154:15,16 ambiguous 147:19 among 18:20 22:4 35:12,16 35:21 36:16 40:25 42:6 77:12 153:16 amount 91:4 105:24 an 2:17 20:5 21:11 24:3 25:4 29:19 30:8 38:14,24 39:7,11 41:7 47:9,11 50:18 61:13 63:1,3 64:8 65:3 71:1,7,9,14 72:15 74:19,23 76:24 78:17,19,25 81:13 84:5,6,7 85:23 89:3 92:6 96:11 100:11 103:20,25 116:21 118:2 120:6 122:14 123:9,22 128:6 131:11,15 133:17 134:14 135:16 136:16 138:12,24 139:11 140:6,15 147:19 148:8 analogy 100:18 analysis 44:18 148:18 analyze 44:17 Angeles 3:18 33:6 angle 90:5 Anne 1:24 2:7 154:3,21 another 50:19 74:5 95:18	104:10 108:15,19 118:3 129:6 135:18 137:21 138:6 141:2 answer 7:22,24 8:1,11 23:21 25:14 36:17,18,20 44:21 47:8 71:12 72:21 76:8 84:5,6,7 89:12,18 90:1 93:13 96:11 97:1,6 105:7 109:24 111:5 117:7 119:6 120:18,25 125:11,12 126:22 127:4 148:25 149:3 149:6,22 150:3 answered 149:25 answering 14:17 126:21 answers 7:19,20 91:20 150:10 antecedent 38:24,25 39:7 any 8:10,12,17,20 9:19 11:22 12:11,16 13:12,13,14 15:22 17:25 18:18 23:24 25:24 29:5,23 31:2 33:1 36:8 47:5 61:25 72:1 93:5,25 96:23 97:8 98:15 99:15,15,24,24,25 103:14 123:14,15 127:7 128:10 130:6 130:18 131:4 134:22 135:20 137:7 140:4 142:2 154:16 anybody 128:10 138:2 anyone 61:2 103:21 anything 7:12 9:9 20:9 33:11 33:16 34:5,6,24	36:25 47:15 62:15 92:7 93:25 95:14 115:6 148:11 152:1 152:4 anyway 137:16 anywhere 31:23 93:23 101:16 102:8 106:4,7 125:1 Apologies 15:20 43:24 104:1 apologize 98:21 119:5 APPEAL 1:1,11 appear 101:23 APPEARANCES 3:1 appears 15:4 16:10 17:13 22:16 46:4 80:20 101:10 102:12,14 108:25 Application 4:22 5:3 55:8 143:9 applies 43:25 44:7 140:23 apply 77:13,14 127:5 applying 42:18 43:11 44:25 49:19 appreciate 96:16 approach 136:25 appropriate 14:17 18:12 47:11 109:16 approximately 2:4 22:23 area 18:22 23:3 50:19 areas 22:24,24 23:12
--	--	--	---

130:23 aren't 59:12 argument 58:25 around 130:22 135:12 arrows 106:10 109:11 110:8 114:7,11 art 11:14,14 20:2,7,8,11 20:15 21:4,13 43:25 44:6,11,12 63:2 articulated 58:25 aside 102:8 ask 7:18 8:17 9:15 15:18 21:8 24:15,17 25:1 25:4 38:24 41:14 65:9,10,10,11 82:2 121:17 123:9 asked 8:2 38:17 43:14 50:10 94:7 95:18 96:1 105:6 149:23 151:19 asking 12:15 29:21 39:21 40:5,11,16 41:11 43:8 52:20 57:11 64:19 71:10 85:18 91:16 149:24 150:1 aspect 20:5 assertion 136:5 assigned 129:22 133:16 associated 87:10 89:2 91:5 110:8 111:13 assume 9:11 10:25	assuming 127:1 Atlantic 3:5 attorney 7:21,24 attorneys 2:12 attribute 67:15 attributes 34:19 August 1:21 2:3 6:6 155:2 authentication 61:7 63:11 automatically 15:21 63:5 available 150:14 Avenue 3:5 aware 32:10 48:6 96:23 away 50:1 74:13 axis 84:5 85:9 86:7,9,11 86:12 104:22 115:8 115:8 a.m 1:21 2:4 6:6 51:2,3 104:5,6 B B 3:20 74:16,21 75:3 75:19,22 142:20 145:2,4 146:12 147:2 149:14 151:5 151:7 back 26:25 35:3 40:23,24 41:16 47:22 57:8 62:1 63:12 70:4 90:6 95:25 106:8	120:15 124:24 125:14 126:1 129:11 132:13,19 135:20 137:12 141:11 146:4,14 bars 82:12 base 88:15,19 based 18:20 53:23 90:22 107:4 133:15 basically 20:4 74:4,6,15 81:13 82:13 83:17 95:19 99:16 106:3 139:7 150:24 basis 2:14 38:24,25 39:8 because 16:21 29:8 31:20 35:17,22 41:3,3 43:10,14,22 48:1,1 48:6,15 52:22 72:11 77:10 82:12 83:11 87:24 90:16 91:19 109:8 118:7,22 122:9 123:14,15 127:16 129:5 134:2 134:18 135:7 136:19 137:19 139:17 146:13 147:5 150:7,9,18 been 6:9 7:6 11:19 21:24 23:21 30:18 50:17 74:25 76:14 82:1 102:16 103:20,22 103:24 105:20 107:22 120:7 121:2 123:9,11,13,23 137:25 147:16 150:1 before 1:1,11 2:6 7:7 8:9,10 21:24 42:19,24 43:5	43:13,18 44:1,7 47:8 49:21 61:25 67:15 68:25 80:8 93:22 96:1 97:23 104:19,25 107:19 111:6 115:11 116:1 122:2,22 126:10,10 126:12 128:2 131:7 134:9,10 144:4,5 145:15 148:25 149:24 beginning 68:9 101:20,24 102:17 105:21,22 115:22 131:13 begins 105:17 behalf 3:3,15 6:18,21 behavior 88:15,19 90:7,22 91:3 98:14 103:17 104:13 105:14 being 10:14 34:17,21 43:1 53:24 59:4 71:13 74:5,14 75:21 90:15 98:9 109:12 117:25 118:5,8 133:4 136:13 believe 13:22 14:17 17:20,21 20:17 43:16 50:13 60:12 78:16 84:6,7 107:13,14 108:5 132:5 148:10 152:7 benefit 136:13,22 140:18 benefiting 140:12 benefits 136:25 besides 35:13 best 7:13 25:14 36:19
--	--	---	---

38:5 100:18 140:7	135:1,2 140:3	117:15 125:5	categories
better	boundary	127:10 136:17	71:2
80:13	42:20 43:12 44:2,5,8	138:14 139:4	category
between	45:2 49:21 133:12	141:22 143:13	32:6,7
50:11 56:22 86:5	133:20 134:5,9,11	148:20,20 149:4	cause
87:17 88:11 89:19	134:12 136:14	150:23 151:13	140:13
91:5 100:15	140:13	152:21,23	causing
beyond	box		136:22
102:24	146:18,19 148:4	C	century
big	150:21 151:3	C	18:22 24:25
57:15	break	3:22 154:1,1	certain
bit	8:8,9,11 50:20,22,22	CA	32:5 34:19 47:19
31:9 37:16 45:21	104:2,4 141:8,10,15	3:18	82:14 86:17 105:24
57:10 74:10 139:6	breaks	caching	certainly
bits	8:7 141:24	122:10	17:20 33:4 40:1,6
47:19	brief	calculation	41:23,23 76:4,4
blanket	96:18	19:20	87:5 95:16 111:6
76:1	briefly	call	150:20
block	101:10 105:16	16:20 77:2 150:9	certainty
66:3 67:24 68:19,21	141:10	called	72:21
68:24,24 69:11,14	broadcast	6:9 60:7	Certified
70:2,3,6,12,16	128:10	calling	2:8,10,10 154:3,5
blocks	broader	133:25	certify
69:20	10:16 56:25 59:14	calls	154:6,15
Blvd	bunch	105:3	challenge
3:17	90:7	can't	96:14
BOARD	button	21:5,6 62:3,4 96:13	challenged
1:1,11	87:9 88:24	96:19 97:4 107:16	15:14 16:19 52:2
body	by	107:20 111:19	53:7 59:18 84:9
25:3	1:23 2:7,18 3:8,10,12	127:17 128:9	85:16 91:24,24
bold	3:20,22 4:4,5 7:1,23	131:25,25 132:1	103:12 133:4
54:22 56:20	13:1,24 16:4 17:8	144:9	142:17 151:23
Boston	17:16 18:10,16	capable	152:17,18 153:1,3
3:6	25:16,23 29:7 30:2	47:10	challenges
both	30:5 33:3 38:16	card	17:11 46:2
11:1 13:20 28:2 39:5	40:4,5,10 45:8,22	94:21	chance
55:12 59:15 63:16	46:6 51:4 55:11	careful	85:12
80:2 96:11 120:11	62:7 66:10 69:18	57:3 81:8	change
134:19 135:21	71:3 72:5,22 74:25	carefully	133:17,19 134:15
140:8 143:7 150:12	75:12 77:3 78:2	72:20 91:18,19	135:22 136:16
bottom	85:10,17 87:3,4,19	case	137:6,7 139:13
77:19,20 106:9,13,24	91:1,17 92:20 96:22	1:6,16 40:15 76:5	152:3
107:5,10 108:22	104:7 108:6 110:7	77:14 98:24 113:25	change/correct
109:22 113:7 115:2	112:2,13 113:14	127:1,23	155:5
115:5 118:13,13,15	114:10,18,25	cases	changing
boundaries	115:13 116:4	48:20 76:3 134:4,6	95:3

characterize 83:6 84:2 85:19 86:16 characterizes 84:20 86:2 104:16 chat 9:4 13:5 45:12,15 check 128:19 checked 28:20 choose 81:22 115:18 circumstance 138:23 circumstances 134:20 136:24 citation 52:24 67:12,14,19,25 124:11 citations 68:16 cite 18:1,18 19:2 52:11 52:17,19 54:25 66:24 148:5 cited 11:15,19 17:20,22 18:5,7,12 52:20 56:4 67:20 70:9 130:12,25 148:1,1 148:10,15,17,22 CK0 64:14 116:22 118:2 119:2 123:2,9 126:3 127:4 CK0 FPK 122:24 CK1 116:22 118:3 119:10 123:22 124:4 CK1 GK 123:19 CK2 116:22 118:3 120:6 120:11,12 121:3	CK2 PK 120:4 121:2 claim 28:9,12,12,14 29:20 30:11 32:6,8,25 34:6,9,13 35:20 36:10,19,20 37:15 37:19,23,25 38:2 39:8 41:5 42:11,21 42:22,23 43:4,11,16 43:23 44:24 46:15 47:13 48:21 49:3,14 55:15 59:10 61:1 63:17,18 86:6 87:25 88:6 90:19,23 103:12 134:16,17 claimed 53:6,25 54:4 59:4 61:21 85:15 90:15 90:16 91:23 99:3 103:11 claims 28:11 52:2 53:7 83:12,23 84:9,17,25 85:16 91:24 133:1,4 142:17 151:23 152:17,18 153:1,3 clarification 19:23 20:10,25 21:22 89:15 129:5 clarified 105:11 clarify 13:10 15:23 58:6,21 155:4 clarifying 20:5 clear 26:17 27:20,23 65:4 146:24 147:11 149:7 150:11 clearer 16:21 57:10 clearly 31:20 70:8 111:12 click	13:8 clients 76:20 77:6 80:18 87:20 88:20,21 99:14 113:13,15 121:9,11 124:9 136:22 client's 147:17 client/consumer 94:12 clock 128:8 clogged 45:16 close 141:1 closed 71:21 Codes 155:3 collective 105:14 collectively 90:11 99:13 Column 130:14,22 131:7 137:2,4 columns 77:1 combine 126:7 come 26:16 141:10 comes 11:12,25 12:9 18:19 40:23,24 67:7 coming 8:6 13:16 14:5 66:24 68:8 132:13 143:7 commencing 2:3 comment 21:9 common 14:6 16:25 108:20	commonly 62:22 communicating 62:19 communication 63:13 88:11 communications 22:24 complete 61:1 completely 28:20 83:21 144:14 completion 82:22 comply 48:20 comport 61:17 composition 66:11 comprehensive 18:8,16 compromise 139:13 compromised 136:21 137:15 138:18 139:10 140:19,21 computer 8:21,22 concept 60:7 concern 65:5 concerned 37:16 84:5 conclude 111:6 concluded 153:19 conditions 8:1 conduct 12:11 conducting 8:16
--	---	---	---

confidence 91:20	57:16	11:5	87:1 89:17 90:11
confidential 8:2	contain 74:8 77:9 90:18 94:5 111:24 127:14	conveyed 76:6,10,10 80:17 124:6	corresponds 88:19
confirm 50:11	contained 36:11 37:10 47:25	conveying 77:12 78:15 108:5,11 108:12 120:10,11 120:14 121:3,4 123:2,3 124:4,5 153:14	corroborates 52:22
conflate 57:3	containing 47:22 118:23 119:2 120:1 122:14	conveys 124:14	cost 102:25
conflated 84:8,25	contains 126:24,25	copies 13:22 24:17	could 24:16 32:4,6 41:8,13 41:14 42:16 48:19 61:2 62:3,22,24 64:14 68:6 74:12 78:16,18 84:24 111:2 128:2 131:13 136:15 147:16
conflation 85:24	contemplate 147:23	core 24:3	counsel 6:11,16 11:6 17:16 46:7 50:17 142:1,3 152:2 154:10
confused 84:24	contents 25:2,3,6 47:12 74:8 144:20 148:4	correct 11:1,2 12:18 15:3,10 15:11 16:9,15 17:12 19:20 22:15,16 23:1 28:10,16,19 29:2,6 30:10,23 31:3,22 32:18 35:11 36:15 37:13 41:20 42:9 43:13 44:9 46:3,13 46:17,22 47:1,3,6 49:1,4,6,10,17,22 56:16 58:7,22 62:20 66:25 67:4 68:15,19 74:24 78:8,13 79:19 80:6,12 84:21 86:10 86:15 99:8,21 100:21 101:2 104:11,17 105:4,10 106:11,12,15 117:1 118:1,9 119:15 123:10 145:5,20,23 146:16 151:5,7 154:13	countdown 134:13
confusing 43:22 48:14 87:24 112:12 150:8	context 63:15 76:12 81:9 83:15 84:8 91:21 92:9 94:9 95:10 96:25 100:1 104:19 104:24 117:7 126:21 152:22	couple 25:12,17 121:6	course 11:12 30:12 41:3 56:11 57:19 81:22 113:19,23,25 116:11 152:18
confusion 15:22	contextualized 149:4	court 7:19	covered 125:5
conjunction 91:11 96:2	contextually 21:12	credit 94:21	CRR 1:24 154:21
connected 62:4 91:7	continue 85:11 86:20,25 87:7	cryptographic 22:2 23:8,15,25 24:12 116:19	cryptographic-based 26:19
connection 39:14 61:6	Continued 5:1	correctly 7:3	cryptography 26:19
consider 36:7	continues 86:17 101:15 105:16	correlate 98:24 103:8	CR-25001522 1:24
consistent 69:21 117:23 152:8	continuing 81:13	correlation 90:2 91:4	CSR
constitutes 10:15 35:18 51:25	continuous 82:13 110:17	correspond	
constraint 34:4	contradicting 108:4		
construct 102:3	contradictory 147:19 149:5		
consult 9:12	control 99:25		
consulting 9:8	conversation 142:2		
consumer 93:15,20,21,25 94:6 94:25,25 95:15,21 99:24	conversations		
consumer's 100:15			
consumes			

154:21 CSR-6804 1:24 cumulative 100:10,17,17 currently 142:19 144:25 curve 81:18 82:7 86:21 90:3,12 101:8 curved 80:25 86:10 88:13 customer 99:15 CV 22:11,15,20,22 24:7 24:20 cybersecurity 22:25 23:3	99:13 103:4 115:22 decisions 85:10 90:11 91:14 98:23 99:11 102:22 103:7 declaration 5:7,10 9:18 10:18,23 11:11,13 12:2 13:19 14:16 17:4,10,14,19 17:23,24 18:1,8,14 19:7 22:7 27:12,17 27:17,18 28:4 42:1 45:5,9 46:1,5,10 50:1,2,3,12 51:8 53:9 54:21 56:4,6,7 56:8,20 57:7,9 58:16,16 59:7,9,20 59:22 60:1 65:15 66:9 72:13,20 73:13 73:16,24 80:14 99:5 121:15 123:7 124:18 125:8 128:16,22 130:10 131:1,18 132:6,9 133:6 135:6,11 142:7,8,23 143:1,17 151:15 declarations 10:12,24 13:12,20 14:8 27:20 28:2 50:11 declares 2:19 decline 101:14,15 105:17 decode 122:16,16 decrypt 75:13 108:18 109:1 109:17 110:9 112:4 126:3 127:4 decrypted 108:1 decryption 22:3 23:9,19 24:1,13 42:19 43:12 44:1,7	45:1 49:20 110:1,21 default 140:5 defer 141:16 defined 35:23 133:12,20 definition 20:10,14,19 21:3,7 delivered 78:18 density 82:9 depending 89:2 depends 20:13 33:3 40:3,4 127:9 128:5,13 Deponent 155:2,24 deposed 7:6 deposition 1:19 2:5,13,16 6:4 8:17,19 10:6,21 12:3,16 13:18 52:6 141:25 142:3 depositions 7:15 describe 21:1 74:10 110:20 131:22 described 26:22 43:1 44:14 57:7 62:7 63:22 70:21 71:5 80:8 112:22 132:22 138:19 139:3 describes 62:12 113:9 146:7 describing 26:18 125:2 134:24 description 4:17 72:19 129:12 130:6,19 131:4 146:22 147:21	design 147:14 designated 30:19 designations 28:15,22 46:16 desire 84:14 85:11 86:19,25 91:11 96:2,5 97:10 100:12 136:21 desires 89:8,20 92:1,4 93:16 97:20 detail 117:3 126:25 132:7 determine 39:2 111:3 diagram 144:18 did 10:5 11:9,22 12:11 12:16 13:9 17:14,18 17:24,25 18:18 37:22 42:22 46:5 52:11 56:20 68:25 89:25 121:16 128:21 131:4 141:25 142:9 148:5 148:14 152:1 didn't 19:2 36:8 38:13 61:13 97:23,23 101:5 108:13 125:12 131:7 difference 20:22 differences 59:11 different 20:9,20,21,24 21:2,6 21:8 30:6 31:18,21 32:7 37:23,24 76:9 76:21,25 77:1,1,2 77:11,12,13,15 79:24,25,25 80:11 82:6 85:7 87:12
D			
D 4:1 dangerous 83:13 data 22:3 23:9,20 24:1,13 date 21:24 155:24 day 128:11 140:16 days 10:10 deal 138:17,23 139:2,9 decades 25:7 decide 81:25 82:20 86:18,24 87:6 101:13 105:25 decided 18:4 deciding 84:13,14 decision 82:6,8 90:14 99:12			

89:6 95:6 108:15 110:12,16,16,24 116:21 117:17,20 121:6 136:23 digital 22:3 23:9,20 24:1,13 DIMARCO 3:12 direct 51:18 91:13 120:17 directed 152:19 direction 17:16 46:7 directions 63:16 directly 40:21 52:22 102:2 disagree 107:5,9 135:24 137:19 151:20 disagreeing 38:4 43:10 disagreement 13:14 disclose 142:18 disclosed 77:3 153:12 discloses 54:2 disclosing 85:2,3,6 disclosure 69:9 70:8 94:5 95:21 95:24 disclosures 149:18 150:22 discrete 82:12 discuss 8:5 9:5 23:15,19 26:1 discussed 18:13 95:14 98:9 99:4 148:3,4 152:2 discusses	56:18 94:8 95:9 98:5 discussing 68:14,17 76:15 94:14 94:15,18,19 95:2 121:2 135:6 151:16 discussion 65:6 130:25 discussions 10:10 dispute 19:17 86:4 149:16 distinct 83:21 85:15 132:24 134:3 distinction 65:3,4 84:18 86:5 87:17 distinguish 56:21 64:24 89:18 distinguishable 97:25 distinguished 85:14 distribute 64:12,14 77:17 78:11 80:11 109:20 110:20 117:14,17 117:20 distributed 76:19 77:6 79:9 80:18 82:18 108:17 109:13 111:10,15 111:18 112:7,14 113:13 114:13 116:10,12,15 117:12 118:1,6,9,19 118:23,25 119:3,8 119:11,11,13,18 121:14 124:13 distributing 78:1,3,12 108:7 121:20 distribution 82:8 106:14,17,25 107:6,10 108:2,11 108:16,21 109:23	113:9 116:6,18,25 117:5,7 119:9,14,20 124:19 document 18:18 22:8,13 50:14 93:10 documents 9:4,9,20 11:18,23 12:12 17:18,21,22 17:25 18:7,9,12 19:1 148:22 does 29:4 30:3 31:22 32:16,25 33:11,13 33:16,18 34:24 36:24 37:1,5,7 38:8 38:10 39:4,16,22 40:18 41:7 42:11 46:24 47:8,14,16,24 48:11,15 49:9 55:14 62:14,23 63:5,6,25 70:6 75:2 76:1 77:8 77:16,25 86:25 90:25 91:10 94:4,4 95:20,24 96:1,6 101:23 102:5,6 106:6 108:7 110:4 111:11,24 112:18 120:25 121:24 122:9 125:4,4 127:14 130:5 131:22 146:1 147:22 149:13,19 150:5 151:6 doesn't 19:3 32:2,9,9,19 34:13,14 35:25 47:2 47:5,18 48:6 68:18 70:23 79:7 90:15,18 103:5 107:12,20,23 111:8 115:10,11,13 116:14 131:15 137:22 138:21 139:8 145:25 146:1 146:2,3,9,12 147:4 147:10,20 149:15	150:16,19,21 doing 10:12 14:20 61:6 done 7:15 10:8 30:5 136:24 141:7 don't 7:10 8:20 9:19 11:3,7 12:1,5 13:4,13 14:8 18:2 19:3 23:4,10 23:13,16 25:16 27:4 29:25 30:7 42:15 44:20 45:11 53:13 55:2,15 59:19 60:25 63:17 67:9 68:2,12 68:20,23,23,24 69:2 70:22 75:8 77:7,13 79:4,7,9,9 86:4 91:20 92:15,23,24 93:12 95:15 96:10 96:12,18,19 106:16 110:23 120:13,16 121:5,12,12 123:4 124:20 127:7,16 128:13,25 130:8 132:20 133:1,3 136:4 138:1 139:17 139:19,21 143:4 145:24 147:9 148:2 148:3,10,12 149:16 151:2 double 110:7 double-headed 106:10 114:6,11 down 10:17 54:9 56:12 81:3 86:22 89:16 download 9:5 13:8,9 16:5 downloaded 13:2 45:17 dozen 24:16 25:12,17 dozens 7:10
--	---	---	--

Dr 7:2 151:14 dropped 13:21 dropping 9:3 12:21 due 94:17 139:19 duration 98:18 101:1,3 105:10 114:6 119:19 during 61:23 62:9,12,19,24 63:7,8,22,24 64:7 64:17,19 65:18 66:1 66:18,22 67:17,23 69:7 70:1,18 86:13 99:20 100:6 105:2 109:2 112:8,15 113:4,12 114:10 115:22 116:19,25 118:18,25 119:3,8 119:14,18 120:2 125:10 126:6 127:13,15 141:24 141:24 154:12	14:10 15:16 echo 37:7 ECM 71:1,7,9,14,22 72:12 78:19,21,23 118:2,3 118:3 119:2,10 120:3,4,6,10 121:1 121:2,3 122:24,24 123:1,3,9,18,19,22 124:4,5 ECMs 71:3 118:1,13,18,21 118:22,25 119:8,18 either 70:24 85:23 elaborate 152:23 elapsed 114:17 elect 82:17 86:19,24 element 28:14 29:20 44:24 46:16 elements 134:17 elizabeth.diMarco... 3:13 else 8:24 34:1 41:22 101:7 102:8 103:21 106:5 138:2 139:24 148:11 elsewhere 33:22 127:12 137:11 embodiment 71:19 EMM 72:15,17 78:25 79:2 118:6 121:24 122:14 EMMs 71:3 118:9,18 119:13 119:24 120:1,13 121:18,19	encoded 122:14 encompassed 61:13 encounter 9:14 encrypt 74:15 75:7 encrypted 70:21 73:1,9,12,19 74:1,2,16,17,18,23 74:25 75:11,19 78:8 78:20 79:1,6,6 80:19 106:18,19 120:7,11,12 121:3 121:20,25 122:1 123:2,10,23 124:4 encryption 22:3 23:8,19 24:1,13 36:9,15,21,22,22 39:19,24 40:9,20,24 41:8,19,24 42:9 48:2,9,9 49:10,17 52:1 53:6,25 54:5 58:11,13 59:5,18 75:7 129:17,21,24 142:16 151:22 152:16 153:7,11 end 9:24 19:21 57:25 82:22 101:9,15 103:3 105:15 106:7 110:15 114:24 ends 8:6 13:16 19:19 engage 25:8 English 5:5 143:10 enough 7:4 33:25 44:20 entire 25:3 30:11 43:4 115:18 entirety 30:13 97:5 113:16	125:24 126:8 148:16 entity 29:6,9,10,13,23 30:6 30:6 31:2 47:6,9,9 48:8 entry 78:14 equally 82:18 Ericsson 1:4,14 3:15 6:20,22 error 155:6 ESQ 3:8,10,12,20 established 122:8 establishing 14:5 61:6 evaluate 25:2 44:3 even 26:21 36:10 54:1 103:2 105:23 114:21 126:18 140:20 event 114:16 128:6 events 43:1 124:10 ever 7:6 91:10 92:8 94:8 95:9,14 96:1 131:22 every 8:8 15:16 45:21 61:2 133:11 everybody 123:15 138:1 150:8 everything 8:24 61:14 evidence 20:23 exactly 75:15 82:11 105:5 107:17 111:3 137:1
E			
E 1:24 2:7 4:1 154:1,1 154:3,21 155:1 each 62:19 89:1,2 91:5 96:12 98:24 100:15 107:8 111:13 122:10 129:21 144:11,19,21 earlier 20:19 39:11 69:20 70:3 86:5 95:11 125:12 134:13 136:15,23 139:1 140:6,14 early 26:25 135:1 easier			

Examination 4:4,5 6:24 151:12	4:18,20,22 5:3,7,10 9:21 12:21,24 14:22 16:1,3 17:2,6 22:6 22:10 45:3,7 50:4,6 51:7,17 55:1,5,7,10 55:12,16 128:17 142:7 143:6,11	expressed 95:13	127:6 144:13
EXAMINATIONS 4:3		expressing 93:15 108:5	financially 154:17
examining 90:4		expression 135:16	find 87:24 89:14 92:25 135:4,7 137:3 146:7
example 8:2,4 9:17 12:2 20:21 25:11 29:17,20 32:1 34:22 36:8 47:12,18 47:23 48:23 59:11 61:4,8 62:4,5 63:1,3 63:11,19 64:5,8,13 64:21 71:20 73:15 74:12,19 75:18 76:5 76:24 78:17 87:6,11 87:14 88:6,10 90:17 93:18 94:3 96:4 103:2 107:17,21 108:12 109:1,5 110:11 111:1 115:10,15,25 116:21 118:4 124:10 125:25 127:11,14 131:11 131:12,12 136:19 136:20 137:4,20 138:12 140:15 152:13 153:4	exhibits 4:16 5:1 11:24 12:13 13:21	extent 20:18 30:4 32:12	fine 104:3
	exist 115:21	extra 140:23	finish 8:11 10:18 119:5
	exists 97:16	eye 96:18	finished 96:3
	Exp 154:22	e.g 65:18 66:1 67:17,23 70:1	first 10:22 11:11 22:17 35:24 39:9 64:23 73:17 112:17 129:14
	expect 48:18 78:21 79:2	F	five 50:23,24 51:1 131:6
	experience 18:21,23	fact 19:2 21:12,15 22:19 24:2 37:5 52:25 53:22 70:16 91:13 108:13,20 137:1 139:21 149:4 153:2	fixed 128:6 136:14
	expert 1:19 2:5 12:4 52:6,12 52:14,17,19,21 148:21	factors 89:3	fixed-boundary 139:22
	expertise 19:3	fair 83:6 84:1 85:19,21 85:23 87:22 89:21 127:21 135:2 139:18	fixed-duration 137:8
	expiration 36:23 133:15,16 136:15 137:14,20	familiar 80:5 132:3	flipped 15:15
	explain 42:25 116:5	far 11:17 24:25 32:10	focus 37:9 41:1 57:6 59:2,3 59:6 65:6 109:21
	explained 90:24 100:23 104:25	few 7:17 24:16 60:16 73:17 83:1 85:7	focused 37:3 40:21 147:25 148:18
	explaining 40:13	fidelity 85:1	focusing 54:5 64:15
	explains 56:14	field 10:14 20:2 21:18,20 22:1 23:7,24 24:11 24:21	football 128:6
	explicit 41:7 131:15 133:17 134:15 135:22	figures	form 29:24 38:15 69:15 70:21 72:16 85:5 92:11 117:8 136:11 137:18
	explicitly 18:19		forms 40:3
	exposes 74:19		formulated 48:19,20
	express 136:16 138:10,24,25		
Excellent 45:20			
excerpt 52:5			
exchange 122:21			
exchanged 63:10			
exclude 97:15			
Excuse 136:9			
exemplary 116:18			
exhaustive 61:14			
exhibit			

forth 63:12	19:20 20:16 35:17,22 38:11,11 151:10	9:13 14:2 84:16 92:12 96:4 143:4	128:8 138:6,7
Four 57:22,24	152:4 153:17,18 154:15	149:17 150:22 154:14	good 7:4 10:4 15:24 50:19 50:24 96:14 122:20 129:5 138:4
fourth 60:9	future 76:12	gives 121:6	Google 1:3,13 3:3 6:18
FPK 77:22 78:5 123:3,10 123:12 127:11	G	giving 7:13 25:9,11	Google's 12:3
Francisco 33:5	gained 18:24	GK 123:23 124:5,10	got 8:23 31:7 43:18 55:24 71:20 73:3 75:15 77:1 92:14 117:3 124:8 127:3 128:18 136:20 137:3 146:4
from 7:12 12:21,24 14:22 16:1,3 17:2,4 18:13 18:24,25 19:4 20:1 20:10 21:2,17 25:6 31:21 34:21 35:10 35:14 36:2 37:7,23 38:9,19,20 44:21 45:3,5 46:13 48:3 50:1,6 51:7,16 52:5 54:8 60:10,12 61:22 62:8,10,11 64:18,25 65:16 66:13,25 67:3 67:7 68:8,12,12 69:22 72:7 73:4 74:13 83:22,23 85:15 87:11,20 88:20,20,21 89:17 89:19 90:4 92:6 93:7 97:13 99:2,14 102:8 109:5 110:14 129:10 132:24 133:23 136:13 137:10 138:8 140:12 147:14 151:10 153:18	game 128:7	go 27:5 41:22 42:17 46:8 57:8 59:25 63:12 68:3,4 70:4 84:14 86:20,22 88:5 88:5,6 97:2,6 106:8 120:15 123:4 124:23 125:19 126:1 128:18 129:11 132:11,19 135:3 153:2	grades 8:23
	garbled 139:6		graph 82:25 85:9 86:7 88:1 88:12,14 91:13 100:1 103:16 126:13
	gave 47:8 81:19 138:22 140:15 148:25		great 50:21
	general 75:5 104:13	goal 28:17,18	GREENFIELD 3:4
	generally 10:14 75:6,24 88:16 88:17 150:25	goes 27:13 28:6 36:3 81:3 129:7	ground 7:17
	generated 90:21 129:18	going 7:16 9:21 12:20 15:21 18:4 25:1,4 25:21 26:25 29:10 31:2 46:9 50:3,17 55:4,5 63:15,15 64:23 70:4 81:24 82:5,17 83:1,24 89:16 90:23 96:8 98:12 99:16 101:6 101:13 102:23 103:5,14,20,24 110:13 115:18 118:6 121:17 125:21,23 126:8 128:4 136:9 137:16 138:8,25 139:16 145:12 147:1 150:8 150:9	group 80:5,8,11,17 124:12 124:14
	generic 35:4		guess 10:7 20:13 24:23 31:4,9 35:23 41:9 48:14 62:16 75:5 77:2 78:10 87:23 91:18 95:11 105:18 110:2,24 123:8 127:25 138:19
	generically 63:18 64:25		guys 50:25 141:8,12,18
	get 15:15 37:16 48:3 65:9 76:6 100:14 114:1 124:9 125:25 128:9,11,18 140:12 140:19 146:9,11,12 147:2 151:1		H
	gets 140:18,21	gone	had 11:4 48:2 81:19
	getting 64:18 141:1		
	give 21:7 24:16 25:12,18 27:5,24 47:7 50:5 53:14 55:5 92:15 120:21 131:15 146:4 149:5,21		
	given		
front 14:24 50:2 151:17			
full 149:3 152:22			
fully 110:2			
function 81:21 82:10,13			
further			

85:12 114:16 122:22 137:13,14 137:24 138:5 142:2 half 24:25 104:9 139:11 140:16 halfway 113:22,24 hand 111:8 handful 141:6 handle 134:19 happen 9:25 63:5 125:3 127:25 happened 127:21 happening 64:17 96:21 happens 44:4 63:3 72:1 134:21 happy 25:8 27:7 44:17,19 92:19 97:2 has 32:2,13,20,21 33:8 33:24 34:10,18 35:2 35:3 36:19,20 39:3 39:5,7,13 41:11,15 41:15,24 47:12,19 47:20 48:17,22 49:11 52:5 82:14 103:22 104:23 108:14 117:10,13 117:20 118:22 122:12 123:13,15 127:20 132:12,14 134:19 138:7,16 139:8 146:8 147:5 149:13 153:4,9 haven't 9:13 10:1 14:2 23:22 34:8 68:20 96:3	97:4,5,11 105:23 131:17 132:1 144:11 having 6:9 19:4 82:2 99:12 136:13 139:22 147:23 he 53:1 head 11:4,8 23:4,10,13,17 76:8 123:5 124:21 131:25 132:2 148:13 heard 101:4 hearing 87:17 height 101:8 held 2:6 Hello 7:2 141:23 helpful 57:18 helps 120:18 her 96:14 here 6:17 19:23,24 24:11 25:3 28:10,22 30:14 30:18 32:20,25 33:19 34:9 36:5 45:17 46:12 51:12 51:22 52:12,21 53:17 54:6,11 57:17 58:22 60:16 61:20 64:4 65:15,17,24 66:5,11 69:5,24 70:17,21 72:7,25 84:12 85:25 86:7 88:1 91:13,23 93:3 93:15 96:15,18,21 98:9 115:8 117:5,21	122:9 125:7 129:6,9 130:3,13 131:12 132:21 133:9 134:14 135:9 146:5 hereby 154:5 herein 129:24 hesitant 70:13 hesitate 69:16 Hey 82:2 83:1 115:17 he's 96:11 high 95:13 higher-level 75:1 hint 93:25 his 13:11 histogram 81:11 82:11,12 history 129:16,22 130:6,19 131:5,9,14,23 hit 101:23 102:12,14 106:6 hits 134:13 hold 55:24 67:11 80:13 135:4 hope 28:17 hopefully 45:16 107:19 horizontal 86:9,11 hour 8:8 50:18 103:20,25 139:12 140:16	141:2 hours 111:25 how 7:9 10:5,20 14:13 20:14,16 23:2,6,14 23:18 24:14 29:20 38:2 42:22 50:22 61:17 63:1 71:17 76:9 78:16,17 79:8 79:10,10 81:21 102:3 104:24 108:16,16 109:11 109:21 110:6,6,7 111:8 116:9,15 117:11,23 121:13 130:6,19 131:5 134:19 146:22 human 85:10 91:6 94:5 hundred 21:8 hundreds 88:3 hypothetical 44:15,19,21 I idea 74:5,9 identical 59:9 identified 27:6 identifier 129:23,25 identifiers 36:22 48:10,13 identify 97:13 134:25 illustrate 127:8 illustrated 87:14 illustrates 98:17
---	--	--	--

illustrating 82:16 98:14 103:17 114:3 115:6	81:13 84:14 85:11 86:19,25 99:13 100:12 119:22 124:2 125:4	initiation 30:5	52:16 53:3,23
image 34:21 126:16	indicated 114:10,25 145:1,2,3	innocuous 84:7	IPR 12:21,24 14:22 15:14 15:17,21 16:1,3,19 16:21 17:3,11 45:3 46:2 50:6 51:7 93:7 128:17 142:7
implied 72:6	indicates 86:21 119:23 120:1	inside 74:5,8	IPR2025-00003 1:6 4:18 5:7 17:4
implying 52:18	indicating 108:25 112:1,2	instance 95:24 134:4	IPR2025-00004 1:16 4:20 5:10 45:5
important 21:12 24:3 65:3 70:16 84:18 101:25 121:15 123:6 130:9	indication 89:4 99:16 100:11	instances 96:23	isn't 61:20,21 76:2 83:9 85:23 96:20 115:5 137:20 149:3
importantly 21:23 133:10	indications 83:18 127:20	instead 43:13 70:15	issue 27:21 28:1 30:1 33:10 63:17 98:11 152:24
inadvertently 84:24	individual 89:1,2 90:10,13 92:5 92:6 121:9 129:16	instructed 7:23	issued 22:23 23:2,6,14,18 42:13
include 10:8 36:4,15,19,21 38:12 39:18,24 40:9 40:19,24 41:7,19 47:24 48:12,16 61:5 61:9 75:3 78:21 79:2 121:24 149:19 150:6 153:6	indulge 24:6	instructs 134:7	issues 26:20
included 12:6 24:7	information 8:3 20:2 22:2,25 23:7 23:25 24:12 27:7 35:10,13,16,19,22 36:1,4,7,12,13 37:10 38:9,12,19 44:21 47:21,23,25 48:22 63:10,14,15 77:9 90:19 111:24 117:10,13 126:24 127:15 131:20 133:13 134:1 142:18 144:19,20 146:8,25 147:13 149:8 150:12,15,18 151:2	intend 38:24	issuing 42:4
includes 30:12 58:10 74:23 145:20,22 148:24 151:5,7	inherently 32:12,21	intended 82:7 104:12	italicize 54:22 56:21
including 22:24 113:10 144:12 146:16 148:17	initial 119:9,14,19	intentional 38:23,23 43:7 85:24	Item 132:23
incongruous 149:17	initiate 29:18 31:6 98:13	interest 81:13	items 127:7 133:13 134:1
increase 100:4 101:10 105:16	initiates 29:9,14	interested 71:25 154:17	its 41:1 76:19 77:6 82:21 89:12 92:24 122:8 135:16
increases 86:14 99:21 100:6 101:9 105:4,15	initiating 28:24 30:20 31:25 34:14,15 88:7	interesting 82:3	itself 38:6 79:9 83:22 84:19 101:1,4 102:2 105:10 139:23
increasing 100:25 105:9		internet 45:16 137:25	I'd 33:19 41:21 44:10 70:22,24 72:20 80:13 82:3 86:16 96:17 97:5 120:15 121:19 123:4
indeed 94:4,4		interpose 136:10	
indicate		interpret 21:9	
		interpretation 30:8 40:7	
		interpreting 20:19	
		interrupt 96:10	
		interruption 110:18	
		into 9:4 12:21 50:19 80:7 101:1,3 105:10	
		invalidity	

132:19 141:14 146:6 I'll 7:18 9:3 12:1 25:18 28:19 38:24 40:14 55:16 77:2 92:25 141:16 142:25 149:5 I've 8:23 10:8 11:4,18 16:6 27:6 41:22 55:24 57:7 69:21,24 70:9 71:20 80:3,7 90:24 92:14 96:4 97:4 99:4 114:21 115:11 124:7 127:11 128:18 130:3 131:2 134:14 137:3 143:4 146:4 i.e 137:6	20:24 21:16,23 22:19 26:17 27:6,20 27:23 34:12,12 37:21 43:3 50:11 57:15,21 58:8 59:21 65:2 66:11 68:3,7 69:24 71:17 72:2,6 72:8 74:13 75:6,21 76:22,24 77:10 82:22 84:16 88:5 89:11,14 90:22 96:8 99:16,25 100:22 102:8,10 103:14 105:18 107:16 108:9,24 110:5,10 114:2 115:6 117:17 118:12 120:1 121:25 124:7 125:7 125:18 127:11 129:11 133:23 135:3,6,18 136:9 138:18,22,22 147:7 148:6 149:17 150:7 150:11 151:16 152:1	63:25 64:17,20,24 64:25,25 65:7,11 73:8 76:5,9,19,21 76:25 77:6,13 106:15,19,25 107:6 107:11 108:17 109:23,25 110:12 110:17 111:13 112:18,21 113:10 116:10,11,19,21,25 117:12,14,25 118:5 118:8,10,10,24 120:1 121:25 122:4 122:9,13,17 129:17 138:18 140:2 142:16 151:23 152:16 153:7,11 kind 27:22 61:5 66:10 74:5 76:1 88:12 90:4,6 103:17 104:18 107:22 114:16 135:18 140:8,9,10 Knops 3:22 6:21,21 knowing 134:20 knowledge 18:24 25:24 known 124:14 150:14 knows 122:13	language 14:6 28:9,12 30:16 30:18 32:25 34:5,9 34:13 36:9 37:7 42:15 46:13 58:13 65:17 67:3 68:8 86:6 90:23 laptop 8:21,22 last 11:6 12:15 34:9 60:20 105:11 109:7 late 126:19 later 47:12 116:2 lead 43:15 48:22 90:14 leading 10:12 leaf 22:18 least 33:24 36:4 63:14 79:14 88:13 95:20 95:23 99:18 105:24 122:11,18 132:25 148:6 left 102:8,11,12 106:7 118:13,15 145:13 145:14 length 99:5 131:14 less 70:16 119:25 126:25 140:4 let 8:9 9:10 10:1 13:2,8 13:25 14:1,19 53:11 55:24 60:3 68:7 71:8 88:5 93:4 102:19 112:17 120:17 124:7 125:25 128:19 129:11 130:18
J Japanese 5:6 143:11 Job 1:25 John 1:20 2:6 5:8,11 6:5,8 17:5 45:6 154:7 155:2 join 126:18 128:2,2,3 joined 113:24 July 154:22 jump 41:25 126:18 June 135:21 137:12 just 8:22,25 9:15,20 10:1 10:14 11:17,17 12:7 13:8,10,21,25 14:11 14:19 16:6 20:4,15	K Kayvan 3:20 6:19 141:3 kayvan@noroozip... 3:21 keep 25:21 109:19 keeping 103:22 keeps 100:25 101:6 105:9 keys 22:2 23:8,15,25 24:12 26:21,21 36:9 36:15,21 39:19,24 40:5,9,20,25 41:20 41:24 48:2,9,12 49:10 52:8 54:2,12 56:22 57:4,4,5,5,6 57:13 58:4,11,12	L label 83:20 labeled 68:24 69:11 77:21 84:12 114:7 120:3 122:24 123:18 labels 106:10 118:13 lag 45:21	

132:11,21 135:3,4 143:5 150:7	141:13 147:10 149:15	little 31:9 50:18 57:10 74:10 119:25	69:12 72:9,10,12 77:21 79:11 90:4,7 94:15 108:24 115:14 125:18
let's 10:17 22:6 25:19 26:2 27:11 35:7 41:25 42:17 46:8 49:25 53:8 54:7 55:22 57:8 58:15 64:1 65:14 68:4 72:23 76:13 80:22 104:4,8 106:8,20 111:1 114:15 116:16 124:23 125:21 128:15 133:5 137:23 141:17 142:6 143:3 145:7,17 150:3	likely 82:20 83:14	live 46:20,21,25 47:16,20 48:17,25 49:6,12 63:20 128:6 153:9	looks 22:21 54:25 65:16 68:9 72:17 79:12,14 79:15 80:9,16 82:3 101:19,20 122:3 129:9 133:22
level 74:8 88:2,2 90:13 92:5	likewise 109:17	LiveNote 2:11	loosely 135:17
LIBBIE 3:12	limit 32:9	livestream 131:13	Los 3:18 33:6
license 32:18,20 42:5,13 47:1,3	limitation 13:13 28:21,23 29:4 29:22 30:3,10,12,13 30:16,19 31:22 32:16,25 33:11,16 34:24 35:8,9,23,25 35:25 36:3,14,24 37:2,11 38:8,17,18 39:3,16,17,22 40:12 40:18,21 41:8,18,25 42:4,8,13,14,17,18 43:2 44:2,9 46:19 46:24 47:14 48:24 49:5,16,19	location 29:6,23 31:2 33:2,4 47:6 154:11	lot 48:6 59:8 99:14 132:6 145:25
lieu 2:17	limited 32:12,12	locations 97:8	lots 57:4 90:8,8 112:18 123:13
lifespan 137:8	line 50:15 51:14,19 57:17 58:19 60:9,20 73:4 80:25 86:10 94:20 127:7 130:22 131:7 137:3	logical 150:23	lower 103:4
light 147:20	lines 57:22,24 73:3,18 131:6	long 23:21 27:2 50:22 54:8 85:22,23 92:13 130:6,19 131:5	lunch 141:8,9
like 13:19 27:5 50:22 54:25 65:16 68:9 72:17 78:15 79:12 79:14,15 80:9,16 81:11 82:3,11 89:25 100:9,18 101:19,20 102:4 104:2 105:18 108:20 115:17 120:14 121:19 122:3 127:6,20 128:2,6 129:9 130:21 133:22 134:23 137:14 139:11 141:5,7,11	list 9:21 18:8 24:7,19,22 25:9 30:9,11 61:14 77:5,16 122:8	longer 140:17	M
	listed 17:22 18:8 24:11 36:5 47:23 56:23	look 9:16 13:11 24:19 25:13,25 41:22 44:4 44:10 64:1 67:10 68:5 70:22,24 71:8 72:20 92:14 93:2 96:17 107:15,16,20 110:25 111:2 112:23 113:1 114:5 120:13,16 122:3 124:7 125:6,7,19 130:11 132:19,21 137:2 145:17 146:4 146:5 151:14	MA 3:6
	listing 80:10	looked 28:19 34:8 81:20 131:17 144:5	made 65:4 80:3 82:8 99:12 105:13
	lists 76:18	looking 8:25 22:17 50:14 64:6 67:1 68:22,23	main 37:9
	literally 24:23,24 43:23 86:1		maintained 129:18 130:7,19 131:5,23
			majority 83:3
			make 13:8 14:10 22:19 48:6 52:23 55:24 61:20 64:24 76:1 82:5 84:18 87:17 90:10 91:14 98:23 99:25 102:22 103:4 115:21 145:25

146:1,2,3,12 147:10 147:20 149:13,16 150:11,16,19,22 makes 47:21 146:11 147:3 147:14 149:7,11 making 20:24 27:23 58:8 60:11 69:24 83:18 99:10 management 144:20 manager 132:4,17,22 133:2,3 manner 43:15 83:11 84:25 111:9 117:2 many 7:9,10,15 10:15 18:25 23:2,6,14,18 24:2,24,24 81:21 103:18 mapping 53:4,23 maps 59:4 marked 4:16 12:23 13:21 16:2 17:6 45:7 55:10 143:11 materials 8:18 11:9,10,22 17:25 mathematical 82:14 100:18 102:3 matter 2:20 10:9 154:18 matters 14:7 57:1 may 6:16 7:25 11:16 13:17 18:2,5 26:18 33:21,21,22 40:2 60:17 69:2 77:14 79:7 89:2 121:14 124:17,18 131:19	131:25 134:3 148:12 maybe 50:18 68:3 81:11 135:11 140:16,16 140:21 me 8:2,9 9:10,13,15,17 9:19,20 13:2,8 14:12 15:5,12 16:11 16:17,22 24:6,10,17 24:20 25:1,10,11,13 25:16,21 27:5,24 28:19 31:10 32:24 42:25 44:13 51:18 53:11 55:24 56:5,9 57:16,17 60:3,10 65:20 66:10 68:7 70:16 71:8 73:3 80:9,16 88:5 92:7 92:12,15,16 93:4,23 94:11 95:21 102:20 104:3 108:25 110:6 112:17 116:5 120:17 124:7 125:16,25 128:19 129:11 130:18,21 132:11,14,21 135:3 135:4 136:9 138:21 143:5 146:4,15 149:2 150:7 151:10 153:18 mean 9:11 10:7 11:25 13:18 15:15 17:22 18:10,10,15 19:3 21:6 24:15 29:7,16 31:6,8 32:1,4 33:3 33:19 36:19 37:18 39:5 40:4,5 42:15 42:16 44:11 47:17 48:4 52:14 57:2 62:3 63:10 64:1 70:14 71:16 74:12 75:4,5,5,8 76:4 77:18,23 78:2 79:14	80:7 81:17,18 84:19 85:6 86:1 87:3,4,5 87:23 88:22 91:12 92:12,19 94:24 95:3 96:4,10 97:13 98:20 101:7 102:19 108:7 111:16 112:17 117:19 120:13 126:23 127:10 130:20 131:2 133:22 135:3 137:20 147:9,25 148:25 149:2 152:23 meanings 108:9 117:21 means 31:5 56:15 78:7,9 107:14 110:21 116:6 117:7 126:11 meant 70:14 measure 102:2 mechanism 75:13 111:3 114:23 115:1 116:15 mechanisms 115:6 mechanized 140:10 media 28:24 29:5,14,15,18 29:22 30:20 31:1,7 31:12,14,23 32:1,11 32:14,17,23 33:9,12 33:17,20,23,25 34:2 34:7,11,15,17,23 35:1,3,5 36:25 38:9 38:19,20 39:11,17 39:23 40:18 41:2,6 41:11,14,16 42:12 46:20,21,25 47:16 47:20 48:17,25 49:6 49:12 61:21 62:1,5 62:8,11 63:9,19,20	88:7,8 152:19 153:5 153:9 meet 32:6,7 36:9 41:8 44:2 44:9 90:16 meeting 59:17 memorized 23:22 55:15 68:20 97:5,11 132:1 144:11 memory 25:6 97:13 mention 131:8 132:8 mentioned 62:24 89:25 115:11 127:12,22 137:9,11 merely 35:25 message 74:17,19,23 75:2,8 75:11,13,20,21 122:16 143:22 145:17,19,22 146:16 148:24 149:12,19 150:5 151:4 messages 71:3,4,5 72:18 78:24 117:13 messaging 100:15 met 29:20 35:19 method 49:13 74:7 methods 132:15 middle 27:22 60:18 64:6 65:23 96:11 112:8 112:15 114:1,18 126:15 127:24 might 7:21 15:15 20:14
--	---	---	--

21:9 25:7 26:1 35:5 36:7,10 37:16 40:2 57:10 73:14 82:2 84:7 88:3 92:17 94:1 95:15 107:22 113:25 115:12 124:21 138:5 139:24	10:13 27:7 42:25 60:17 72:20 74:10 77:9 82:20 117:3,10 126:24 140:1,18,18 150:23	11:4,7,8 13:18,22 14:16 16:20 17:16 17:17 18:5,20,21 20:4 21:5 23:4,10 23:13,17 29:16 30:25 40:7 44:19 46:7,7 57:7 59:2,8 66:10 67:12 72:12 72:20 76:8 80:14 86:4 89:12,23 90:1 91:20 93:1,2,11 94:2 96:3 99:5 105:6 113:11 121:14,15,22 123:5 123:6 124:18,20 125:8 131:25 132:2 132:6 136:10 139:5 139:16 146:6 148:7 148:12,18 152:10 152:11	76:6 97:2 110:16 113:17 114:22 116:11 125:18 126:2 127:3 128:19 135:6 136:7 138:9 139:13 146:9 147:2 147:4
mind 11:12,25 12:10 18:19 26:16 44:12 131:19	most 39:6 40:21 83:4 98:13 100:1		needed 111:7 125:25 136:1
minutes 34:9 50:23,24 103:25 131:15 137:21 138:7 141:10,12,19	mouth 67:12		needing 9:24
mis 83:13	Mr 4:4,5 6:17,19,21 7:1 13:1,10,15,24 16:4 17:8 29:24 30:2 38:13,16 39:25 40:10 45:8,11,15,18 45:20,22 50:17,21 50:23,24 51:4 52:7 55:11 69:15,18 71:15 72:5,16,22 85:5,17 92:11,20 96:8,16,22 103:19 103:24 104:1,4,7 112:11,13 115:4 116:4 117:8,15 136:9,17 137:18 138:14,20 139:4 141:4,5,16,18,22 143:13 151:9,13 153:17,18		needs 33:12,17 34:6,25 35:13,19 36:15,25 37:12 41:19 47:15 48:25 49:5 134:25
mischaracterization 89:10			neither 97:15
mischaracterize 37:17			network 64:22 88:2,4,16,16 99:24 100:3 105:14 137:21
misphrasing 83:14		N	network-wide 88:13
misquoting 67:6		N 4:1	never 140:3
misread 42:21,22		narrow 10:17	new 44:18 138:9 151:1
missed 83:3 114:21		narrower 35:4	next 94:20 142:20 144:1 145:2
misspoke 27:1		narrows 34:16 38:11	no 1:6,6,16,16,25 2:8,11 5:9,12 7:14 17:5 23:5 31:17 42:21 45:6 48:1 49:2 62:6 62:7,9,11 79:5 84:4 93:6,9 95:5,5,6,6 102:10,16 105:20 107:12 111:5 114:19 116:2 136:1 136:4 142:2 145:14 146:18 147:3,14 149:1,4,11,23 152:6 153:17 154:16
misstatement 97:22	much 10:20 15:18 24:14 27:10	near 57:25 58:18 73:17 77:19	nonetheless
mistake 43:20	multicast 78:23 121:10	nearing 82:21	
misunderstanding 40:15	multiple 11:5 17:21 108:9 121:11 142:16 151:22 152:15	necessarily 34:22 41:21 75:23 136:14 139:9,9	
model 78:15		necessary 137:15	
models 77:3,11,15	must 19:25 20:17 21:16 33:23 36:4 38:12 40:9,24 47:19 48:20 48:20 111:21 126:9	necessity 63:14	
modify 69:17		need 8:8 14:9 47:24 48:3 48:11,15 49:9 53:11 53:14,15 62:14 63:6	
moment 92:25 135:19 149:7	my 7:22 8:21,22 9:18		
more			

36:10	138:8 141:8,10	occurs	128:5,8,13,24,24
non-period-based	143:5,8 145:11	126:17 149:9	129:7 130:25
135:1	149:24 155:8	off	132:18 135:4,16
normal	nowhere	13:18 23:4,10,13,16	137:25 140:2
135:21	93:24	74:13 123:5 124:20	144:15 145:8,9
Normal-period	numbering	131:24 132:1	147:25 148:18
133:14	27:21,21 28:1 53:13	148:12	150:9 152:23
Noroozi	numbers	offered	once
3:16,20 4:5 6:19,19	25:18 55:16 68:21	102:24 148:19,20	15:16 74:25 122:7
13:10 29:24 38:13	145:3	offering	128:8,8
39:25 45:11,18		52:14	one
50:17,23 69:15	O	OFFICE	12:8 20:1 21:17
71:15 72:16 85:5	oath	1:11	27:19 28:5 29:14
92:11 96:8 103:24	2:17	official	32:5 39:4 56:17
104:4 112:11 115:4	object	2:17	57:12 58:3,20 60:17
117:8 136:9 137:18	2:13 7:21 38:14	oh	60:17,17,19 61:8
138:20 141:4,16	objection	13:5 45:23 67:1,7,21	62:5,21 71:2 73:19
151:13 153:17	29:24 38:14 39:25	73:25 130:22	73:19,25 74:1,7
Notary	69:15 71:15 72:16	132:12 144:1	78:12 85:8 90:5
2:11 154:22	85:5 92:11 112:11	145:14 149:25	92:16 95:23 96:4
notation	115:4 117:8 136:10	150:3	98:15 99:15,15,16
123:8 124:1	136:11 137:18	old	99:24,24,25 100:1
note	138:20 154:11	7:16	103:14 104:10,15
19:25	obtain	on	108:10 121:1
notes	122:17	2:3,14 3:3,15 6:17,21	122:10 123:15,15
8:18,20 93:5,6	obtained	8:7 9:21 10:8 11:7	124:10 128:18,25
nothing	75:12	13:13,18 15:23	129:2,7 134:16,21
6:13 12:9 35:5 41:17	obtaining	18:18,21 19:3 20:14	134:21 140:4 143:4
138:5 151:10	49:16	21:9 22:22 25:2	146:1 150:4
153:18	obviously	27:7,13 28:5,22	ones
notice	9:18 10:9 13:17	32:22 35:17,18 36:3	24:10,20 26:16
68:25	18:23 39:7,13 59:9	37:3,9 40:4,22 42:1	only
notification	75:10 82:25 88:22	42:2 44:18 47:10,13	12:1 23:12 35:24
133:18 134:7,15	111:19 140:17	50:8,14,15 51:8	36:1 41:3 51:13,24
136:16 138:25	obviousness	52:15,15 53:4,23	53:17 54:13,17
notifications	19:25 20:17,22 21:16	54:5 55:24 56:10	57:12 58:3 85:23
135:22	occasionally	59:2,3,21 64:15	101:4 102:13,15
notwithstanding	9:3	65:6,21 67:11 68:13	105:19 113:21
150:25 154:11	occur	70:15 72:23 80:13	118:15 120:10
now	61:25 62:15,22,24	82:24 87:18,19 88:4	121:3 123:1 127:2
8:25 12:5 14:11	128:1 134:4 136:15	88:16,16 89:3,12	137:23,23 141:5
15:25 17:2 25:9	137:8 140:14	90:8,22 102:15	147:16 150:9
28:5 45:21 50:2,12	occurred	105:14,19 106:5	onto
51:21 57:10 59:25	127:15	107:4 109:21	27:13 28:6 46:9
97:8 113:23 118:12	occurring	113:23 115:24	129:7 145:12
122:20 132:13	63:22	126:14 127:9,23	oOo

2:1 6:7	75:12 77:12 89:3	47:18	part
open	96:12 107:15,18,21	packets	18:25 24:3 35:24
13:22 14:11 71:20	111:5,9 114:11	63:12	56:25 64:16 88:13
141:12	115:11,21,25	packet/request/me...	93:7 96:20 114:21
opened	119:19 131:10,19	144:21	130:20
16:6	134:6,10,12 135:25	page	participating
operates	140:4 141:6 147:20	4:17 22:7,11,17,22	2:12
49:13,13	149:18 150:4,22	27:13,13,14,24,24	particular
operation	153:16	28:5,6,22 42:1 46:9	29:5,23 31:2,24 32:2
140:11	otherwise	46:9 50:8,15 51:9	33:2 44:10,11 47:5
opine	18:13 48:1 133:20	53:11,14 54:8,9	51:19 57:17 66:23
25:1	136:23 139:1	56:12 57:16 60:18	68:16 79:17 88:4
opined	140:14	60:20 65:21 68:13	90:14 91:6 97:14
142:14	our	73:22,23 128:20,24	98:15 100:15 103:1
opinion	65:6 141:24	128:25 129:8 131:1	106:6 108:1 114:3
17:17 18:5 30:9	out	144:16 145:9	122:15 131:8 134:4
39:16,22 42:11	38:25 64:16 69:1	151:21	134:22,22
44:20 46:7 61:24	72:2 75:17,20 83:15	pages	parties
62:14 97:18 121:15	84:6,8 89:14 91:21	24:24	20:11 154:16
123:6 148:8	92:25 96:20 135:7	Page/Line	parts
opinions	147:2	155:8	17:15
13:18 18:17,20 20:4	outcome	paid	passed
52:15 148:19,20	154:17	137:24	128:9
152:3,5	outside	paper	past
opportunity	12:12,17 92:9 94:9	25:6	19:4
25:4	95:9 96:25 133:19	papers	patent
opposed	137:7	11:23 12:6,12 23:24	1:1,5,6,11,11,15,16
34:1	over	24:7,20 25:23,25	1:19 3:15 4:18,20
option	18:21 50:18 64:21	26:18,21,23 27:5,6	4:22 5:3,9,12 6:20
140:5	81:7 82:24 83:8	27:8,8	6:22 7:21,24 9:12
options	88:16 96:12 100:2	paragraphs	9:13 12:23 15:2,6,6
121:7	103:18 104:17	53:12 56:23 142:15	15:9,13 16:2,8,12
order	108:17 109:15	142:18 148:2,5	16:12,14,18 17:5,12
35:19 62:3 75:13	112:3 116:10	152:14	33:22 45:6,10 46:3
110:17 113:15	117:12	paraphrase	46:13 50:7 51:8
126:3 129:17	own	37:15	55:8 58:14 83:22
ordinary	11:7 13:22 89:13,23	paraphrased	88:7 129:10,13
20:1,6,8,11,15 21:3	135:16	37:25 38:2	130:2,5,14,15,20,24
21:13,18,21 63:2	owner	paraphrasing	131:18,22 132:21
other	1:5,15 3:15 6:20,22	37:20 38:6	133:10 134:24
8:1 9:9 11:17 12:8,9	142:3	parenthetical	138:11 139:3
18:20 22:4 34:20	owner's	67:21 73:8,18,25	141:25 142:3 143:9
35:12,16,21 36:16	1:19 7:21,24 141:25	parsed	153:5,8
40:2,3,3,22,25 42:6		35:14 37:12	patents
56:22 57:2 59:2	P	parsing	9:19 11:13 14:8
60:17 62:19 70:25	packet	35:9,15 36:1 38:8,18	16:24 21:25 22:23

23:3,7,11,15,19,23 63:17 91:24 patent's 59:18 132:4 pay 87:7 88:24 115:18 Pay-Per-View 58:9 PC 3:16 PDF 81:11,17 82:9,13 93:6,8 100:10,19 102:1 145:9 peaks 81:2 penalty 2:20 154:9 pending 8:12 people 21:8 71:24,24 81:12 82:17,20 83:1,4,4 83:17,18 84:12 86:18,23 88:4,15,15 88:19,23 94:24 99:10 100:12 101:12 102:22 103:4 105:14,24 115:20,21 123:14 137:23 per 79:12,13 100:12 101:11 122:5,6 percent 109:7 Perfect 50:16 perfectly 52:17 108:19 perhaps 14:10 21:9 67:5 70:14 114:1 perilous 83:11 period	99:22 101:9,21 102:9 102:12,18 105:9,15 105:21 107:19 111:7,12,18 112:3,9 112:15 113:2,5,12 114:12,18,24 116:2 116:3,9,22 117:12 119:3,9,14,20 120:2 125:4 126:12 131:8 139:11 periods 106:18 107:25 114:3 115:7 117:11 period-based 133:19 134:5,9,12,25 135:21 perjury 2:20 154:9 permissible 34:16 person 2:18 20:6,7,10 21:3 21:13,21 43:15 63:2 94:18 95:1 98:12 103:14 115:15 perspective 20:1,7 21:1,17 Peter 3:22 6:21 Peterka's 52:7 53:21,24 54:12 56:22 58:7,22 59:16 63:22 66:9 109:22 peter@noroozipc.c... 3:23 petition 9:18 11:13 28:15 30:1,8 44:13 46:17 52:15 53:4 59:1,15 148:1,1,2,3,5,8,10 148:15,20 151:20 152:9 petitioner 1:3,13 3:3 6:18 53:3 152:2 petitioner's	52:6,11,14,21 petitions 59:15 petition's 51:12,23 52:17,19 54:14,18 57:2,13 58:4,14 59:3 phrase 53:17 54:16 58:19 61:11 67:15 73:1,12 74:2 94:12 133:3 phrased 83:10 95:12,13 physical 8:20 physically 2:15 Ph.D 1:20 2:6 6:5,8 154:7 155:2 pick 141:9 picks 101:22 picture 82:16 piece 81:14 PK 120:7,9,12 121:4 122:1 PKs 121:25 place 44:12 56:17 102:13 138:17 139:8 places 25:25 38:11 planning 8:7 play 35:3 61:25 playback 28:24,25 29:5,10,14 29:15,18,19,22 30:7 30:20,21 31:1,7,7,8	31:12,14,15,23 32:1 32:11,14,17,23 33:1 33:9,12,17,20,23,25 34:2,7,11,15,18,23 35:1,6,10,14 36:2 36:11,14 37:1,3,6 37:12 38:9,19,20 39:6,8,10,11,17,23 40:19,22 41:2,6,12 41:14 42:12 46:20 46:21 47:1,16,20 48:18,25 49:6,12 61:21 62:5,8,10,11 63:9,19,20 72:4 88:8,9 152:19,20,24 153:5,9 playing 41:16 please 16:5 19:14 25:22 33:15 56:1 96:10,12 143:19 plot 81:6 83:7 84:2 86:13 87:18,19 89:7 90:25 97:19 98:17 99:6,20 100:10,17,20,24 101:5,16 102:6,15 104:10 105:2,19 106:5,6 plotted 104:17 plural 48:16 88:21 153:7,7 153:11 point 13:12 20:16 44:13 53:12 56:25 57:17 58:8 59:14,16 61:20 65:20 69:4,23 86:5 86:17,21 87:10 92:7 93:23 102:15,20 105:19 114:19 pointed 57:15 69:1 pointing
---	--	--	--

73:2	53:4 79:24	55:13 143:7	69:25 70:18 104:19
points	presenting	process	111:21 125:9 126:5
80:3 82:6	55:6	25:8 61:5 63:7,8	127:13 133:14
portion	presents	processing	provider
66:23 85:12 105:25	52:16	22:25	137:21
109:8 130:24 135:5	press	Professional	provides
portions	87:9 88:23	2:9 154:4	44:18
70:25 116:19,25	presumably	program	providing
118:18 130:12	18:25	51:25 58:2,10 81:7	8:11 14:7 17:2 25:16
148:14,17,21	pretty	83:2,8 84:3,15,20	142:18
POSA	7:16 37:19 82:3	85:4,12,20 86:3	provision
21:3	preventing	87:2 88:25 98:18,18	79:19
pose	7:12	99:1,11,17 101:1,3	provisioned
120:25	previous	101:15,17 102:7,17	71:7,13 72:15 79:20
position	90:1	102:24 103:3	80:19
57:2 58:25	previously	104:17,21 105:10	provisioning
possession	108:13 114:14	105:20 106:18	60:7,15,24,25 61:3,4
75:12 113:17 147:12	primary	107:8,25 109:7,9	61:9,11,18,23,25
147:17 149:10	41:1	110:15 113:6,24	62:2,6,13,15,20
150:13	principle	114:6,10,21 115:18	63:4,23,24 64:8,16
possibility	80:2 82:15	116:20,23 117:1	64:17,20 65:18 66:2
147:23	prior	118:18 119:19	66:18,22 67:18,23
possible	38:15 41:2 43:25	120:1,14 121:9,13	69:7 70:1,19 71:11
47:21 61:2 74:14	44:6,11,12 52:23	121:20 122:14,17	124:25 125:3,5,10
111:19	89:12 111:22	124:10,19 127:12	125:17,19,20 126:6
potentially	119:12	127:17 128:10	126:11,17 127:8,10
20:13 71:24 136:13	priority	137:24	127:13,16,21 128:1
predictability	21:24	progresses	prudent
140:9,10	probability	99:23 110:11	146:22
prefer	82:9	pronouncing	Public
89:22	probably	7:3	2:11 154:22
preference	7:16 15:16 24:16	proper	publication
15:20 16:20	25:12,14 27:1 45:21	152:22	4:23 5:4 24:22 55:9
preparation	103:23	properties	143:9
10:8,15	problem	82:14	published
prepare	147:6	protections	25:7
10:5 17:19	problematic	140:12	pull
prepared	139:23	provide	67:9 92:16
17:10 24:18 46:1	proceed	7:17,19 9:9,15 14:12	purchase
preparing	6:16	24:17 25:13 27:7	87:7
10:11,21 12:16 17:24	proceeding	44:19 53:14 70:7	purport
143:17	15:13,14 16:18,19	94:21,24 95:20	76:7
present	17:11 46:2 128:17	148:8 149:12	purpose
2:15 28:2 59:12	153:19	provided	71:11
76:25	proceedings	10:1 64:7 65:18,25	purposes
presented	6:2 11:24 12:14	66:18 67:16,22 69:6	14:4 15:21 52:1 53:6

57:1	124:17 129:14,20	realtime	133:1
pursuant	quoted	2:10 95:16,16 154:5	recited
6:10 134:14 136:15	18:12 66:10 69:22	reason	39:9,12,13 42:14
148:11	83:14 130:3 134:14	35:16 134:17 135:20	47:12 48:21 49:14
put	quotes	136:1 138:4,13	142:17 151:23
9:21 38:14 67:12	60:16 124:18	155:3,8	152:16
137:25	quoting	reasonable	recites
P.C	66:6,11 129:10	43:15 52:17 76:11	28:23 29:22 34:6
3:4		108:2,19	37:12 38:18 42:4,18
p.m	R	reasons	46:19 49:16,19
141:20,21	R	90:23 99:4 136:6	reciting
	154:1 155:1,1	137:9,11 138:12	31:1 88:8
Q	raised	139:10	recognize
qualifications	30:1	recall	22:13
100:22	range	12:5,19 18:2 23:5,10	recollection
question	82:16 118:22	23:13,16 29:25 30:7	59:8 146:6
7:22,23 8:12 14:18	rate	55:2 70:22 79:4,10	recommend
25:15 29:11 31:1,5	19:10,12	92:24 120:13,16	92:19
31:9,20 33:14 38:15	rather	121:5,12,13 122:20	recommendation
38:17,25 39:20	25:5 37:20,21 141:14	123:5 124:20 130:8	92:18
40:14 41:10 43:9,14	142:17	131:24 132:20	record
44:22 48:5,14 52:14	RAV	133:4,21 142:22	7:20 8:12 11:18 14:1
62:17 66:5,21 71:18	3:10	receive	15:22,23 26:17
71:18 72:21 75:14	re	29:19 31:8 32:14,22	27:20 93:7 96:15
75:15 77:20 80:15	5:8,11 17:5 45:6	33:9 75:11 114:23	150:8 154:13
83:9,10,25 87:24	reached	115:2,25	refer
93:13,22 94:7 95:4	42:20 43:13 44:5	received	13:23 14:16 15:5,12
95:5,7,8,12,18,25	45:2 49:21 133:17	45:18 91:1 107:18	15:17 16:11,17
97:1,6,12,14 101:5	134:5,9	111:4 112:2 126:9	reference
105:6 110:3,5	read	receives	9:24 16:22 19:10
112:12 113:11	20:14 35:24 43:4	29:11,15 30:6 31:12	37:5 55:18,20 60:7
120:18,22,25	69:24 92:14 95:25	48:8 87:2 122:13	60:9 143:14,16
121:17 125:12,15	107:24 110:6,7	receiving	referenced
131:19,20 139:5,23	133:23 135:15	28:25 30:21 46:20	12:7 17:23 18:14
139:24 146:18	146:21,22 152:22	47:10 81:25 112:9	62:18 118:12 148:6
148:11 149:21	155:8	recent	references
150:1	reading	10:10 11:5	76:23 143:22,25
questions	20:19 43:16 51:15,16	Recess	referencing
7:18 13:12 14:13	72:7 79:15	51:2 104:5 141:20	9:25
34:10 57:11 65:9,10	Reads	recipient	referred
76:12 95:12 123:21	155:8	75:10	69:13 129:23
141:6 153:17	realizing	recite	referring
quite	125:7	25:5 29:4 31:23	10:25 44:15 53:20,22
18:15 96:14 111:12	really	32:16 33:11,16	58:7,21,23 69:13
quote	43:8 48:6 100:11	34:24 36:24 38:8,10	70:2 88:10,12,14
60:11,13 65:15	101:22	46:24 47:14 61:2	92:1,3 99:7,9

104:20 135:10	54:17 57:13 58:4,14	28:9 46:12	respect
refers	58:20 70:8 109:8	requested	59:16 79:5 80:3
97:9	114:4 127:15	137:7	94:17 105:6 139:19
reflect	152:25	requester	152:3,12 153:8
82:7 91:1	relied	48:8	respectful
reflected	18:9	requesting	94:2
87:19 92:5 100:14	relies	48:8	respectfully
reflecting	53:4	requests	13:19 14:15
97:9,10 101:12	rely	34:20,23 40:3 42:5,8	respond
reflection	17:18 19:3	48:12,16 63:6,9,18	32:14,22
23:12 59:3 91:14	relying	63:19,19 81:7 83:7	responding
reflective	18:18	83:21 84:3,11,20	148:18
85:10	remainder	85:3 86:2,3,14 87:1	response
reflects	88:25 99:17	87:18,20,25 88:20	29:1,19 30:22 31:8
58:25 89:8 91:3,15	remaining	89:9,16,17,19 91:1	31:13,16,18,21
95:17 98:22 99:10	150:18	91:22,22,23 92:2,6	33:10 35:11,14 36:2
regard	remember	94:8,9,14 95:2,9,10	36:11,14 37:3,4,10
128:14	11:17,20 27:4 68:2	96:25 97:9,19,21	37:13 38:21 39:4,7
regarding	69:2 125:12 144:7	98:5,7,9,17 99:7,14	39:8,10 40:8,9,17
52:7,16	remembering	99:21,23 100:4,6,10	40:22 41:4,24 46:21
regardless	122:21	100:21,25 101:11	47:11,22 48:3,7,22
69:10	remind	101:17 102:7,17	49:12 58:9 90:18,18
Registered	56:5,9	103:9,13 104:16,23	94:2 143:22 145:17
2:9 154:4	remote	105:3,4,8,20 113:5	145:19,22 146:16
regular	2:4 3:1 6:4 154:8,10	152:20	147:4,15 148:8,23
8:22	remotely	requests-per-unit	149:11,19 150:5,17
related	2:16,18 6:11 8:17	105:12	151:4 153:6,10
27:9 39:11 45:9 89:5	reopen	require	responses
90:3 97:24 111:16	80:13	33:1 39:17,23 40:18	152:19
116:13 131:14	repeat	42:12 47:9 132:15	responsive
135:17 154:16	40:14	153:1,4	44:20 96:5 97:14
relates	repeatedly	required	102:21 131:20
64:17 84:12 97:20	60:6	47:23 90:19 94:21	rest
134:18	replace	requirement	84:15 99:1 131:17
relating	137:15	33:7 59:17	restarts
93:15 142:19 148:21	reported	requirements	27:22
relation	1:23 2:7	35:17	result
86:6 93:18 137:5	reporter	requires	40:23 88:25 99:2
relations	2:8,9,10,10,11,15	35:9 43:11 44:24	105:13
91:8	6:15 7:19 96:13	63:14 133:18 134:8	retrieve
relationship	154:4,5,5,11	research	42:9
88:23	reporting	12:11,17	reveal
relatively	2:16	reserve	8:2,3
103:3	represent	14:16	review
relevant	142:25	resolution	9:5 11:9,22 17:25
11:11 53:18 54:3,13	reproduced	101:21	96:4 120:21 130:21

148:7,14	said	10:7,20 12:1 19:25	106:23 107:13
reviewed	10:22 21:17 27:1,24	22:10 32:2,19 33:20	108:5 121:10 122:5
11:10 15:9 16:14	35:16,21 38:1,3	33:25 34:13,14 36:1	124:9,12 125:8,19
18:3 131:2 143:16	41:22 42:23 48:15	36:1 37:14 41:21	126:4 127:12 130:2
144:12 148:16	49:2 55:25 70:11	44:23 45:13 47:2,18	131:12 137:5
152:1	72:7 89:11 97:23,24	54:11 57:12 58:24	144:18,24 145:6,21
reviewing	98:19 100:18 128:2	61:13 64:24 65:24	145:24 146:19
11:7 14:2 97:7	139:20 147:10	66:5 70:23 75:23	149:16,17 151:3,3
148:18	149:15 150:20	77:8 81:17 82:2	scales
re-misidentified	sakes	83:1,23 90:1 91:2	140:24
49:2	96:12	97:23,24 101:3,7	scan
rises	same	102:10,16,20	96:18
81:2	23:21 28:14 31:15	106:16 107:13,21	scenarios
risk	42:15 43:17 46:15	107:23 111:1	139:10
84:23 140:18	55:12 59:6 68:13	112:18 114:20	scheduled
room	71:12 74:3 80:3,10	115:10,11,17	140:14
2:16 8:18	80:18 82:11,15	116:14 121:5	scope
rotate	84:23 91:9 93:8,10	128:21 133:9 135:5	34:17
134:8 138:9,25 140:2	104:13 105:5,7	137:23 138:5	scratch
140:3,13,22 145:15	117:2 123:3 124:5	142:10 146:2 147:9	112:6 118:6
145:16	126:22,23 127:4	152:4,13	screen
rotated	143:6 144:16	saying	9:1
134:8 137:16	148:25 149:21,22	20:23 29:13 52:25	search
rotation	San	67:24 70:3 72:3	124:8 125:7
42:20 43:12 44:2,5,8	33:5	77:8 78:10 84:1,4	second
45:2 49:21 132:13	Sarwar	87:11 88:24 89:7	42:9,19 43:11 44:1,7
132:16 133:11	3:8 4:4 6:17,17 7:1	95:19 98:25 107:7	44:25 49:17,20
134:3,11,25 135:2	13:1,15,24 16:4	107:12,13 108:16	58:19 67:12 80:13
135:22 136:13	17:8 30:2 38:16	115:5 134:23	96:9 124:8 129:20
137:13 138:17	40:10 45:8,15,20,22	135:18,19,25 136:7	135:4 136:10 146:5
139:8,11,12,22	50:21,24 51:4 55:11	136:12 139:7	seconds
140:6,11,20	69:18 72:5,22 85:17	142:22 147:7	131:16 138:8 140:21
row	92:20 96:16,22	150:11,25	140:22,23
77:19,21	103:19 104:1,7	says	section
RPR	112:13 116:4	22:22 30:19,24 31:6	129:12 131:3
1:24 154:21	117:15 136:17	31:25 34:14 35:15	secure
rule	138:14 139:4 141:5	36:20 37:18,25 38:5	140:1,4
96:19	141:18,22 143:13	38:20 42:23 43:23	security
rules	151:9 153:18	44:24,24 49:7,23	20:3 22:2 23:7,25
7:17	satisfied	51:12,22 54:20 58:2	24:12 137:9,11
run	35:20	58:3 64:5,11 65:17	138:12,13
80:7 147:1	satisfy	66:5,6,16,17,21	see
	90:23	67:22 71:22 72:8	13:5,7 19:9,16,21
S	saw	73:7,8,19 76:22	25:20 26:2 35:21
SACKS	73:11	78:4,5 79:8,18,20	42:15 45:11 50:25
3:4	say	84:5 94:12,21,24	51:20,21,21 52:3,4

52:9 57:20,21 58:1 60:8,9,13,16,16,17 60:21 64:2 65:22,22 67:1 68:23,23,24 72:25 73:6,21 75:18 75:19 76:16,22 78:5 80:25 81:15 82:3,17 85:12 90:12 96:18 96:19 98:4,25 104:10,11 105:24 106:23 113:4 114:6 120:3,18,23 122:23 123:18 124:7 125:22 127:18 128:19 130:18 131:4,7 137:6 141:1 141:11,18 142:14 142:21 143:21,23 143:23,24 145:14 150:20	145:25 146:1,2,3,11 146:12 147:3,10,11 147:14,20 149:5,11 149:13,16 150:16 150:19,22	79:13 122:6,7	73:8 89:8 97:19 99:18 106:19 107:1 107:6,11 110:7 126:12 132:23 150:6
seeing 72:17,18 77:4 131:21	sensible 150:24	set 34:10 82:12 88:15 122:4	shows 86:13 94:3 99:20 105:2 109:14,15,15 113:8 114:17 116:18,24 117:11 117:25 118:5,8 121:22 123:9 126:2
seems 52:16 89:18 119:16 119:22 122:19 124:1,16 127:6,19 150:24	sensitivity 84:17	setup 61:7 62:25	side 82:25
seen 19:4 105:23	sent 32:21 33:1 34:21 37:8 41:4 47:9 61:22 62:8,10,11 66:17,22 70:21 71:3 71:9,14 74:14 75:21 80:1,4 82:1 87:11 87:20 90:15,21 98:10 103:9,13 120:2 123:13 146:9 146:25 147:13,16 150:15	several 60:14 117:20	signal 137:6
send 32:4,6,11 47:6,22 63:6,25 71:23 74:13 74:16,17 89:3 99:16 138:24 147:15 149:13 151:1	sentence 19:16,19,21,25 21:2 69:5 129:14,20 144:2	shall 65:6	signaling 140:6
sending 29:4,22 31:23 32:17 46:19,25 47:2,11 63:9 64:20 66:13,16 74:20 149:8	separate 118:3	share 16:24	Signature 155:24
sends 31:11 72:2 147:24	sequence 43:1	short 24:25 37:19 141:14	significant 18:24
sense 10:16 32:13 33:6 34:4 37:7 48:6 88:22 111:17 134:3	server 32:3,5,5,7,10,18,20 33:5 34:22 42:5,13 47:1,3,22 61:5,22 62:8,11,12,19 63:7 63:25 64:1,18,20 66:14 72:2 79:17 87:2,12,21 88:12 89:4,17,19 90:22 91:6 92:6,10 99:3 100:16 103:10 122:10	should 8:11 13:22,25 14:1 22:10 42:1 45:15 58:24 60:19 83:23 119:5 123:9 143:7 155:8	silent 115:24
	servers 91:1	shouldn't 52:19	similar 47:7 104:10 121:17 122:21 123:21 124:18 142:22
	service 73:19 74:1	show 77:25 95:21 102:6,21 103:5 104:12 115:3 125:4	simple 149:3
	session	showed 113:22	simplicity 28:18
		showing 15:25 45:3,13,14 80:17,21 81:6 83:7 84:2 94:11 95:23 98:17 100:20,24 102:5 103:2 106:13 106:17,17 107:24 108:23 109:12,25 110:10 111:14 113:9,11 116:9 118:17,20 120:6 123:22 124:25 125:17 127:19,20 144:19 146:15	simply 21:11 35:4 43:20 110:25 149:17 150:21
		shown 66:2 67:18,24 70:11	since 8:16 13:18 21:24 50:10 124:12 131:13 137:16 142:3
			single 88:11,11 98:11,12,12 98:13,24 103:15
			singular 10:23

singular/plural 98:11	132:18 138:1,7 142:22 149:9	spec 41:22	111:7,22,22 113:18 114:9 116:1,2 119:4 119:7 126:10,11,12 128:11
situation 9:15 138:18	somewhere 132:5	specific 11:4,8 25:2,3,24 32:10 33:12,17,24 34:6,25 36:25 47:15 48:12 54:3 72:19 79:5 118:21 119:25 128:14 131:3,19 148:19	started 81:15 142:4
size 47:18	sooner 139:14		starting 19:16 130:22
skepticism 95:13	sorry 12:3 21:20 22:24 27:14 30:4,17 33:14 38:13 40:8 45:11,20 51:14 59:21 62:9 70:24 73:2,22 83:24 93:10 97:17 103:21 124:23 131:18 135:8,13 139:5 142:9 149:25 150:2 152:10	specifically 7:23 18:2 26:22 32:17,19 38:4 39:6 39:13,18,23 40:12 40:19 46:25 47:2 70:6,23 71:10 72:3 93:21 115:24 121:13 125:2 138:11 139:3 144:19 153:3	starts 27:12 28:5 50:14 101:14 106:2 115:17
skill 20:2,6,8,11,15 21:3 21:13,18,21 63:2		specification 16:25 129:10 130:5 130:12	state 36:3
slightly 101:10	sort 9:13,14 10:13 14:4 21:8 40:14 57:3,25 61:1 62:24 69:16 72:1 73:17 74:8,9 80:10 81:10 82:7,10 88:1,14 93:22,24 95:3 101:11 104:13 108:11 118:7 122:4 122:21 128:5 131:11 139:13 140:7 141:1,9	specify 47:5	stated 70:17 139:11 152:9
slowly 40:15		spend 24:14	statement 20:16 52:23 76:2 107:4,9 109:22 151:20 152:7,10,11 152:21
small 101:22 145:11	sound 7:16 10:4 55:14 138:21	spent 10:21 11:7	statements 33:22 126:7 148:19 148:20
smooth 81:18	sounds 50:24 134:23	spontaneous 66:10	STATES 1:11
some 10:9 11:7,14,14 21:10 27:7 28:11 32:12 37:7 38:11 59:10,10,11,12 61:8 62:24 75:12 76:12 77:14 81:22,24 83:4 86:21 87:9,9 89:15 93:14 94:5 114:16 117:25 118:5,8,25 119:8,13,18 126:16 131:2 134:4 136:24 139:13	source 38:5	squares 109:24	stating 21:11
somebody 20:14,18 36:7 126:14 127:23	span 109:15	stand 152:21	stay 72:23
somehow 20:20 137:25	spanning 26:24	standard 19:10,12	stenographically 2:7
someone 10:14 44:18 101:4 107:14 125:21,23	spans 24:23 54:8 110:7	standpoint 147:15	step 96:9
something 9:25 10:1 14:9 18:3,4 31:11 32:13,21 33:8 34:1 36:6 72:7 79:8 102:4 113:25 126:15 128:7	speak 14:6 141:25	stands 69:4,10 86:5 89:12 135:16	stepping 90:6
	speaking 75:24	start 8:10 14:13 25:9,9,10 25:11,16 86:21 107:19 110:14	stick 37:21
			sticking 87:16
			still 7:22 32:7 41:8 42:2 69:4 94:15 103:3
			stipulated 154:10
			straightforward

30:25	sure	44:12,14,16,19	129:1,2
strip	7:11 13:9,25 15:15	49:13 88:1,17 90:4	talks
38:25	18:10,15 22:19 29:7	90:9 98:14 103:10	76:21 93:19 121:8
student	31:4,9,19,25 37:14	113:24 126:15	137:5,6 138:11
8:23	38:22 39:20 41:9,12	127:24 134:19,24	teach
stuttered	43:19 51:20 52:13	136:1,7,12 137:12	142:15 151:22
118:7	55:24 61:15 62:16	138:16 139:7 140:1	152:15
subject	64:24 65:1,2,14	140:2,9	teaches
26:20 40:7	78:2 87:3,4 89:24	systems	76:19 133:11
submitted	91:12 94:7 98:19	24:3 26:1,18,20,22	teaching
10:19 11:23 12:13	101:7 102:16	27:8	77:5 147:19
subscribe	103:21 120:24	systemwide	technical
93:20 94:13	123:6 127:9 152:11	89:16	24:7
subscribers	SURESH	system-level	tell
81:12,19,22	3:10	91:3	6:12 24:10,20 73:3
subscription	suresh.rav@wolfg...		111:8,11 125:16
93:19	3:11	T	132:1 138:8
subsequent	surrounding	T	tells
109:3,4	130:23	154:1,1 155:1	111:11 115:20
subset	Suzuki	table	ten
81:24	143:3,6,14,16,19	76:13,18,23 77:4,16	131:6
substantive	144:12,12,15,23	77:20,25 78:10,14	term
44:18	146:6,13,23,24	79:18,23 80:9,16,20	61:11 84:8,17 86:6
substantively	147:6,11,21,22	144:20	92:8 108:6 113:6
52:20	148:11,15,16,21	take	terminology
such	149:7,18 150:22,24	8:8 9:16 55:16 67:9	85:25
44:13 48:19 49:12	152:2,8,12 153:13	96:17 104:2,4 111:1	terms
97:15 115:20	Suzuki's	115:14 130:11	108:17
116:25	142:15 143:25	137:10 141:17	testify
suggest	151:21 152:14	145:17 151:14	6:9 154:8
119:17 122:19	swapped	taken	testimony
124:16	135:7	51:2 84:6,8 91:21	2:19 7:13 154:12,14
suggested	swearing	104:5 141:20	155:4,5
93:24 122:11	2:18 154:10	takes	text
suggesting	switch	92:13 105:23	58:1 69:5,21,24
30:5,8 41:18 92:8	50:10 136:22	taking	70:17 93:14 124:13
Suite	switched	8:7,19 74:13	127:12 131:3
3:17	43:5,17,18 150:10	talk	146:17,18 149:16
summary	switching	65:14 70:6 96:12	150:20
89:23	38:22 50:1,19	107:20 108:10,10	text-searchable
supports	sworn	talking	92:13,16,17,22,25
52:23	6:11	27:16 39:6 54:16	93:1
suppose	symmetric	56:5 66:12,15,16	than
114:15 137:20	75:6	67:14 70:11 72:11	9:9 12:9 25:5 30:6
supposed	system	74:4 75:6 88:1	35:4 37:20 70:16
13:4 67:25	24:4 43:25 44:6,11	93:21 112:19,21	107:18 111:5,9

116:1,2 117:3,10
 119:19 127:1
 131:10 134:14
 136:23 139:1,14
 140:4,14
Thank
 6:15 7:5 16:23 27:10
 45:19
thanks
 81:15
their
 2:19 113:24 126:15
 127:23 145:3
them
 9:5,5 11:1 13:20,23
 18:13,13 19:4 21:8
 24:2 25:13,13 48:3
 77:2 81:19,22,24
 89:23 102:24 127:7
 140:3 153:2
then
 9:16 10:12,13 11:3
 12:7 18:5 20:22
 22:11 27:6 29:19
 33:10,20 36:9 37:15
 38:10 43:17 45:21
 48:2 52:5 58:3 68:7
 72:12 74:18 75:2
 79:18 81:3 86:21
 87:8 88:24 89:3
 91:23 95:18 98:24
 99:12 101:14
 105:16,17 109:2
 114:22,24 115:16
 118:3 121:10
 122:15,16 124:11
 126:8,17,17 127:4
 127:24 128:1,1
 132:10 139:12
 141:6,9 150:7 153:6
theory
 51:13,23 52:15 53:3
 54:14,18 57:13 58:5
 58:14 137:23
there
 7:12,25 10:9,23

11:16 13:14 20:9
 21:9,10 28:7 33:21
 33:22 34:5 37:6,21
 39:14 40:2,2 41:4
 41:13 42:16 44:11
 48:18 59:9,10 60:3
 60:4,17,19 61:20,20
 62:7 63:10 68:13
 70:5 73:8 79:7
 80:21,25 85:23 87:8
 87:8,10 88:9,22
 90:1,12,20,21 91:8
 91:8 92:18 93:4,14
 93:25 99:14 101:7
 101:16 102:16
 103:3,12,13 105:19
 106:9,19,23 107:7
 109:11 110:11
 113:5 114:22
 117:17 118:20,22
 126:16 129:6
 131:10,19 132:11
 134:6 135:12,20,23
 136:6,21,22,24,25
 138:23 140:18
 147:22 148:12
 153:4,9
there's
 7:14 13:13 15:22
 20:23 27:20 31:17
 33:7,20 34:3,3,19
 35:17 36:6 38:23
 40:15 41:17 45:20
 57:4 62:6,7,9 63:13
 65:16 66:21 69:10
 70:4 71:22 73:7,18
 74:13 77:10,25
 79:23 82:16,25
 84:23 87:25 88:3,22
 90:1,2,16,17 91:22
 91:23 93:6 98:10
 101:20,21 112:18
 114:19 118:2,2
 119:10 122:10
 124:11 128:24
 131:11 135:25

136:20 138:4
 146:18
these
 11:24 12:13 14:7
 21:25 24:16 25:12
 25:23,24 26:1 27:4
 27:19 57:11 73:2
 77:10,13,14 80:10
 80:10 84:20 91:22
 111:13 116:10,11
 117:11,24 118:23
 118:23 133:25
 134:20
they
 20:21,24 58:11 63:18
 70:14 75:10,11 82:2
 83:18 86:18,24 87:5
 87:5,6,7,9 88:24
 89:5 91:15 99:11,13
 99:17 101:5,5
 102:22 105:22,25
 108:18 113:17,20
 113:23,25 114:22
 115:17,25 116:14
 121:20 122:13
 125:24 126:17
 128:1,4 129:18
 136:23 138:1,4,5
they're
 17:22,23 18:14 79:24
 82:5,11 89:6 90:2,3
 102:20,23 103:14
 107:7 109:14 112:2
 116:15 120:14
 126:19 134:2,2
they've
 81:14 82:1 83:2
 85:12
thing
 9:13 11:12 12:1,8
 17:17 31:15 61:2
 62:21 81:2 82:4
 91:9 92:14 110:14
 115:19
things
 11:17 18:21 22:4

26:1 31:18 35:12,17
 35:22 36:5,16 40:25
 42:6 57:4 59:12
 61:9 77:12 87:13
 153:16
third
 18:21 50:15 54:9
 56:11
thoroughly
 28:20
those
 12:17 19:2 23:2
 26:16,18,21,21,21
 27:8 31:18 48:12,13
 48:16 57:13 58:4
 66:9 71:4 72:2
 79:21 81:21 86:2
 87:12 89:5 90:10
 98:7 103:7 109:11
 114:10 121:19
 124:21 126:7
 140:22 142:17
 148:22 150:9
though
 21:1 36:10 76:12
 111:12 114:21
 126:18 146:15
thought
 67:5
thousands
 18:25 24:24 88:4
three
 25:7 110:11,16
through
 22:19 24:19 27:6
 56:23 85:13 92:5
 97:2,6 100:25 105:9
 111:3 113:22,24
 124:8 133:12
ties
 41:2
time
 10:20 11:7 23:22
 24:14 27:2,5 38:14
 50:19,21 64:7 65:18
 66:1,18 67:17,23

69:7 70:1,18 81:7 81:21 82:6 83:8 86:10,11 92:13 100:12 101:12 103:22 104:17 105:11,12,24 106:18 107:19,25 108:17 109:15,15 110:7,10 111:7,12 111:18 112:1,3 114:10 115:7,9,22 116:10,22 117:11 117:12 124:13 125:4,10 126:6,12 128:6,8,11 131:8,13 133:16 136:14 140:4,14,24 146:8 146:25 147:13,24 150:15,18 timer 134:13 times 7:9 36:23 60:14 82:17 95:20 98:5 110:8,16 116:13 118:23 137:14 time-based 140:3,11 today 7:13,17 141:24 144:5 together 56:16 120:12 told 147:4 too 15:17 24:25 45:18 101:22 top 23:4,10,13,16 58:18 104:9 123:5 124:20 129:11 131:25 132:2 145:13,14 148:12 towards 60:18 103:2 152:19 track	103:22 TRADEMARK 1:11 transcribe 96:13 transcript 2:14 12:3 154:13 Transcription 155:6 translation 5:6 143:10 145:8 transmission 99:2 transmissions 118:21 transmit 75:8 transmitted 76:2 transmitting 142:16 151:22 152:15 treating 91:18,19 117:24 TRIAL 1:1,11 tricky 83:9 tried 46:18 109:6 true 66:8 75:1 83:20 151:8 154:13 truth 6:12,13,13 truthfully 154:9 try 15:19 16:22 25:5 83:24 93:12 118:7 trying 11:16 39:2 43:3,6,7 64:16 71:17 75:17 75:20 89:14,15 109:21 115:3 Turhan	3:8 6:17 turhan.sarwar@w... 3:9 turn 19:6,14 22:6 27:11 35:7 39:11 46:8 49:25 53:8 54:7 55:22 58:15 59:19 68:6,7 76:13 80:22 91:4 98:1 100:14 104:8 106:20 116:16 128:15 133:5 142:6 143:3 143:19 144:4 145:7 turned 51:6 113:23 turning 99:19 146:14 turns 126:14 127:23 two 10:23 11:24 12:13 34:9 56:15 58:11,11 71:2,4 77:25 78:2 79:21,24,24,25 80:10,10,18 117:17 133:12 type 32:3,10 53:18 54:13 54:17 types 54:2 56:23 71:5 typically 63:16 U Uh-huh 58:17 UK 73:9 78:5 unaware 97:8 unclear 31:10 uncomplicated 53:13	under 2:20 8:1 51:12,23 73:1,9,12,19 74:1,3 74:21 75:19 78:8,11 78:15,20 79:1,6 80:19 90:19 121:20 154:9 underlined 114:18 underlying 80:2 underneath 86:9 113:7 understand 8:13 9:2,6 15:5,12 16:11,17 20:6 21:19 32:22 33:9 43:3,6,8 43:9 52:13 62:16 63:3 69:19 71:17 77:23 100:9 102:1,4 110:5 116:8 124:22 understandable 144:14 understanding 9:22 29:16 60:23 71:6 93:11 107:14 110:2,3 121:23 150:1 understood 8:5 14:19 16:23 19:5 63:12 94:25 104:24 142:5 undisputable 40:6 unicast 72:18 78:15 121:9 unintentional 85:24 unique 78:8,12,20,21 79:1,2 79:6,8,12,12,16 80:19 121:8,21,25 122:4,5,9,12,15 123:14 129:22 unit 100:12 101:11
---	---	--	---

UNITED 1:11 unless 7:23 until 101:15 105:15 114:24 unwrap 74:18 up 8:6,6 9:24 10:12 13:16,16 14:5 57:22 57:24 67:9 70:5 81:2 86:17,20 89:16 92:16 101:6,6,6,22 113:22 114:17 122:4 141:9,11 upon 17:18 18:9 us 4:18,20 10:1 12:23 14:1,6,19 15:2 16:2 16:8 150:9 use 2:14 9:19,20 28:21 37:22 53:17 58:19 59:6 74:7 75:7 83:21 89:23 91:10 91:16 93:12 96:2,6 108:2,14,20 109:6 109:17,19 110:16 110:21,24 112:3 114:24 116:9 117:11 135:21 139:16 142:19 145:1 used 26:21 28:14,15 37:24 46:15,16 64:12,14 71:23 73:12 78:23 85:7 86:6 92:9 103:8 107:8 109:1,3 109:4,25 110:9 113:14 115:12 116:14 117:13,16 142:20 145:2	useful 76:12 111:18 user 89:2,8,19 91:6,11 92:1 96:2,5 97:9,20 98:12,25 115:15 users 90:8 91:3,14 92:4 98:23,23 103:18 uses 56:15 72:25 84:22 91:25 96:24 110:19 113:6 using 8:21 20:12 22:2 23:8 23:25 24:12 60:14 61:11,17 71:9 74:2 74:3,16 85:8 108:6 109:19,20 117:4 120:7 121:8 123:10 123:12,23 V v 1:4,14 validity 150:18 variation 21:10 various 18:12 41:13 48:18 54:2 57:4 76:19 132:15 verbal 7:19 verbally 2:19 version 92:16,21,23 93:1,2,5 versions 14:12 versus 98:18 vertical 84:4 85:9 86:7 104:22	very 27:10 82:25 83:10 91:18 101:19,24 103:2 105:22 106:7 112:12 113:18 138:4 147:11 via 6:9 154:7 videoconference 2:5 6:4,10 154:8 view 19:19 20:21,24 21:22 40:7 72:4 82:21 88:24 92:4 95:19 109:6 viewed 12:2 20:1,17 21:17 viewer 79:13 122:6 viewers 85:11 90:8,10 viewing 77:2,11 110:17 114:9 Villasenor 1:20 2:6 5:8 6:5,8 7:2 17:5 151:14 154:7 155:2 Villesenor 5:11 45:6 Vosburgh 1:24 2:7 154:3,21 W wait 140:22 waited 138:6 waive 154:10 want 9:19,20 13:10 24:14 25:10,11,21 50:11 57:17 65:11 76:22 81:23 83:1,2,19 86:18,24 88:24 91:15 92:14,15 94:1	95:15 96:14 98:25 99:11,17 102:23 105:25 110:24 114:20 117:6 137:22 138:1,5 140:21 141:8,10 147:9 149:2,22 wanted 72:8 110:13 wants 72:3 93:16,20,21 94:5,13 95:21 was 2:6 6:11 10:18 11:14 11:15 15:13 16:18 18:4 28:17,18 35:22 37:6,8 38:18,23 41:4 42:12 43:7,19 43:22 46:6 52:19 53:2 56:9 61:13 64:19 66:6,21 67:5 69:13 70:11 72:10 72:11,12 75:24 94:8 95:5,6,8,12 96:1 97:24 103:8 105:6 107:18 111:6,17 114:14,15 121:15 122:7 123:5 130:8 133:20 135:6,17,18 135:22 136:14,21 136:22 137:7 139:6 142:25 147:16 148:7 150:19 wasn't 18:4 43:19 135:20 watch 71:25 72:4 81:14,23 81:23 83:2,19 84:15 85:11 87:8 99:11,17 100:13 102:22,23 103:5 106:1 110:14 113:15,16,21 114:20 125:21,23 126:8 127:2,17 128:4,11 138:3 watches
---	--	--	--

115:15	60:25 62:2,18 63:8	what's	85:18 89:15 92:24
watching	64:3,23 66:15 67:11	21:14 27:4 34:17	93:4 94:8 95:8
84:13 86:20,25	68:2 70:4 71:8	36:18 40:13 48:21	102:23 123:1 124:3
114:15 126:10	74:12 77:18 79:23	64:16 70:17 92:18	125:16 128:5,9
way	81:8 83:12 85:18	96:20 98:9 102:24	which
9:16 14:11 15:23	87:16,23 88:21	150:25	8:1,3 14:2,2 15:13
25:14,23 54:9 56:12	89:22 90:8 91:16	when	16:18 24:10,20
61:10 70:24 74:3	92:3 94:20 95:3,19	12:15 13:2 17:24	27:16 30:11 35:4
77:8 78:12 82:24	96:8 99:9 101:19	37:14 43:18 45:13	36:20 39:4,7,12
86:16 95:13 108:10	104:18,22 105:22	45:23 56:15 60:3	41:13 44:24 47:8,11
108:16 135:5,18	108:3,8 109:14	64:24 69:13 70:2,11	47:20 48:21 50:7
138:17,23 139:2	110:23 111:16	75:10 81:17 82:8,17	51:14 53:5 54:5,17
150:23,24 154:16	113:14 114:14	91:25 93:19 96:11	56:6,10 58:10,12
ways	116:8 117:2,9,19	101:3 107:17,25	67:15 70:17 73:22
21:6 41:13 48:18	118:15 119:2,10,25	109:25 110:8,19	76:14,14 77:23
76:18 77:5,13,16	125:2 127:22 134:2	111:3,7,9,14,18	78:19,25 79:8 80:4
78:1,2 79:25 80:11	135:3,24 136:4,19	112:1 115:24	81:21 85:10 91:3,17
80:18 85:7,8 117:17	138:5 146:17	116:14 118:17	92:4,17 96:1,5 97:2
we	147:25 149:2 150:7	132:12 134:4,12	98:23 107:25 108:1
8:5,10 9:5,14 13:15	153:1	147:1,16 149:9	109:16 112:3
14:2,9,13 15:17,22	were	152:21	114:23 119:10
24:18 27:16 37:11	10:9,23 11:23 12:13	where	121:2 126:11 127:3
37:15,18 38:1 56:5	17:15 20:21 26:20	8:18,21,23 13:4	128:21 129:17,23
56:6,10 59:19,21,25	27:8 28:15 37:22	18:11 19:9 23:12	130:20 131:12
64:24,24 65:6,21	43:10,16,17 46:16	24:3 26:17,18 27:21	132:23 133:15
67:9 75:18 81:8	56:5,6,10 59:21	39:8 44:13 45:13	134:21 135:8
85:22 96:14 100:8	72:6,8 95:12 110:13	51:14 54:9 56:17	136:14 138:24
102:16 103:19	112:5,7,14 114:9,20	57:20 65:20 68:8	142:9 145:12
104:10,11 122:22	126:20 129:18	72:8,11 76:22 78:5	149:12 151:15
125:18 135:8 138:6	135:8 136:6 148:17	90:14 93:17 95:22	while
144:4 150:10	148:22 151:16,19	95:24 96:24 97:9	15:16 140:11
Wechselberger	153:14	101:17,21,22	who
52:7	weren't	102:14,16 105:19	71:24 81:12 83:1,18
week	26:22	106:18 107:8 114:3	84:13 86:18,19,23
11:6 12:15 140:16	we'll	114:16 124:21	86:24 99:10,25
well	15:23 28:21	127:23 128:10	100:12 103:4
7:25 10:7,22 11:10	we're	131:23 134:24	115:15,21 137:24
13:17 14:10 17:15	8:16 26:24,25 28:4	137:13 138:23	whole
17:20 18:17 19:24	42:2 50:1,18 51:8	140:2,4 144:1	6:12 17:16 34:8
20:13,22 21:5,16,24	68:13 77:4 117:4	whereas	57:16 82:4 92:14
29:7 31:17 34:8	128:22 138:8 141:1	82:13,24 88:12	100:3 102:24
35:2,15,24 36:18	we've	whether	110:14
37:2 38:3 39:5 44:3	50:17 51:6 76:14	12:5 29:21 33:5	who's
47:7,17 48:1,5,9	103:24 121:2	38:18 40:1,2,12,16	125:21,23
49:11 52:22 55:4	whatever	43:6,19 68:2 69:10	why
56:25 59:8,15 60:20	14:1 92:19 141:12	75:17,20 79:4,4	18:14 25:16 52:11,20

54:5 57:11 59:19 67:9 93:12 101:25 106:2 133:25 136:1 136:7,12 138:5 146:3 152:24	139:19 140:9 142:3 146:15 147:6 151:3 151:20 152:2,3,8,8 152:12,22 153:8	works 146:23	107:22 120:8 123:11
will 2:16 7:16 8:17 9:10 9:15,16 14:7 15:5,7 15:12,19 16:11,17 76:11 81:13 83:4 84:6,7 86:18,19,20 86:20,23,24 87:8,9 88:25 90:10,11 91:4 91:14 92:4 94:21 98:23 99:13,14,25 100:4,12,14 103:11 103:12,13 105:13 124:9 134:21 153:6 153:10	within 12:6 54:3 102:11,11 114:11 141:11	world 138:2	wrapping 74:4,9,11
willing 76:1	without 38:3 72:1,3 80:4 82:1 97:7 102:25 110:18 134:20	worlds 140:8	write 17:14 46:5 66:8 70:14
Wilshire 3:17	witness 2:5,19 13:11,11,17 45:17 96:10 104:3 141:14,16 154:12	worry 14:9	written 17:16 46:6 150:21
window 9:4 12:21	WOLF 3:4	would 8:1 10:7,8,13,20 12:7 13:19 14:15 16:20 20:7,20,22 23:11 24:15,15,17 25:25 32:24 34:22 37:20 38:1 43:15,25 44:4 44:8 47:7 50:22 57:18 61:4,16,17,25 62:21 63:2,12,15 75:1 77:7 78:21 79:2,16 81:22,23 83:14 84:25 91:2 97:2 98:8,10 101:5 104:2 106:16 109:9 110:15 112:3,9,15 113:17,20 114:12 114:22,22,24 115:25 116:1,14 120:8 122:8 125:21 125:24 126:12,16 127:4,25,25 130:9 130:20 135:5,24 136:1,7,12,23 138:6 138:12,23 139:1 140:18,19 141:12 146:11,12	wrote 17:15 46:6
with 8:18 9:17 11:6 14:6 14:13 19:19 32:24 35:5 37:21 39:3,4,5 43:5 48:21 59:15 61:13,17 62:19 68:11 69:21 70:7 72:21 80:3,5 81:8 84:8,24,25 87:10,16 89:2 91:4,5,11 92:5 94:17 96:2 97:3 100:22 103:8 104:3 104:18 105:1,6 106:10,19 107:9 108:1 109:24 111:13 117:23 120:6 121:25 122:14 123:9,22 131:18 132:3,12,15 136:4 137:19 138:17,24 139:2,10	Wonderful 50:25	worked 14:9	X
	won't 83:5 91:20		X 4:1 37:25
	word 32:19 43:4,4 54:22 55:16 56:21 60:15 83:11,22 84:22 85:7 85:8 91:10,17,25 96:6,18,19 103:8 108:2,20 109:19,20 117:4,16,19		Y
	words 33:19 34:20 37:19,21 37:22,24 40:22 43:17 56:15 57:2 59:2 66:10 67:12 89:23 107:15 110:24 114:11 115:21 134:10,12 135:25 139:16		yeah 9:11 11:3 14:25 15:4 28:3 29:25 43:14,21 44:17 45:18,25 55:17 56:17 58:1 60:16,19 62:2 65:1 65:2,12,14,23,24 66:15 67:1,2,7,14 67:19 68:4,22,24 69:16 70:13 71:2,4 71:8,22 72:10 73:4 73:6,15,17,25 75:1 75:23 76:24 80:7,20 80:21 81:4 88:5 93:14 96:3,17 98:22 100:8 101:16 104:4 117:9,22 121:12 124:12 131:2 132:12,13 133:22 134:10 135:4 136:3 136:18,19 137:4 144:2 145:14
	work 10:8,12 21:20 22:1 23:12 25:3 109:8 111:20 148:7	wouldn't 36:9 38:1 41:21 48:3 48:5 61:1 75:23 76:7 77:7 102:10 109:7 111:19 113:21 115:13 137:15 138:17 139:9	years 10:15 24:23 27:1,2,2
	workflow 132:4,17,22 133:2,3	wrap 115:12 141:11	Yep 60:2 73:7
	working 10:14 18:22	wrapped	yet 97:22 143:5

130 26:12	172 26:14	12:22,24 14:23 16:3	16:12,14,18,21,24
132 26:13	174 26:15	2025-00004	27:17 45:10 46:2,10
133 26:13	178 15:6,9,13,17 16:24	16:1	46:13 56:7 59:7,13
134 26:13	17:3,11 27:16,18	2025-3 15:14 50:6 51:7	142:23 143:1 153:8
135 26:13	28:4 50:1,3,7,12	128:17 142:7	33 26:4 49:25 50:7,14
136 26:13	51:8 56:6,8 58:16	2025-4 16:19 45:4	51:6,16,19
1384145 1:25	59:11,20 60:1 73:16	2029 154:22	34 26:4 57:9,12,24,25
142 26:13	73:23 88:7 128:16	21 1:21 2:3 6:6 26:3	35 26:5 27:2 57:20
143 5:3	128:22 129:13	155:2	36 54:8
149 26:13	130:15 131:1 132:9	2170 3:17	37 54:9,9 56:12
15 26:2 73:3	133:6,10 134:17,24	22 26:3 151:21	39 137:3
151 4:5	135:11,13 138:11	24th 145:9	4
152 26:14	139:3 142:6,8	25 26:3	4 68:14,17,18,23 69:12
153 26:14	151:15 153:5	25001522 2:11	69:21 70:24 73:4
158 26:14	2	2 26:4	40 26:5 27:1 58:15,18
159 26:14	2 22:22 106:11,15	26 26:4	58:19 59:22 73:15
16 4:20	107:1,6,16,18 109:4	28 128:16,23,24 129:6	73:18,24
160 26:14	109:9,12,18,24	129:15 130:22,25	40-something 24:23
163 26:14	111:1,4 116:6	140:23	402 70:2,6,14,23
165 26:14	140:22 155:5	29 131:7	41 26:5
169 26:14	20 22:23 26:3 73:23	3	42 26:5
17 5:7 26:2 50:8 51:9	103:25 141:12	3 25:19 130:14,22	420 66:3 67:24 68:19,24
170 26:14	154:22	131:7 137:5 155:6	69:11,14 70:12,15
	2002/0172368 4:24 55:9	30 26:4 46:10 137:21	43 26:6 125:8
	2004-166153 5:5 143:10	138:7,8 140:21	44 26:6 59:20,25 60:6
	2010 5:7,10 17:2,6 45:3,7	30-something 27:2	64:4 65:15
	50:4,6 51:7,17	31 27:12 28:5 42:2	45 5:10 26:6
	128:17 142:7	310 3:19	46 26:6
	2011 135:21 137:12	313	
	2025 1:21 2:3 6:6 155:2		
	2025-00003		

47 26:7	2:8	8
48 26:7	7	81 146:9 147:13,24 150:15
49 26:7	7 25:19	82 143:22 145:17,19,22 146:16,19 148:4,24 149:19 150:5,21,25 151:3,4
5	7A 80:22 81:1 83:7 84:2 86:2 87:16,18,19 89:8 90:25 97:18,20 98:13,20,21 99:6,18 99:19 100:7 102:6,6 104:11 105:1,6,18 106:8,9,13,24 107:5 107:10 108:23 109:23,24 110:20 110:25 111:2,14 112:22,23,24 113:8 113:9,11 114:5 115:3,5,20,24 117:3 117:10,23 124:23 124:24,25 125:14 125:16 126:22,25 127:6	84 66:25 67:2,4 68:2,6 68:12
5,000 88:23	7B 87:15 104:8 105:19 116:17,18,24 117:10,23,25 118:5 118:8,17 119:23 121:1,18 122:23 125:25 126:2,21,24 127:1,7,14,19	85 67:1,8,13,20 68:1,3,7 68:10,12,14 69:22 126:4
51 26:7	72 93:19 94:3,11 95:2 96:6 144:15,23	9
52 26:8	72nd 22:7	9,313,178 1:6 4:19 5:9 12:23 15:2 17:6
54 26:8	76 142:15 151:21 152:14	9:00 1:21 2:4 6:6
55 4:22 26:8	77 142:15 143:1,19,21 143:25 148:6 151:21 152:14	90025 3:18
57 26:8	78 142:6,11 151:15 152:3,5,8 153:15	91 98:1,4
58 53:8,16		92 106:21 110:20 116:7
6		93 26:10
4:4 25:19		94 26:10
600 3:5		95 56:23 79:11,15 122:3 122:12,18
61 26:9		975-7074 3:19
617 3:7		
62 26:9		
646-8000 3:7		
65 26:9 54:7,8 56:4,11		
66 26:9		
6804		