

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

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:  
TESLA, INC., :  
:  
Petitioner, :  
:  
v. : Case No.  
: IPR2025-00222  
INTELLECTUAL VENTURES II, :  
LLC, :  
:  
Patent Owner. :  
:  
- - - - - X

December 1, 2025  
10:00 a.m. EST

Deposition of ELI SABER, Ph.D., held via  
remote videoconference and taken stenographically  
by Misty Klapper, Registered Merit Reporter,  
Certified Shorthand Reporter, Registered  
Professional Reporter, Realtime Systems  
Administrator and Notary Public.

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P R O C E E D I N G S

ELI SABER, Ph.D.,

The witness herein, called for  
examination by the Petitioner, having been  
duly sworn, was examined and testified as  
follows:

EXAMINATION BY COUNSEL FOR PETITIONER

BY MS. SHI:

Q. Okay. Dr. Saber, you have had quite  
a few depositions taken before; is that right?

A. That is correct. Yes, I've had the  
fortune of having multiple depositions.

Q. Approximately how many times would  
you say you had a deposition?

A. Probably around 32, 33 times.

Q. And when is the most recent one?

A. Last Monday.

Q. Is that for -- also for Intellectual  
Ventures?

A. No. It's a different case entirely.

Q. Okay. So you are familiar with all  
these, but I will still try to go over some basic

1 ground rules.

2 Do you understand that you're under  
3 oath today?

4 A. Yes, I do.

5 Q. And is there any reason that you  
6 cannot provide truthful, complete and accurate  
7 testimony today?

8 A. No, there is not.

9 Q. And is there any other reason why  
10 your deposition should not go forward today, for  
11 example, medical reasons or any other reasons?

12 A. No, not at all.

13 Q. And as you can see from the reminder  
14 from our court reporter, please speak slowly --  
15 this applies to both of us -- one at a time. We  
16 will read slowly and whenever you need a break,  
17 please let me know.

18 Does that work?

19 A. That works great. Usually on the  
20 hour is a good time to have a break, five minutes  
21 on the hour.

22 Q. Great.

1                   So how many IPRs have you worked on?

2           A.       Oh, many. I don't remember off the  
3 top of my head. More -- more than 50 and  
4 probably less than 100.

5           Q.       And in how many of these IPRs did you  
6 work with patent owners?

7           A.       I -- I don't even know. I don't  
8 remember off the top of my head.

9           Q.       Okay.

10          A.       It's probably more petitioner side  
11 than patent owner, but I don't remember. It's  
12 been -- I've worked on this for so many years. I  
13 don't remember.

14          Q.       So you prepared an expert  
15 declaration, a technical report for this case; is  
16 that right?

17          A.       That is correct.

18          Q.       What is the process that -- for  
19 preparing your technical report in this case?

20          A.       I have a process that works very well  
21 for me. So I typically, obviously, study the  
22 materials carefully; discuss with counsel; and

1       then I provide an initial -- the initial  
2       declaration; and then it's a collaborative and  
3       interactive effort to get to the final document,  
4       which I review very, very carefully and sign.

5             Q.       So did you include all the documents  
6       that you reviewed for preparing your declaration  
7       in your report?

8             A.       That -- that is -- I believe that is  
9       the case, yes.

10            Q.       And who -- who did you work with for  
11       preparing the report?

12            A.       Mr. Theiss.

13            Q.       Can you give the full name, please.

14            A.       Yes. Mr. Brandon Theiss, counsel.

15            Q.       Thank you.

16                    Anyone else?

17            A.       No, not on this report.

18            Q.       So did you receive a Box link that  
19       includes the documents we're going to use today?

20            A.       I did.

21            Q.       Okay. Could you please open the Box  
22       link.

1           A.       I have it open.

2           Q.       Okay. And what documents do you see  
3 there?

4           A.       I see the expert declaration and I  
5 see the '158 patent.

6           Q.       Okay. So for -- generally for my  
7 question about the technology we're discussing  
8 about the technology that -- understood by a  
9 POSITA at the time of the earliest claimed  
10 priority date of the '158 patent, which is  
11 August 25th 2004.

12                   Is that clear?

13          A.       That is correct.

14          Q.       So what is a POSITA's understanding  
15 of image fusion at that time frame?

16          A.       Image fusion?

17          Q.       Correct.

18          A.       Well, depends on, obviously, the  
19 context of what you -- I mean, I would have to  
20 see what -- the context of what you are talking  
21 about, image fusion. But in the context of  
22 Matsushima, for instance, it would be inserting a

1 center image into a -- you know, a higher  
2 resolution center image into a lower resolution  
3 surrounding image, you know, or non-center image,  
4 I guess.

5 Q. Are there any -- what are some other  
6 known techniques for image fusion?

7 A. I mean, it depends on the  
8 application. I mean, you could do segmentation,  
9 for instance, and then -- you know, segment  
10 multiple channels and then fuse the information  
11 from multiple channels into a single  
12 segmentation. It -- it -- it depends on the  
13 application. Fusion is a pretty wide word.

14 Q. So image fusion was a well-known  
15 concept during 2004?

16 A. Well, it depends on what you mean  
17 exactly by fusion. So I would have to see an  
18 application and then I can tell you whether it  
19 was known or not, because people fused things  
20 after 2004 as well. So it all depends on what  
21 the application is and how the fusion is taking  
22 place. Sorry for -- and how the fusion is taking

1 place.

2 Q. So what are some of the applications  
3 for fusion, for image fusion?

4 A. Well, some of them could be  
5 segmentation, multiple channels into a single  
6 segmentation, basically image.

7 Another application could be, you  
8 know, for restoration, super resolution. There  
9 are different applications.

10 Q. When you say segmentation of multiple  
11 channels, what do you mean by multiple channels?

12 A. For instance, assume I have an RGB  
13 image. So R would be a channel, B would be  
14 another channel and G would be another channel.  
15 So red, green and blue channels, you may segment  
16 those separately or try to segment them in a  
17 cohesive fashion to yield a single segmentation  
18 for the image.

19 Q. So can the multiple channels be  
20 captured by the same camera?

21 A. That's generally the case, yes.  
22 They're generally captured by the same camera.

1           Q.       Can the different channels captured  
2 by different cameras?

3           A.       That's generally not the case.

4           Q.       So you were not aware of prior art  
5 capturing the different channels using different  
6 cameras?

7                   MR. THEISS:  Objection, scope.

8                   THE WITNESS:  I mean, as I said,  
9 that's typically not the case, but there  
10 are cases where one would need to do that.  
11 Like when we do hyperspectral,  
12 multispectral imagery, we do -- we do have  
13 different cameras that may capture  
14 different channels.

15                   But I don't believe I provided an  
16 opinion on this in a declaration.

17                   BY MS. SHI:

18           Q.       So when we are using different  
19 cameras to capture different channels --

20           A.       Was there a question there?

21           Q.       Give me one second.

22                   So could you please open your

1 declaration at Exhibit 2017.

2 A. Declaration at -- you mean open my  
3 declaration, correct?

4 Q. Correct.

5 A. Yes, I do have that open. And I do  
6 have a hard copy in front of me that counsel has  
7 sent, along with all the other exhibits, just so  
8 you are aware.

9 Q. Okay.

10 (Thereupon, Exhibit 2017,  
11 previously marked, was referred to.)

12 BY MS. SHI:

13 Q. So you have paper copies of all the  
14 exhibits in this case?

15 A. I have paper copies that counsel had  
16 sent of all the exhibits. They're clean copies  
17 that came in a couple days ago.

18 Q. Okay. So if you're using any of  
19 those copies, could you please let us know so --  
20 read out the exhibit number so that we have that  
21 on record.

22 A. Yes. I am using Exhibit 2017, my

1 declaration, at the moment that you have asked  
2 for.

3 Q. So in your declaration, for example,  
4 you talked about -- you used the word "fusion"  
5 throughout your declaration. For example --

6 A. Yeah, go ahead.

7 Q. -- some of the examples are at  
8 paragraph 78, 74, 76 --

9 A. Yes.

10 Q. -- 95, 114, 117.

11 A. Okay.

12 Q. So in the context of your  
13 declaration, when you use the word "fusion," what  
14 do you mean by fusion?

15 A. Well, if you look at the context, for  
16 instance, of paragraph 74 that you pointed to,  
17 you see there this section is talking about the  
18 plain construction in part A of the declaration.

19 So you see in that paragraph 74 that  
20 you pointed to the sentence where fusion is  
21 mentioned, you see it says -- you know, obviously  
22 we're -- we're commenting on the reading that the

1 petitioner suggested and explaining that that  
2 reading is at odds with the specification  
3 repeated statement that each channel operates  
4 under a different integration time and with the  
5 single-frame fusion objective.

6 So once you operate under the  
7 different integration times, you are going to  
8 fuse that information together, you know, in --  
9 in the -- you know, as described in the '158.  
10 That's the purpose of the fusion there.

11 Q. So are you using the fusion in  
12 paragraph 74 as used according to the  
13 understanding of a POSITA?

14 A. Yes, that's -- that's the --  
15 according to an understanding of POSITA in light  
16 of reading the specification of the '158.

17 Q. And what does the fusion mean here in  
18 this context?

19 A. I think I just explained that, but  
20 I'm happy to clarify it again.

21 Q. Sure.

22 A. So the specification is obviously

1 talking about each channel operating under a  
2 different integration time. And then the  
3 fusion -- in this case with a single-frame fusion  
4 objective, so bring it all -- basically all the  
5 information, fusing it together into a single  
6 image or, you know, a single -- single channel,  
7 if you wish, or, you know, single image or frame.

8 Q. Does fusion mean combine the two  
9 images?

10 A. Well, I mean, you are essentially  
11 combining them, but there's obviously a technical  
12 way of doing that. It's not just adding them  
13 together, so -- so that's why, you know, the  
14 terminology is used that way.

15 Q. What are the technical ways of doing  
16 it?

17 A. Doing what?

18 Q. You said you're essentially combining  
19 them, but there's obviously a technical way of  
20 doing that.

21 What are the technical ways of doing  
22 that?

1           A.       Well, the '158 describes how it's  
2 done, in a sense.

3           Q.       You have Exhibit 1001 in the Box  
4 folder. Could you please open the --

5           A.       Yep.

6           Q.       -- the PDF, Exhibit 1001.

7

8                   (Thereupon, Exhibit 1001,  
9 previously marked, was referred to.)

10           THE WITNESS: Yep. I have that  
11 open. And I'm also looking -- I have the  
12 hard copy in front of me as well.

13           BY MS. SHI:

14           Q.       Could you please confirm the hard  
15 copy is clean?

16           A.       Yes, the hard copy is clean. And  
17 it's marked as Exhibit 1001.

18           Q.       Okay. So you just said the '158  
19 describes the technical ways of doing that, which  
20 is combining the images.

21                   What are the technical ways described  
22 in '158?

1           A.       Well, if you look at column -- I  
2       mean, if you look at the citations, let's say, at  
3       paragraph 74, it describes -- you know, it  
4       describes what it's doing.

5                    So if you take a look at those -- you  
6       see those citations that are at the end of  
7       paragraph 74.

8           Q.       Could you please read that?

9           A.       Yes. The citations are -- 4:38 to  
10       4:45 is one citation; 53 -- column 5, lines 3 to  
11       18, is another one; and column 7, lines 36 to 39,  
12       is another one. There are others, obviously, as  
13       they're cited in the other paragraphs that you  
14       mentioned.

15          Q.       Please go to column 4, line 38.

16          A.       Yep.

17          Q.       So what -- which statement is  
18       describing technical ways of combining images?

19          A.       Well, it's starting a description  
20       there, but it goes -- it goes on from there into  
21       the next column. So it's -- it's not just one  
22       sentence. So it starts there, but then flows

1       into the next column.

2           Q.       When you say next column, are we  
3       talking about column 5?

4           A.       Yes.

5           Q.       Which line are you referring to?

6           A.       Well, I mean, it -- the description  
7       is throughout the column. Right? It's not just  
8       a single line. So it's describing -- if you look  
9       at column 4, for instance, it's describing -- if  
10      you look at the top of column 4, it's describing  
11      what it means by integration time.

12                   And then it -- starting at lines 37  
13      or 38 it's talking about the exposure and  
14      integration control. So it's discussing how this  
15      is happening. And it flows into column 5 and  
16      continues those discussions. And then it starts  
17      to refer to the figures.

18                   So it's not a single line of how this  
19      is happening.

20           Q.       So is it your opinion that a POSITA's  
21      understanding of fusion includes all the  
22      descriptions from column 4, line 38 through

1 column 5, line 11?

2 A. Well, a POSITA's understanding would  
3 come from reading the entire specification and,  
4 obviously, the claims. So you're not just  
5 reading one column or one line. So a POSITA  
6 would read the entire patent as it's written and  
7 form that understanding that I've described in my  
8 declaration.

9 Q. And what is a POSITA's understanding  
10 of fusion --

11 A. I think we already --

12 Q. -- in light of the specification?

13 A. I think we already went -- I already  
14 answered. I think we already discussed that.

15 Q. So is it correct that the '158 does  
16 not provide specific description of fusion  
17 algorithms?

18 A. No, that is not correct.

19 Q. Where does the '158 describe fusion  
20 algorithms?

21 A. Well, as I just mentioned to you.  
22 So, I mean, if you look, for instance, at the

1 background of the '158, you look at column 1,  
2 lines 62-ish, 61, 62, so you see at line 61 it  
3 says, Once numerous images have been taken at  
4 different exposure times, the images have to be  
5 fused or merged. So -- and it provides a  
6 citation there. But it does recognize that  
7 images have to be fused or merged into that  
8 single -- single frame, so to speak.

9 And then if you continue reading the  
10 patent, it gets into the detailed description of  
11 how it's doing that. If you go, for instance, to  
12 column 3, lines 57 to, let's say, 63 or so, 64,  
13 you can see there The digital camera systems,  
14 through the use of multiple integration times,  
15 enables formation of an image having a wide  
16 dynamic range and continues discussion --  
17 discussing this.

18 I mean, that's the purpose of the  
19 patent, is to get a wide dynamic range. And it  
20 continues a discussion of how that's done, how  
21 the shutter is -- is managed, how the integration  
22 time is independently handled and how it is

1 brought together. So you've got -- I mean, you  
2 have to read the whole thing.

3 Q. So how would you describe the state  
4 of art about image fusion as discussed in the  
5 background section from line 56 through --  
6 lines 56 through 66?

7 A. Of column 1?

8 Q. Column 1, correct.

9 A. Well, I mean, he discusses that  
10 there. You see in the patent they say, The  
11 dynamic range -- I'm looking at column 1,  
12 lines 57 through column 2, line 5 or so.

13 So you see in column 1, line 57 they  
14 state that, The dynamic range of an image sensor  
15 can be increased by using multiple exposure times  
16 and/or integration times.

17 So that disclosure is an important  
18 one for our discussions. You see they defined  
19 exposure times and/or integration times. So  
20 clearly they're not the same thing; otherwise,  
21 they wouldn't be saying exposure times and/or  
22 integration times.

1                   Then they give you an example for  
2                   that particular patent there. And then they say  
3                   once numerous images have been taken at different  
4                   exposure times, they have to be fused into a  
5                   single piece of pixel -- single piece of pixel  
6                   information having a wide dynamic range.

7                   And you see on column 2 they discuss  
8                   why this method might exhibit undesirable  
9                   temporal aliasing if the scene or camera is  
10                  moving.

11                  And then eventually they basically  
12                  get into, well, this is what they're proposing.

13                  Q.       So please go to your declaration,  
14                  Exhibit 2017, paragraph 66.

15                  A.       66.

16                  Q.       Can you please read paragraph 66.

17                  A.       Yep.

18                  Yes, I have read it.

19                  Q.       Oh. Can you please read it out,  
20                  please.

21                  A.       Sure. So I understand that under  
22                  Phillips versus AWH Corp. -- and there is a set

1 of numbers there -- claim language is not read in  
2 isolation. Rather, the claim language, when read  
3 in light of the specification and the prosecution  
4 history, elucidates the meaning of the claim  
5 language.

6 Q. Did you consider the specification  
7 when you're understanding the claim language?

8 A. Of course. I read the claims in  
9 light of the specification.

10 Q. And did you consider the prosecution  
11 history when you are reading the claim language?

12 A. Yes. And there's a section on that  
13 in my declaration with regards to the prosecution  
14 history.

15 Q. What documents related to the  
16 prosecution history did you consider?

17 A. I think they're cited in my  
18 declaration. There's a list of --

19 Q. Which paragraph?

20 A. There's a list of exhibits that are  
21 cited in my declaration.

22 So if you go to my declaration,

1 paragraph 3, there's a list of Exhibits 2007 to  
2 2016 that are cited in my declaration.

3 And there is a discussion on the  
4 prosecution history starting on page 17 of my  
5 declaration.

6 Q. So on page 17 you cited to  
7 Exhibit 1030, paragraph 46.

8 Do you see that?

9 A. Yes.

10 Q. Did you consider Exhibit 1030?

11 A. Yes. I mean -- yes.

12 Q. And right next to -- right above  
13 paragraph 46 there is a continuation family tree.

14 Do you see that?

15 A. Above paragraph 46 or below  
16 paragraph --

17 Q. Above paragraph 47.

18 A. That's correct, yes.

19 Q. Did you review the file history of  
20 the '803 patent application, which is the top of  
21 the tree?

22 A. I don't recall off the top of my

1 head. This has probably been in discussion with  
2 counsel. I don't recall off the top of my head,  
3 but I did -- I did review the relevant sections  
4 with counsel.

5 Q. And you have provided citations of  
6 the relevant parts in your declaration; is that  
7 right?

8 A. That is correct. So if you look at  
9 Section V of my declaration, so it talks about  
10 the prosecution history of the '803, the '122 and  
11 the '236 applications. And the '236 application  
12 is what eventually became the '158 patent that  
13 we're talking about today.

14 Q. And you have listed claim terms that  
15 you're construing, is that right, in Section VII?

16 A. I do have a section on claim  
17 construction, that is correct.

18 Q. Have you included in Section VII all  
19 the terms that you have construed?

20 A. I believe so. I mean, I believe so,  
21 yes. That -- that description should be -- you  
22 know, it's obviously irrelevant to our

1 discussions here. The rest of the claim terms,  
2 you know, claim the ordinary meaning from the  
3 eyes of a POSITA in light of the specification.

4 Q. Just to confirm, there are no other  
5 terms that you have construed, other than those  
6 listed in Section VII of your declaration?

7 A. To my knowledge that's correct, yes.

8 Q. Let's go to paragraph 70 of your --

9 A. Seven-zero?

10 Q. Seven-zero of your Exhibit 2017.

11 A. Okay. My declaration.

12 Q. Let me know when you're there.

13 A. I am there.

14 Q. Can you read the first sentence of  
15 paragraph 70.

16 A. Yes. So the first sentence states,  
17 In my opinion, a POSITA reading the claims under  
18 Phillips would give, quote, of each sensor,  
19 quote, operative effect consistent with the  
20 specification's architecture.

21 Q. Does the specification's architecture  
22 you mentioned here include the architecture of

1 Figure 3 of the '158 patent?

2 A. Well, it includes, obviously, the  
3 entire specification, discussion of all the  
4 figures, obviously, but Figure 3 is one of them.

5 Q. And does the specification's  
6 architecture you considered include the  
7 architecture of Figure 4 of the '158 patent?

8 A. Yes. It would include all the  
9 figures. I mean, the specification has multiple  
10 figures and description of them. So reading the  
11 specification from the eyes of a POSITA, that's  
12 the understanding you would come to.

13 Q. Figure 3 and Figure 4 of the '158  
14 patent are different embodiments described in  
15 '158; is that right?

16 A. Yes. So Figure -- Figure 3 says it's  
17 a block diagram of a digital camera subsystem  
18 20 -- 210, under --

19 Q. Sorry to interrupt. Just for the  
20 record, we're referring to Exhibit 1001,  
21 '158 patent, Figure 3; is that correct?

22 A. That's correct. You are correct.

1 Thank you for the correction.

2 So Figure 3 of the '158, you know, if  
3 you look at column 7, line 17, do you see it says  
4 that Figure 3 is a block diagram of the digital  
5 camera subsystem 210, under an embodiment?

6 And if you look at column 9 of the  
7 '158, line 63, it will say Figure 10 is --  
8 Figure 4 is a digital camera subsystem 410, under  
9 an alternative embodiment.

10 Q. So the architecture of Figure 3 falls  
11 within the scope of -- of each sensor as claimed;  
12 is that right?

13 A. I didn't understand your question.

14 Q. Okay. So you said a POSITA reading  
15 the claims under Phillips would give of each  
16 sensor operative effect consistent with the  
17 specification's architecture.

18 A. Yes.

19 Q. Is it correct that because Figure 3  
20 and Figure 4 are different embodiments, the term  
21 "of each sensor" does not require both the  
22 architecture of Figure 3 and the architecture of

1 Figure 4?

2 A. I don't understand what you mean. I  
3 don't understand your question.

4 Q. Does the embodiment Figure 3 fall  
5 under the scope of the term "of each sensor," as  
6 you construed?

7 A. Well, the claims obviously utilize  
8 the term "of each sensor." So if you look at the  
9 claims -- I'll just go to claim -- so, for  
10 instance, if you look at claim 2, it uses the  
11 word "of each sensor." And in claim 1 it's  
12 using, you know, to a sensor of the plurality of  
13 sensors. And then at the end of claim 1 you see  
14 it says the control and integration time of each  
15 sensor.

16 So when you read the claims in light  
17 of the specification from the eyes of a POSITA,  
18 you come to that understanding. Now, the  
19 embodiments there are an example, an  
20 illustration, of -- of what is being claimed.

21 Q. Is the embodiment of Figure 3 covered  
22 by the of each sensor language in claim 1?

1           A.       Well, if you'll look at Figure 3 and  
2       you read the description -- I'm on patent '158,  
3       column 7, line 17 and from there on.

4                    So patent '158, column 7, line, say,  
5       17, you have the description of Figure 3. It's a  
6       digital camera subsystem under an embodiment.

7                    And you see the next sentence there  
8       says the subsystem 210 includes one or more  
9       camera channels. And then the next sentence from  
10      there you see it says the digital camera  
11      subsystem 210, for example, is a four-channel  
12      signal integration, time control systems. You  
13      have four camera channels. But the embodiment is  
14      not limited to four, et cetera.

15                   And then it continues from there on  
16      describing. Each of the camera channels, 260A to  
17      260D, includes an optic component or portion and  
18      a sensor component or portion, et cetera,  
19      et cetera.

20                   So it's describing basically what is  
21      in Figure 3, where are all the items, and  
22      similarly for Figure 4.

1           Q.       So is it correct that the embodiment  
2 of Figure 3 is covered by the of each sensor  
3 language in claim 1?

4           A.       Yes. I mean, claim 1 is -- is --  
5 claims basically the invention. And when you  
6 read claim 1 in light of the specification from  
7 the eyes of a POSITA, you understand what, you  
8 know, of each sensor -- of each sensor would  
9 mean.

10          Q.       And is it correct that the separate  
11 embodiment of Figure 4 of the '158 patent is also  
12 covered by the of each sensor language of  
13 claim 1?

14          A.       Well, I mean, that's generally the  
15 idea. Like if you look at my paragraph 70, you  
16 see it's talking about of each sensor. And if  
17 you look at the next sentence from there, In  
18 ordinary engineering usage, control an  
19 integration time of each sensor denotes  
20 per-sensor control authority over the sensor, not  
21 a global exposure.

22                   And, you know, then the next sentence

1 in that paragraph explains that that  
2 understanding aligns with the patent's express  
3 definition of integration time, which is there in  
4 the patent. You know, there's a definition on  
5 column 4, lines 3 to, say, 8 or so.

6 And also, the previous paragraph, 69,  
7 talks about this as well.

8 Q. So just to be clear, is it your  
9 opinion that the of each sensor language of  
10 claim 1 is embodied in each of Figure 3 and 4 of  
11 the '158 patent?

12 A. Well, those are embodiments of the  
13 claims, but it's not limited to those  
14 embodiments.

15 Q. Thank you.

16 And you just read the statement in  
17 paragraph 70 about in ordinary engineering usage.

18 Do you see that, the second sentence?

19 A. Yes, I do.

20 Q. Does ordinary engineering usage you  
21 used in paragraph 70 here mean plain and ordinary  
22 meaning understood by a POSITA?

1           A.       Yes, that's generally the case. I  
2       mean, I -- as I said to you, I've read the claims  
3       and I've studied the claims and I've studied the  
4       specification and opined, you know, from the --  
5       in light -- you know, read the claims in light of  
6       the specification from the eyes of a POSITA.

7           Q.       And is it your opinion that this  
8       ordinary engineering usage of the term "control  
9       an integration time of each sensor" is consistent  
10      with the '158 patent's express definition of  
11      integration time?

12          A.       Yes. I mean, the patent provides a  
13      pretty express definition of it. If you look at  
14      column 4, lines 3 to 6, you can see there's an  
15      express definition of integration time in the  
16      patent.

17                  And if you look at the previous lines  
18      that I pointed you earlier, column 1, lines 57 to  
19      58, you see the patent distinguishes exposure  
20      time from integration time.

21                  So they do have an express definition  
22      of integration time on column 4. And I think

1       that's cited in my declaration.

2           Q.       So the term "of each sensor" requires  
3 individual control; is that correct?

4           A.       Just as it states in that paragraph.  
5 You know, it says denotes -- so when you have the  
6 control an integration time of each sensor, you  
7 basically have per-sensor control authority over  
8 the sensor. So each sensor can be independently  
9 controlled.

10          Q.       Is it your opinion that in ordinary  
11 engineering usage, a POSITA would have understood  
12 the term "control an integration time of each  
13 sensor" as excluding controlling each sensor  
14 using a common integration time?

15          A.       The -- as I -- as I opined in my  
16 paragraph 70, and clearly from the -- from  
17 paragraph 69, where the board has interpreted the  
18 processing component in the discussion there on  
19 paragraph 69 from a different IPR.

20                 So the control an integration time at  
21 each sensor means you have to be able to have  
22 per-sensor control authority. You have to

1 independently be able to control each sensor  
2 separately. So I should be able to control each  
3 sensor independently, not a common control to all  
4 of them.

5 And you see that in paragraph 69 you  
6 see the core -- the board interpreted the  
7 processing component of claim 1 and provided the  
8 underlying section of column -- of paragraph 69  
9 in my declaration. You see where it says, the  
10 processing components configuration as being able  
11 to control the integration time of an individual  
12 sensor distinct from the other sensors in the  
13 group.

14 So you should be able to control each  
15 of them independently, and then, you know,  
16 combine the information together at some later  
17 stage.

18 And you see the next paragraph there  
19 in 69, the next paragraph down you see it says  
20 each operate independently under a different  
21 integration time.

22 And then the same thing with the

1       underlying statement on the next paragraph under  
2       paragraph 69 on page 28. So ...

3           Q.       Is it your opinion that the  
4       statements you just quoted in paragraph 69 are  
5       consistent with the ordinary engineering usage  
6       for the term "control an integration time of each  
7       sensor"?

8           A.       That is correct. I think that's what  
9       I'm saying in paragraph 70, and that's consistent  
10      with the board's interpretation as well.

11          Q.       Can we go to paragraph 85, please.

12          A.       Yes.

13          Q.       Can you read the first sentence of  
14      paragraph 85.

15          A.       A scene is different from a  
16      photograph or still image.

17                  Ms. Shi, before we jump into that  
18      next section, do you think it would be good to  
19      have a five-minute break?

20          Q.       Yeah, we can -- yes.

21          A.       Before we dive into the --

22          Q.       Sure. Let's take a break.

1 MS. SHI: Please go off record.

2 (Thereupon, a brief recess was  
3 taken.)

4 BY MS. SHI:

5 Q. Okay. Let's go to paragraph 85 of  
6 your declaration, Exhibit 2017.

7 A. Okay. I am there.

8 Q. Can you read the first sentence.

9 A. Yes. A scene is different from a  
10 photograph or still image.

11 Q. Is this your understanding of the  
12 plain and ordinary meaning of a word, "scene"?

13 A. As described here in 85, in the  
14 context of the '158, that is correct, yes.

15 Q. In paragraph 85 did you rely upon the  
16 description in 185 [sic] related to scene?

17 A. One-eight --

18 Q. '158.

19 A. '158. Yes. I mean -- oh, yes.

20 I don't know what you mean by 185.

21 But -- yes.

22 Q. Sorry.

1           A.       Yes. Consistent with the usage in  
2           the '158 patent, obviously, and my -- my  
3           technical understanding, as well as what you see,  
4           the citation from this book over here.

5           Q.       Could you point to the sections of  
6           '158 related to your interpretation of the word  
7           "scene"?

8           A.       So there are several citations. And  
9           these are -- you can see those starting -- so if  
10          you take a couple of paragraphs step back in my  
11          declaration, if you -- for instance, if you go to  
12          the beginning of that section on page 32 of my  
13          declaration, you see I start the explanation  
14          talking about, you know, the -- the meaning of  
15          scene and the distinction between scene when  
16          you're talking about video imagery versus still  
17          imagery.

18                    If you look at paragraph 82 --  
19          well -- well, the first citation would come to  
20          the end of paragraph 81. So you see that  
21          citation there with regards to integration time  
22          and it's talking about from a -- from the scene.

1                   Then if you look at paragraph 82,  
2                   there are several citations from the '158 patent  
3                   with -- regarding to scenes and such that the  
4                   1 -- column 1, lines 52, 53, column 1, lines 43  
5                   to 45, column 2, 34 to 37, et cetera.

6                   So there are several citations in  
7                   these paragraphs that refer to the '158.

8                   Q.       Can you go to paragraph 88.

9                   A.       Yes.

10                  Q.       Can you read the second sentence of  
11                  paragraph 88. Please read it out.

12                  A.       The sentence that starts with the  
13                  word "such"?

14                  Q.       Correct.

15                  A.       Okay. So the sentence reads, Such a  
16                  scene requires, for example, a sequence of frames  
17                  generated during a continuous action in time and  
18                  space -- and that's an open quote/close quote --  
19                  rather than an isolated photograph or a still  
20                  image.

21                  And there is a citation there to  
22                  Exhibit 2011, which I believe, off the top of my

1 head, is the book that's cited in paragraph 85.

2 Q. Let's go to Exhibit 1001 --

3 A. Yes.

4 Q. -- column 2.

5 A. 1001, column 2.

6 Q. Can you read the sentence at line 31.

7 Start with To accommodate.

8 A. Yes. So column 2 -- '158, column 2,  
9 line 31, To accommodate lighting changes from  
10 scene to scene, open paren, the interscene  
11 dynamic range, close paren, an electronic shutter  
12 is used to change the integration time of all  
13 pixels in an array from frame to frame.

14 Q. What's the difference between from  
15 scene to scene and from frame to frame?

16 A. Well, you go -- if you go to  
17 paragraph 85 and you look at that figure that I  
18 put there, you can see from a figure a scene  
19 could be a collection of a shot -- or a  
20 collection of shots. And each shot is a  
21 collection of frames. So you can see, like, a  
22 hierarchy. Like you have the video, that's the

1 top of the hierarchy, so to speak, and then which  
2 is a collection of scenes. Each of -- scene is a  
3 collection of potentially shots and each of those  
4 shots is a collection of frames.

5 Q. Do you agree that the statement at  
6 1001, column 2, line 31 that you just read out --  
7 okay. Scratch that.

8 Can you read the sentence again at  
9 column 2, line 31.

10 A. Yes. So '158, column 2, line 31, To  
11 accommodate lighting changes from scene to scene,  
12 open paren, the interscene dynamic range, close  
13 paren, an electronic shutter is used to change  
14 the integration time of all pixels in an array  
15 from frame to frame.

16 Q. Is it your opinion that from scene to  
17 scene means from a scene to another scene?

18 A. Well, that's generally the case. I  
19 mean, you know, things are usually context  
20 dependent, but that's generally the case, you go  
21 from one scene to another scene. That's what  
22 from scene to scene means.

1           Q.       And is it your opinion that from  
2 frame to frame means from a frame to another  
3 frame?

4           A.       Yes. You go from one frame to  
5 another frame.

6           Q.       Could you also read column 2, line 28  
7 of the '158 patent.

8           A.       Column 2, line 28. So '158,  
9 column 2, line 28 --

10          Q.       Correct. Start --

11          A.       Yeah, with the word "typical"?

12          Q.       Correct.

13          A.       All right. So that reads basically,  
14 Typical scenes imaged by digital cameras have  
15 light levels that span a range including low  
16 light, open paren, 1-100 lux, close paren,  
17 moderate light, open paren, 100-1,000 lux, close  
18 paren, and bright light, open paren, 1,000 to  
19 1,000,000 lux, close paren, under outdoor  
20 conditions.

21          Q.       Is it correct that each scene  
22 described here has one light level?

1           A.       Well, I mean, you're standing -- it  
2 depends on, you know, if you're walking from  
3 indoors to outdoors, for instance, and it's kind  
4 of still the same scene, in a sense, you could be  
5 changing lighting conditions within that  
6 particular scene; or if you're capturing just an  
7 outdoor scene, then you may have more constant,  
8 you know, or slowly varying lighting conditions.

9                    So it depends on what the application  
10 is and the context of how it's being described.

11           Q.       Where did the '158 patent describe  
12 that a scene requires a sequence of frames  
13 generated during a continuous action in time and  
14 space?

15           A.       Where are you reading that sentence  
16 from?

17           Q.       Let's go to paragraph 88.

18           A.       Okay.

19           Q.       The second sentence of paragraph 88  
20 says --

21           A.       Yes.

22           Q.       -- a scene requires, for example, a

1 sequence of frames generated during a continuous  
2 action in time and space.

3 A. Yes.

4 Q. Where does '158 patent describe a  
5 continuous action in time and space?

6 A. Well, it's understood. I mean, when  
7 you -- when you're talking about digital video or  
8 you're capturing video, that's -- that's well  
9 understood. I mean, if you look at column 2,  
10 what we just read, you see it refers there to --  
11 where is it -- interscene dynamic range.

12 Do you see the word "interscene"  
13 versus in column 1, line 43 it refers to  
14 "intrascene"?

15 So intrascene is usually within, say,  
16 a given scene, versus interscene might be from  
17 scene to scene.

18 And clearly, as you read the -- the  
19 patent and the specification, it is talking about  
20 you know, video in this case, you know, scenes,  
21 you know, capturing basically frames of video.  
22 So it's -- it's understood from how it's being

1 described in -- in the patent.

2 Q. Is it your opinion that the '158  
3 patent inherently discloses that a scene requires  
4 a continuous action in time and space?

5 A. Well, I mean the word "inherently"  
6 has certain legal ramifications. But the point  
7 is a POSITA reading the '158 patent would clearly  
8 understand that the patent is talking about  
9 frames of videos, as described in the -- in my  
10 paragraph 85.

11 And that essentially means when you  
12 have frames of video, you have basically action  
13 in time, because the video frames are captured  
14 usually at 1/30 of a second, and you have in each  
15 frame potential movement. A deer might be moving  
16 from frame to frame. So you have spatial  
17 movement and you have time movement, you know,  
18 typically captured at 1/30 of a second.

19 So it's understood when you read the  
20 '158 what it's talking about.

21 Q. Can we go to paragraph 147 of your  
22 declaration.

1           A.       Yes.

2           Q.       Can you please read the first  
3 sentence of paragraph 147.

4           A.       First sentence. Yes. Paragraph 147  
5 of my declaration, The '158 patent, quote --  
6 sorry, let me repeat. Scratch that. Start  
7 again.

8                   Paragraph 147, The '158 patent ties,  
9 open quote, integration time, close quote, to  
10 focal plane shutter control of a  
11 charge-integration switch, open quote, the time  
12 the image sensor collects and integrates signal  
13 from the scene, close quote, implemented by, open  
14 quote, controlling a switch, open paren, e.g.,  
15 charge-integration switch, close paren, coupled  
16 or connected to the sensor, close quote,  
17 expressly labeled, open quote, focal plane  
18 shutter control, close quote.

19          Q.       Does claim 1 require controlling a  
20 switch?

21          A.       Well, if you go to claim 1 -- so you  
22 see in claim 1 it's claiming an image capture

1 device, as you can see from the claim, and it's  
2 claiming a plurality of sensors and a plurality  
3 of optic components and there is a wherein there.

4 And then the last part of the claim,  
5 that last claim element, a processing component  
6 configured to control an integration time of each  
7 sensor.

8 So it -- it's claiming the ability to  
9 control an integration time of each sensor. So  
10 you need to be able to identify -- you know,  
11 determine or identify that integration time for  
12 you to control it. So you have to be -- for you  
13 to control something, you have to have the  
14 ability to identify what you want and control it.

15 Q. So does claim 1 require controlling a  
16 switch?

17 A. Well, you have to be able to control  
18 the integration time. However you are  
19 controlling it is -- you have to have the ability  
20 to control the integration time of each sensor,  
21 so independently control that integration time.  
22 That could be done -- now, in this specification

1       they have -- you know, they discuss how that's  
2       done. But the claim claims the ability to  
3       control an integration time of each sensor.

4             Q.       Does claim 2 require controlling a  
5       switch?

6             A.       Well, claim 2 adds the limitation,  
7       narrows basically where the processing component  
8       is further configured to control an integration  
9       time of each sensor during a frame. So it's got  
10      to be able to do it, you know, during a frame.

11            So it makes an adjustment during  
12      frame 1. It might make a different adjustment  
13      during frame 2, et cetera. So it's got to do it  
14      with -- during the period of a frame.

15            Q.       Does claim 2 recite controlling a  
16      switch?

17            A.       Well, the word "switch" is not  
18      physically printed in claim 2, but claim 2  
19      recites the ability to control the integration  
20      time of each sensor during a frame.

21            So you have to be able to -- you  
22      know, it claims that capability.

1           Q.       Do you see in paragraph 147, continue  
2           from that sentence you recited, the -- the word  
3           "separately and simultaneously controlling an  
4           integration time of each channel"?

5           A.       Yes.

6           Q.       Does claim 1 require separately and  
7           simultaneously controlling an integration time of  
8           each channel?

9           A.       I think we went over that already,  
10          but I'm happy to answer it again. And there's  
11          more discussion on that earlier in my  
12          declaration. Like if you go back to the claim  
13          construction section of my declaration, there's  
14          more discussion on that in those paragraphs that  
15          we were talking about, like those prior  
16          paragraphs.

17                    But, yes, claim 1, as we said, you  
18          have to have -- you have a processing component  
19          configured to control an integration time of each  
20          sensor. So you have independent control of an  
21          integration time of each sensor. So there's --  
22          you're separately controlling them. And

1 obviously, you have to be able to control them  
2 simultaneously so that you can combine the result  
3 at the end. So when you read the specification,  
4 that comes clear.

5 And I think there's more description  
6 on that, like when you read claim 9 and claim 15,  
7 a little bit more -- more described.

8 Q. Let's go to claim 9 of the '158  
9 patent.

10 A. Yep.

11 Q. Is it your opinion that claim 9 also  
12 requires separately and simultaneously  
13 controlling an integration time of each sensor?

14 A. Well, if you read claim 9, I'm  
15 looking at the element that starts with a  
16 processing component. Do you see it says there  
17 you have a processing component that's coupled to  
18 the plurality of channels -- so it's got to be  
19 coupled to those channels -- wherein the  
20 processing component -- that just said a  
21 processing component, so you have the intercedent  
22 basis, so to speak -- is configured to determine

1 an integration time of each channel. So the  
2 processing component determines an integration  
3 time of each channel of the plurality of  
4 channels -- so it has the ability to determine  
5 the integration time of each channel of the  
6 plurality of channels that are part of this  
7 system -- wherein the processing component is  
8 configured to combine data from a plurality of  
9 channels received to provide an image.

10 So it's got to control the  
11 integration time of each channel and then be able  
12 to combine the data from the plurality of  
13 channels to produce the final image, produce an  
14 image.

15 Q. So is it your opinion that claim 9  
16 requires separately and simultaneously  
17 controlling an integration time of each sensor?

18 A. Yes. I think we've already answered  
19 that. So you have independent control of each --  
20 of the integration time of each channel. And you  
21 have to control them simultaneously because you  
22 have to be able to combine the image after a

1 certain few milliseconds to be able to say well,  
2 here is the image that resulted from that  
3 control.

4 So claim 9 you determine the value,  
5 so you have independent control over that, and  
6 then do a combination to create an image.

7 Q. Let's go to claim 15.

8 A. Yes.

9 Q. Is it your opinion that claim 15  
10 requires separately and simultaneously  
11 controlling an integration time of each sensor?

12 A. Yes, as it says there. And it's  
13 fairly similar language. You see it says,  
14 identifying an integration time for each of a  
15 plurality of channels.

16 So it's got to be able to identify  
17 the integration time for each of a plurality of  
18 channels of an image capture device and wherein  
19 the plurality of channels include a plurality of  
20 sensors. And then you see there its capturing  
21 the data by each sensor is based at least in part  
22 on the integration time and then generating an

1 image by combining the data captured by each of  
2 the plurality of sensors.

3 So it's got identify the integration  
4 time for each. So there's an independent  
5 identification there for each of them. It's got  
6 to capture the data. And it's got to combine the  
7 data into -- that's captured to produce your  
8 final image or your image.

9 So that has to be done, you know,  
10 within a certain few milliseconds of time.

11 Q. Let's go back to paragraph 147 of  
12 your declaration.

13 A. Yes.

14 Q. So is it correct that you're  
15 describing the '158 patent -- scratch that.

16 So let's go to the second -- can you  
17 please read the second sentence of paragraph 147.

18 A. The one that starts with The patent?

19 Q. Correct.

20 A. So the second sentence of  
21 paragraph 147 reads, The patent also teaches that  
22 the multichannel system images -- images the same

1 field of view substantially simultaneously, with  
2 channels each operating independently under a  
3 different integration time and with the  
4 processor, quote, separately and simultaneously  
5 controlling an integration time of each channel,  
6 end quote, followed by single-frame combination  
7 of those data.

8 Q. Does claim 1 require the same field  
9 of view captured by the multichannel system?

10 A. What was your question again?

11 Q. Does claim 1 require that the  
12 multichannel system images the same field of  
13 view?

14 A. Well, I mean, when you read the  
15 claim, the words "same field view" is not there.  
16 But when you read the claim in light of the  
17 specification, you understand that the device  
18 we're talking about, the channels are more or  
19 less aimed at that field of view of the scenery.

20 Q. So is it your opinion that claim 1  
21 requires that the multiple channels image the  
22 same field of view?

1           A.       Well, that's generally -- I mean,  
2       that's generally the case. That's practically  
3       the case.

4           Q.       Is your answer yes or no?

5           A.       Well, a claim doesn't use the word  
6       "field of view" in the claim element -- in the  
7       claims or the claim elements. But practically  
8       when you read the specification, you come to the  
9       understanding that the plurality of optic  
10      components are aimed at that same field of view,  
11      you know, practically speaking. But it  
12      doesn't -- it doesn't have -- it doesn't say  
13      that, so -- because you see -- if you look down  
14      on claim 4, you have more of the limitation. So  
15      it adds that limitation, where each sensor is  
16      configured to image the same field of view.

17                    So that limitation isn't there in  
18      claim 1. It's added in claim 4 to narrow down.  
19      But you don't have to do it in claim 1,  
20      essentially. But that's practically what is  
21      being -- what's being done. But it's not  
22      necessary to do that.

1           Q.       So your opinion is that claim 1 does  
2 not require that the multiple channels image the  
3 same field of view, correct?

4           A.       It's not required in claim 1. I  
5 mean, practically, obviously, you would be -- you  
6 know, that would be more or less the case. But  
7 it's not required in claim 1.

8                   Claim 4 brings in that additional  
9 requirement. See, it says, the device of claim 1  
10 wherein, and then you have each sensor is  
11 configured to image the same field of view.

12          Q.       So let's take a break for lunch. How  
13 about 30 minutes? Would 30 minutes work for --

14          A.       It works for me.

15                   MR. THEISS: That's fine for me.

16                   MS. SHI: Okay.

17                   THE WITNESS: I will be at my desk  
18 at 12:15.

19                   MS. SHI: Okay. That works. Thank  
20 you.

21                   THE WITNESS: Thank you.

22                   MR. THEISS: Thank you.

1 (Thereupon, at 11:45 a.m., a lunch  
2 recess was taken.)

3 ///

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1                   AFTERNOON SESSION           (12:16 p.m. EST)

2                   BY MS. SHI:

3                 Q.       Dr. Saber, could you please go to  
4                 paragraph 179 of your declaration. That's  
5                 Exhibit 2017.

6                 A.       I don't believe you've given me that  
7                 exhibit, correct?

8                 Q.       Oh, 2017. That's your declaration.

9                 A.       Oh, yeah, yeah. Yeah, my  
10                declaration.

11               Q.       Sorry about that.

12               A.       You're not -- I don't see anything in  
13               the drop folder, so I'm assuming there's nothing  
14               uploaded.

15               Q.       No, no, no new exhibits.

16               A.       And what was that paragraph number?

17               Q.       Paragraph 179.

18               A.       179.

19               Q.       Correct.

20               A.       Yes.

21               Q.       So paragraph 179 starts with,  
22               Multi-sensor, in-frame focal plane control.

1 Do you see that?

2 A. Yes.

3 Q. Does claim 1 require multi-sensor,  
4 in-frame focal plane control?

5 A. I think we've talked about this --  
6 the multi-sensor part.

7 So you see in claim 1, as well as  
8 claim 9 and 15, you see it says in claim 1 -- so  
9 let's just focus on claim 1.

10 You see it says a plurality of  
11 sensors. So that would make -- that makes it  
12 multi-sensor. You have a plurality of sensors.

13 Q. Does claim 1 require in-frame focal  
14 plane control?

15 A. Well, it requires the in -- the  
16 control integration time of each sensor  
17 independently, as we discussed. You see claim 2  
18 narrows that, so during -- during a frame.

19 So claim 1 is broader. Claim 2  
20 narrows it that the adjustment is done during the  
21 frame. And you would potentially do a different  
22 adjustment from frame to frame. Versus in

1 claim 1, you are controlling the integration time  
2 of each sensor independently.

3 Q. So is it your opinion that claim 1  
4 does not require in-frame focal plane control?

5 A. Well, it does provide you -- it does  
6 require that you have independent control of the  
7 integration time of each sensor. Claim 2 narrows  
8 that to during a frame. So you can make -- you  
9 make the adjustment during the frame.

10 But in claim 1, you could potentially  
11 make an adjustment and use it for three frames or  
12 something like that. But you still have to be  
13 able to control the integration time of each  
14 sensor while the frame is being captured.

15 Q. So is it correct that it's your  
16 opinion that claim 1 does not require in-frame  
17 control?

18 A. Does not provide the limitation of  
19 during a frame, because that's what claim 2 does.  
20 So claim 1 essentially has the independent  
21 control of the integration time of each sensor.  
22 And that would be -- you may be -- you may do

1       that and utilize that same setting, let's say, on  
2       multiple frames versus in claim 2 it's during a  
3       frame.

4             Q.       Does claim 1 require focal plane  
5       control?

6             A.       Well, if you read claim 1, as we've  
7       been discussing, you're controlling the  
8       integration time and you're doing that  
9       independently for each sensor. And when you read  
10      the claim in light of the specification, you come  
11      to the understanding that you have to be able --  
12      you know, what -- what's being discussed in  
13      paragraph 179, as you pointed to.

14            Q.       So it's your opinion that claim 1  
15      requires multi-sensor, in-frame focal plane  
16      control you described -- described in  
17      paragraph 179?

18            A.       So if you go to the specification,  
19      column 4 of the '158, line 46, column 4, line 46,  
20      you see where it says integration time control,  
21      which is essentially controlling integration  
22      time, also referred to as focal plane shutter

1 control, controls the time the electrical signal  
2 is integrated or accumulated by controlling a  
3 switch, e.g., charge integration switch, coupled  
4 or connected to the sensor or -- or a forward  
5 detection mechanism of a sensor.

6 So clearly the specification  
7 describes that.

8 Q. So paragraph -- continue with  
9 paragraph 179.

10 A. Yes.

11 Q. You listed three items, items --  
12 item 1, 2 and 3 of paragraph 179.

13 Do you see that?

14 A. Yes.

15 Q. Does claim 1 require all these three  
16 requirements of items 1, 2 and 3 of  
17 paragraph 179?

18 A. Well, as we've been discussing,  
19 claim 1 requires the processing component to be  
20 configured to control an integration time of each  
21 sensor independently.

22 So to be -- and the specification --

1       when you read that in light of the specification,  
2       what is -- how is integration time controlled --  
3       how is integration time defined, how is it  
4       controlled, you come to that understanding that  
5       you have to have -- for you to have independent  
6       control, you would need these items.

7           Q.       Does claim 1 require all these three  
8       items, 1, 2 and 3?

9           A.       I think I just answered that  
10      question.

11          Q.       Is it yes or no?

12          A.       So as I said, and I'll repeat, that  
13      you have a processing component configured to  
14      control an integration time of each sensor, you  
15      know, independently. You're controlling an  
16      integration time of each sensor independently, of  
17      which, obviously, you're combining that.

18                 So when you read that claim in light  
19      of the specification with what the specification  
20      defines as integration time and integration time  
21      control and that section I pointed you to in  
22      column 4, lines 46 to 50, you come to that

1 understanding, that you have to have these items  
2 to be able to have independent integration time  
3 control.

4 Q. Is it your opinion that the '158  
5 patent inherently discloses items 1, 2 and 3 of  
6 paragraph 179?

7 A. Well, again, the word "inherently"  
8 has a certain legal meaning, so I don't want to  
9 get into the legal aspect of it.

10 But a POSITA reading the -- reading  
11 claim 1 and reading the '158 specification and  
12 how is integration time defined and how is  
13 integration time controlled described -- and  
14 obviously with the paragraphs that follow from  
15 that section I pointed you to, a POSITA would  
16 come to the understanding that you have to have  
17 these three items to be able to do the  
18 independent control and then eventually  
19 combine -- combine the data to produce the image.

20 Q. Is it correct that you listed three  
21 items in paragraph 179 with the connection words  
22 "and/or"?

1           A.       Yes.

2           Q.       What does the use of and/or mean  
3 here?

4           A.       So it's probably the "and" more than  
5 the "or." I think that might be a typo, because  
6 if you look back at my declaration at  
7 paragraph 114 -- I'm doing a quick search here,  
8 so just give me a moment.

9                    So if you look at my declaration in  
10 paragraph 114, it's essentially the same language  
11 there. Right? So it's essentially the same  
12 language -- not exactly word for word, but the  
13 same idea being described.

14                   So you have the independent  
15 shutter-gate generation per sensor, the  
16 cross-sensor start/stop and then the downstream  
17 synchronization.

18                   I think here it really should be an  
19 and rather than or. So you would need -- you  
20 would need to have all three functionality to  
21 have independent integration control.

22           Q.       So are you saying that in

1 paragraph 179 of your declaration, the and/or  
2 really means and?

3 A. I -- I think that's -- that's more  
4 practical and more accurate, correct. Yes,  
5 that's correct.

6 Q. So all of items 1, 2 and 3 of  
7 paragraph 179 are required by claim 1; is that  
8 right?

9 A. Well, let me point you back to  
10 paragraph 114, just so -- because I think it's a  
11 little bit clearer.

12 So if you go to paragraph 114 in my  
13 declaration, which is essentially describing the  
14 same thing, so you see in that paragraph it's  
15 stating that, From an imaging system  
16 standpoint -- I'm at paragraph 114, page 51 --  
17 independent integration time control in a  
18 multi-sensor camera is not achieved by merely  
19 noting that each CCD has a so-called electronic  
20 shutter function.

21 And then the next sentence you see  
22 where it says, To actually implement different

1 in-frame integration windows on two CCDs that are  
2 capturing the same overall frame, a POSITA would  
3 expect three concrete ingredients in the  
4 disclosure.

5 So you would need the independent  
6 shutter-gate generation to be able to -- to do  
7 that independently. You need to be able to have  
8 a cross-sensor start/stop orchestration because  
9 you're trying to combine an image at the end, so  
10 you've got to be able to tell each sensor when to  
11 start, when to stop. And then you have to get  
12 the downstream synchronization and fusion within  
13 a single frame to produce the frame at the end.

14 So notice there there's just an and,  
15 not an or. So I think that describes it probably  
16 very well. I think this is a good description of  
17 it. And obviously, each one of these is  
18 described in detail afterwards.

19 Q. Where does '158 describe downstream  
20 synchronization?

21 A. So the description kind of starts in  
22 column 4, at the top of column 4. And I'm not

1 going to read the entire column for you on the  
2 record and column 5, but I'll just pick a few  
3 points to make my point there.

4 So you see in column 4 at the top of  
5 the column where we talked about it defines what  
6 integration time is. Then later on in the  
7 column, where I pointed you to disclosure  
8 column 4, lines 46 to 50, it talks about  
9 integration time control and how an electrical  
10 signal is integrated or accumulated by  
11 controlling the switch. And then it -- it talks  
12 a little bit more about it.

13 Now, if you go to the next column,  
14 column 5 of the '158, you see at the top -- the  
15 top paragraph, roughly lines 3, 4, et cetera, so  
16 you see it says, The processing component is  
17 configured to separately and simultaneously  
18 control an integration time of each channel. So  
19 you control them separately and you're  
20 controlling them simultaneously.

21 And you see the next sentence there,  
22 it says it's controlled relative to the

1 integration time of at least one other channel.  
2 So there's relative control between them. And if  
3 you look at that sentence more carefully, so you  
4 see it says -- I'm on column 5, line 6 to the end  
5 of that paragraph, line 11.

6 So you see it says the integration  
7 time of at least one channel is controlled  
8 relative to the integration time of one other  
9 channel, so that the image formed by combining  
10 the data of -- you know, of a frame received  
11 simultaneously from the channels has a large --  
12 so you're combining the data at the end.

13 So you're doing essentially separate  
14 control, simultaneous control, which is -- is,  
15 you know, synchronization in a sense, and then  
16 you're combining the data received  
17 simultaneously -- so that's, you know, talking  
18 about synchronization -- from the channels to  
19 create that final image that has a relatively  
20 large dynamic range.

21 And there's more descriptions there,  
22 but I think this hits the point.

1           Q.       So is it your opinion that downstream  
2       synchronization is described as combining data of  
3       a frame received simultaneously?

4           A.       Well, I mean, think about what is  
5       going on here. You have multiple sensors. Let's  
6       just say two for the purpose of an example. I'm  
7       controlling the integration time of each sensor  
8       independently. And at the end of the day, I have  
9       to produce an image that's collected from both of  
10      these sensors.

11                 So I have to control them  
12      independently. I have to control them within  
13      some kind of a window, few milliseconds. And  
14      then, when I get the data from that after proper  
15      filtering and AED conversion, whatever, I  
16      eventually have to put that data into a frame in  
17      a synchronized manner.

18                 So the pixels from the first sensor  
19      and the second sensors in a sense go in the right  
20      places in the frame.

21           Q.       And that requirement is based on a  
22      POSITA's knowledge; is that right?

1           A.       Well, a POSITA reading the '158  
2       specification would understand what is being  
3       described here, that you -- doing separate  
4       control, independent control of the integration  
5       time, you're doing it simultaneously within some  
6       window or during a frame, as described in  
7       claim 2., and you have to have cross-sensor  
8       synchronization because you don't want one sensor  
9       to start, say, now, and the other sensor to start  
10      half an hour later. So -- I'm exaggerating,  
11      obviously. So you have to have some cross-sensor  
12      synchronization so that you can start the sensors  
13      with some relative times to each other as you  
14      need.

15                   And then you've got to eventually  
16      combine it into an image at the end of the day,  
17      data into an image, because otherwise you just  
18      have separate datas from separate sensors.

19           Q.       Can we go to claim 1 of Exhibit 1001.

20           A.       Yes.

21           Q.       Which claim limitation requires the  
22      three items discussed in paragraph 114?

1           A.       So you see in paragraph 114 where it  
2 says independent integration time control.

3                    You see that?

4                    I mean, this section is referring  
5 to -- let me step back a bit.

6                    This section is obviously referring  
7 to Matsushima and how Matsushima fails to  
8 disclose independent integration time control of  
9 each sensor. So that's essentially the title of  
10 the section. Right?

11                   So paragraph 114 -- sorry, wait a  
12 minute. No. Sorry. I misspoke. Scratch what I  
13 just said.

14                   This section is still talking about  
15 Matsushima, but it's -- the title is C, not B.  
16 And, I mean, this is an overall section under  
17 ground 1.

18                   And paragraph 114 is addressing the  
19 element C in my declaration that -- about  
20 independent per-sensor control. So you see it  
21 says, independent integration-time control in  
22 paragraph 114, the very first sentence. And

1       that's what we've been talking about in claim 1.

2               So you see in claim 1 it says, a  
3       processing component configured to control an  
4       integration time of each sensor. So it's  
5       independently controlling integration time of  
6       each of the sensors in your multi-sensor camera  
7       that's described in '158.

8               And for you to do that, you need to  
9       be able to do these things.

10       Q.       Are you construing claim 1 in light  
11       of what Matsushima discloses?

12       A.       No. I'm reading claim 1 as a POSITA  
13       in light of the specification and essentially  
14       stating what is -- you know, how would you  
15       accomplish what's being described in claim 1.

16       Q.       Is it your opinion that claim 1  
17       requires three ingredients, 1, 2 and 3, listed in  
18       paragraph 114?

19       A.       Well, for you to accomplish -- I  
20       mean, you can also look at claim 9, for instance,  
21       which is kind of a similar claim, where there's a  
22       little bit more, you know, details there. So you

1 see in claim 9 the second element -- let me call  
2 it 9B, the one that starts with a processing  
3 component.

4 So you see where it says the  
5 processing component -- wherein the processing  
6 component is configured to determine an  
7 integration time of each channel of the plurality  
8 of channels and also configured to combine the  
9 data from a plurality of channels to produce or  
10 provide an image.

11 So you're essentially doing the same  
12 thing with claim 1. You have a processing  
13 component that's configured to control the  
14 integration time of each sensor and --  
15 independently, so for you to eventually reduce  
16 the image that's being captured.

17 Q. So it's your opinion that claim 1  
18 requires all these three ingredients in claim --  
19 scratch that.

20 Is it your opinion that claim 1  
21 requires all three ingredients, number 1,  
22 number 2 and number 3, listed in paragraph 114?

1           A.       Well, I think I state that in  
2 paragraph 114. So you see it says, From an  
3 imaging systems standpoint, independent  
4 integration time control -- which is what claim 1  
5 is talking about. You want to control an  
6 integration time of each sensor independently.

7                   So independent integration time  
8 control in a multi-sensor camera, which is what  
9 we have in claim 1, is not achieved by doing  
10 this. To actually implement it -- for you to  
11 implement different in-frame integration windows  
12 on the CCDs, you would need to have these three  
13 components or these three ingredients, as you  
14 call it.

15                   So for you to be able to accomplish  
16 integration -- independent integration time or  
17 control of the independent integration time of  
18 each sensor independently and create an image at  
19 the end, you have to have -- to be able to do  
20 independent shutter-gate generations, you have to  
21 be able to cross-sensor -- basically have some  
22 cross-sensor synchronization and then, you know,

1 eventually combine the data at the end to create  
2 the image.

3 So you would need to be able to do --  
4 and that's what a POSITA would come to by reading  
5 the '158 specification.

6 Q. So let's again go back to claim 1.

7 Which part of claim 1 requires the  
8 ingredients 1, 2, 3 in paragraph 114?

9 A. I think I just explained that. I  
10 believe I already answered your question.

11 Q. Okay. So is it -- I believe you  
12 labeled them as element 1.0, 1.1, 1.2, 1.3.

13 Is that correct?

14 A. I don't remember what I labeled them,  
15 but claim 1 has basically three elements, a  
16 plurality of sensors, a plurality of optic  
17 components, dot dot dot, and a processing  
18 component, dot dot dot. So there's three  
19 elements there.

20 Q. And which element requires the  
21 ingredients 1, 2, 3 in paragraph 114?

22 A. Well, for you to accomplish what is

1 described in claim 1, claim 1 calls for a  
2 plurality of sensors. Paragraph 114 talks about  
3 a multi-sensor camera. So you have a plurality  
4 of sensors.

5 Claim 1 claims a plurality of optic  
6 components and -- that are part of the plurality  
7 of sensors. And paragraph 114 talks about  
8 basically the control of these optic components.

9 And claim 1 claims a processing  
10 component configured to control an integration  
11 time -- you know, we're talking about independent  
12 control of an integration time of each sensor.

13 Paragraph 114 talks about how you  
14 would do -- for you to do that control of an  
15 independent integration time of each sensor, you  
16 would need to be able to do these -- these three  
17 items because you're doing independent control.

18 So you have to have independent  
19 shutter-gate generation per sensor to do the  
20 independent control per sensor. You have to have  
21 a cross-sensor, basically, synchronization, if  
22 you want to call it or cross-sensor, you know,

1 abilities. And then you have to have the  
2 downstream synchronization to fuse into an image,  
3 whatever has been created by the sensors.

4 So that would be -- otherwise, you  
5 wouldn't be able to create the image that we are  
6 talking about.

7 Q. So in ordinary engineering usage, the  
8 claim term "control an integration time of each  
9 sensor," as recited in claim 1, requires all  
10 these three ingredients listed in paragraph 114;  
11 is that right?

12 A. Well, for you to be able -- as I've  
13 already answered that at least twice now, for you  
14 to be able to independently control the  
15 integration time of each sensor and create an  
16 image at the end, you have to have basically  
17 the -- the independent abilities of control, the  
18 cross-sensor, you know, orchestration and the  
19 downstream synchronization and fusion.  
20 Otherwise, you don't have an image at the end.  
21 And it makes -- makes -- makes perfect sense.

22 Q. Which part of claim 1 requires

1 providing an image at the end?

2 A. Well, you see it says an image  
3 capture device. So it's an image capture device.  
4 So you're capturing an image by the device.

5 Q. Any other limitation in claim 1 that  
6 requires providing an image at the end?

7 A. Well, I mean, in claim 1 you're  
8 essentially -- you have an image capture device  
9 that has a plurality of sensors, a plurality of  
10 optics and processing component to control an  
11 integration time of each sensor.

12 So that essentially -- for you to  
13 accomplish these, you would need essentially the  
14 ingredients in paragraph 114 that we've been  
15 talking about.

16 Now, if you look at claim 5, you  
17 have -- it adds an additional limitation, where  
18 the processing component is further configured to  
19 combine data from a plurality of sensors to  
20 provide an image.

21 So claim 5, you know, limits --  
22 provides an additional limitation, so to speak,

1       that you're combining the data to provide an  
2       image. But claim 1 talks about an image capture  
3       device.

4             Q.       Okay. Let's go to dependent claim 7.

5                     Do you see dependent claim 7? Can  
6       you please read out dependent claim 7.

7             A.       Yes. The device of claim 1, where  
8       the integration time is controlled based on an  
9       external input.

10            Q.       Does the external input need to be  
11       separately and simultaneously provided to control  
12       the integration time?

13                   MR. THEISS: Objection, scope.

14                   THE WITNESS: I don't believe I  
15       provided any opinions on claim 7. And I  
16       don't believe it's part of this petition,  
17       if I'm not mistaken.

18                   BY MS. SHI:

19            Q.       Did you consider dependent claim 7  
20       when you're reading claim 1 and claim 2?

21            A.       I mean, obviously I've read the --  
22       the claims -- I've read the claims. I've read

1 the specification. But I was not asked to  
2 provide any opinions on claim 7, since I don't  
3 think it's part of this proceeding, if I'm not  
4 mistaken.

5 Q. Let's go to claim 8. Can you please  
6 read claim 8.

7 A. So claim 8 says, The device of  
8 claim 1, wherein the integration time is  
9 controlled based on incident light level.

10 Q. Does claim 8 requires that the  
11 integration time is separately and simultaneously  
12 controlled based on incident light level?

13 A. I think we've gone over this already  
14 a few times, but the integration time in this --  
15 in -- in the '158 is independently controlled for  
16 each sensor. Period. So -- and that's clearly  
17 described in the specification.

18 Q. Let's go to claim 9.

19 A. Yes.

20 Q. Which limitation of claim 9 requires  
21 the three ingredients?

22 A. I think I've -- I've already said

1       that with my -- when I answered previous  
2       question, but we can go over it again.

3               Do you see claim 9 is a system claim.  
4       So it's claims of plurality of channels and  
5       states that each channel has a sense -- includes  
6       a sensor. And it then claims a processing  
7       component coupled to the plurality of channels.  
8       So you have a processing component, like a CPU,  
9       coupled to the plurality of channels, where the  
10      processing component is configured to determine  
11      an integration time of each channel of the  
12      plurality of channels.

13             So again, it's independently handling  
14      that integration time, as we've been discussing,  
15      and also wherein the processing component is  
16      configured to combine the data from the plurality  
17      of channels received to provide an image.

18             So it's going to determine the  
19      integration time, control that, and then combine  
20      the data to essentially provide you with the  
21      image that you're looking for.

22             Q.       Is it your opinion that the entirety

1 of claim 9 requires the ingredients 1, 2 and 3 in  
2 paragraph 114?

3 A. I think that's what the paragraph  
4 states, but let me be clear.

5 For you to accomplish independent  
6 integration time of each channel, you would need  
7 ingredient 1, obviously, because that's what it  
8 says. And also you need to be able to do  
9 cross-sensor start/stop to be able to get the  
10 multiple sensors processing, you know, as you  
11 create an image. And then you have to fuse the  
12 information at the end, you know, synchronize and  
13 fuse the information to provide the image.

14 So for you to accomplish what's being  
15 claimed in claim 9, you would need these -- you  
16 know, these three ingredients, as you refer to  
17 them, generally speaking, obviously.

18 Q. Let's go to claim 15.

19 A. Yes.

20 Q. Is there any specific limitation of  
21 claim 15 that requires the three ingredients  
22 described in paragraph 114?

1           A.       Well, I mean, 15 is -- is a method  
2 claim versus 9 was a system claim. But  
3 essentially you're identifying an integration  
4 time for each of the plurality of channels. So  
5 you're going to identify integration time for  
6 each of them. And that means they could be  
7 independent.

8                   You know, they -- they don't have to  
9 be the same one because you see in claim 16 it  
10 says, first sensor is less than, the second  
11 integration time of a second sensor. The first  
12 integration -- a first integration time of a  
13 first sensor is less than a second integration  
14 time of a second sensor.

15                   So clearly I've got to be able to set  
16 the integration time for my first sensor to be  
17 .1 millisecond -- I'm making this up  
18 number-wise -- and then the other one may be .2.  
19 So I have to be able to set them independently.

20                   And then I'm capturing data -- the  
21 second element, capturing data at least -- you  
22 know, which is based at least in part on the

1 integration time. So I'm capturing the data.  
2 And then I'm generating an image by combining the  
3 data captured by the sensors.

4 So for you to accomplish this, you  
5 would need what's being described in  
6 paragraph 114.

7 Q. You refer to claim 16.

8 How does claim 16 -- your  
9 understanding of claim 16 affect the scope of  
10 claim 15?

11 A. Well, claim 16 essentially says  
12 wherein the first integration time is less than  
13 the second integration. So it narrows it. So a  
14 first integration time of a first sensor -- let's  
15 call that sensor A -- is less than a second  
16 integration time of a second sensor -- call that  
17 sensor B.

18 So sensor A has .1 millisecond,  
19 sensor B has .15 millisecond. So it's  
20 limiting -- you know, it's providing an  
21 additional limitation that one may be less than  
22 the other, versus in 15 you're defining

1 integration time that could both be the same, but  
2 you're defining them independently.

3 Q. Can you go to claim 19.

4 A. Yes.

5 Q. Can you read --

6 A. So --

7 Q. -- claim 19, please.

8 A. Sure. So claim 19 states, The method  
9 of claim 15, further comprising separately  
10 controlling a parameter of an optics component  
11 associated with each channel of a plurality of  
12 channels.

13 Q. Does claim 19 require simultaneously  
14 controlling a parameter of an optics component?

15 A. I think you misread the claim. What  
16 it says is, further comprising separately -- not  
17 simultaneously -- separately controlling a  
18 parameter of an optics component. So that's what  
19 the claim is claiming.

20 Q. Does claim 19 require independently  
21 controlling a parameter of an optics component?

22 A. Well, if you're controlling it

1       separately, that means you have the ability to  
2       control -- optic component from sensor 1  
3       controlled separately from optic component from  
4       sensor 2. So you have the ability to control  
5       them separately.

6           Q.       So is it your opinion that separately  
7       controlling a parameter includes independently  
8       controlling a parameter?

9           A.       Well, you have to be able to control  
10      them separately. I mean, let's just use the same  
11      language as the claim.

12                   I have to have the ability to  
13      separately control this element from that  
14      element. I can control that one, set that one to  
15      be alpha and set the other one to be beta. So I  
16      have separate control of a parameter. So I can  
17      control the first one and set the parameter to be  
18      alpha, control the second one and set that  
19      parameter to be beta. So ...

20           Q.       So is it your opinion that claim 19  
21      requires separately controlling, but not  
22      independently controlling?

1           A.       I think you're getting into  
2       wordsmithing of language that's really not  
3       necessary in here and just adds confusion. But  
4       the claim basically states separately controlling  
5       a parameter. And as I have explained to you  
6       means I have to be able to control optic sensor 1  
7       or optic component parameter 1, set that to  
8       alpha. And I have the ability to control the  
9       other one and set that to beta.

10                So that's clearly described in that  
11       claim. I think that's as best as I can say it.

12           Q.       Let's move back to your declaration.  
13                    Can we go back to paragraph 179,  
14       please.

15           A.       179, which is essentially the same as  
16       114. Yes.

17           Q.       So you just said that the three items  
18       of 179, which here you're referring to them as  
19       three concrete mechanisms.

20                    Do you see that?

21           A.       Yes.

22           Q.       You said these are the same,

1       essentially, as the three concrete ingredients of  
2       114; is that correct?

3           A.       I mean, generally speaking, yes.  
4       Yes. I mean, you're referring to the same -- to  
5       the same items, whether you call them mechanisms  
6       or ingredients. You know, I could have just  
7       copied paragraph 114 and placed it here and  
8       probably saved us a lot of trouble in this  
9       discussion.

10               But it's essentially the same, that  
11       idea, yes. You have to have basically these  
12       mechanisms or ingredients, if you want to call  
13       them.

14           Q.       Give me one -- one minute.

15               So we just clarified that 119 [sic]  
16       paragraph here, the and/or should be corrected as  
17       and only; is that right?

18               Hello?

19           A.       Yes. Yes. I'm taking another look  
20       at the paragraph.

21           Q.       Sure.

22           A.       Yeah, I think it's -- an and would

1       probably be -- be better in this case, because  
2       you have to have per-sensor shutter-gate  
3       generation to be able to do the independent  
4       control within a frame. You have to have  
5       in-frame cross-sensor synchronization because  
6       you're controlling multiple sensors. You've got  
7       to be able to synchronize that. And you have to  
8       have feedback-to-gate wiring per sensor so that,  
9       you know, you're doing the appropriate controls.  
10      And eventually that data will be combined into --  
11      into an image.

12                   MS. SHI: The record says -- it's  
13                   paragraph 119, please correct it to  
14                   paragraph 179, please.

15                   BY MS. SHI:

16                   Q.       To clarify, we were discussing  
17                   paragraph 179 of your declaration.

18                   A.       That's correct.

19                   Q.       So could you please confirm that the  
20                   concrete ingredient of one of paragraph 114 is  
21                   the same as the concrete mechanism of  
22                   paragraph 179?

1           A.       Well, I mean, the general idea is --  
2       is the same. In -- in 179 where you're doing --  
3       I mean, we're talking about the feedback-to-gate  
4       wiring per sensor that would be understood, you  
5       know, from 114 for you to accomplish what's being  
6       done in 114.

7                   And in 114 you have the downstream --  
8       downstream synchronization and fusion, which is  
9       not really stated here in 179.

10                  So, I mean, you have to have the  
11       independent shutter-gate, you know, generation  
12       and control. You have to have the cross-sensor,  
13       which is essentially stated in both. And in 114,  
14       you -- you have -- we -- we bring in the third  
15       element, which is the downstream synchronization  
16       and fusion to create the image.

17                  In here, since we're talking about  
18       Miyazaki, you know, we're kind of talking in the  
19       context of Miyazaki. But, yes, you have to have  
20       essentially these -- the mechanisms of 114 to  
21       generate the image essentially.

22           Q.       So is there any specific -- scratch

1       that.

2                       So claim 1 -- is it your opinion that  
3 claim 1 requires all three mechanisms of  
4 paragraph 179?

5                       MR. THEISS: Objection, asked and  
6 answered.

7                       THE WITNESS: I don't understand  
8 your question beyond what I just answered,  
9 which I think I've already answered that  
10 question. But I don't understand what  
11 would be -- what would be any different  
12 from what you just asked me. I don't  
13 understand, I guess, what your question  
14 is.

15                       BY MS. SHI:

16               Q.       Is it your opinion that claim 1  
17 requires --

18               A.       I do -- I do want to make a  
19 correction, though.

20                       I want to make -- make sure that we  
21 clear something up, though.

22                       I think 114, which I -- I might have

1 state that already, but let me make sure it's  
2 clear.

3 See, in 114 we're essentially talking  
4 about the independent integration time control  
5 and the multi-sensor and what the ingredients  
6 need to be.

7 In paragraph 179 we're referring to  
8 Miyazaki. So that's -- basically we're saying  
9 multi-sensor require three -- so you're taking --  
10 you know, 179 is essentially taken out of context  
11 a little bit because it's talking about Miyazaki  
12 here, not just in general.

13 And so you see it says requires three  
14 concrete mechanisms that Miyazaki does not  
15 disclose. And that's why the "or" is there  
16 because Miyazaki doesn't disclose i, ii or iii.  
17 That's why the "or" is there.

18 So I just noticed that because when I  
19 read back through the paragraph, I understand why  
20 that "or" is there now. So that's -- it should  
21 be and/or, as stated. So it's not incorrect the  
22 way it's stated.

1           Q.       Could you please read the section  
2 header that -- of this paragraph 179.

3           A.       So the section header is The  
4 Purported Combination of Yu and Miyazaki Fails to  
5 Meet All of the Limitations of the Challenged  
6 Claims. And this is -- and this is under  
7 Section B of this declaration.

8           Q.       So is it your opinion that Miyazaki  
9 doesn't meet a limitation of claim 1?

10          A.       My opinion is in these paragraphs  
11 that we are talking about here, starting at  
12 paragraph 177, that the combination of Yu and  
13 Miyazaki fails to meet all of the limitations of  
14 the challenged claims. And a description is  
15 there, including paragraph 179 that we've been  
16 talking about for quite a while now.

17          Q.       So which limitation of claim 1 are  
18 you discussing regarding paragraph 179?

19          A.       Well, you see -- I mean, when you  
20 start in paragraph 177, it states -- you know, I  
21 state, Miyazaki's control of its electronic  
22 shutter fails to disclose the application of

1 integration time control during a scene. And  
2 there's explanations above that we've been  
3 talking about. And neither Yu nor Miyazaki  
4 disclose integration control in the context of a  
5 scene because they're both focused on digital  
6 photography, still image, not video scenery.

7 And then -- sorry -- 178 goes into  
8 describing the Miyazaki, the one solid-state  
9 image pickup device, and then -- then you get to  
10 179.

11 So the context of 179 is set in the  
12 prior two paragraphs. And that's why Miyazaki  
13 doesn't -- doesn't disclose what's being claimed.

14 Q. So paragraph 179 of your declaration  
15 is showing that Miyazaki doesn't disclose  
16 claim 1; is that correct?

17 A. Of the challenged claims. So doesn't  
18 disclose all the limitations of the challenged  
19 claims. Obviously, the independent claims -- and  
20 you don't disclose the independent claims. You  
21 don't disclose the dependent.

22 But if you're going to continue to

1 talk about Miyazaki, I would ask you to upload a  
2 copy of Miyazaki.

3 Q. So the first part of paragraph 179  
4 says, Multi-sensor, in-frame focal plane control  
5 requires three concrete mechanisms.

6 Do you see that?

7 A. You read that correctly.

8 Q. Does that requirement change based on  
9 which prior art reference we're talking about?

10 A. I don't understand your question.

11 Q. So is it your opinion -- so you  
12 have -- for paragraph 179 you have specified  
13 these three concrete mechanisms with respect to a  
14 specific prior art reference, Miyazaki; is that  
15 right?

16 A. That's correct.

17 Q. Is it your opinion that the  
18 challenged claims require these three identified  
19 mechanisms in paragraph 179?

20 A. Well, that's what paragraph 114 is  
21 about. See, paragraph 114 tells you that from an  
22 imaging system standpoint, if you wanted to

1 accomplish independent integration time control  
2 in a multi-sensor camera system, you would need  
3 to basically provide, you know, the ability to do  
4 independent shutter-gate generation, cross-sensor  
5 management and downstreams -- downstream  
6 synchronization and fusion for you to accomplish  
7 this independent integration time control in a  
8 multi-sensor system.

9 179 is in the context of Miyazaki,  
10 basically stating Miyazaki doesn't disclose any  
11 of these three. It doesn't disclose that, that  
12 or -- and that or that, doesn't disclose any of  
13 these three items and we explain them here.

14 But, I mean, if you're talking about  
15 a different prior art, I would have to see what  
16 that is to be able to discuss what it does and it  
17 doesn't disclose.

18 But paragraph 114 discloses what  
19 needs to be there, generally speaking, to be able  
20 to perform independent integration time control  
21 in a multi-sensor camera system.

22 MS. SHI: Let's take a five-minute

1 break.

2 THE WITNESS: Sure.

3 So I have 1:23. Why don't we do it

4 1:30.

5 MS. SHI: Yes. Let's go back at

6 1:30.

7 THE WITNESS: Fantastic.

8 (Thereupon, a brief recess was  
9 taken.)

10 BY MS. SHI:

11 Q. So just to make sure things are  
12 clear, regarding paragraph 179 of Exhibit 2017,  
13 does claim 1 require the three concrete  
14 mechanisms described in paragraph 179?

15 A. I believe I already answered that  
16 question multiple times, but I'm happy to answer  
17 it again.

18 As I discussed in paragraph 114 --  
19 179 is in the context of Miyazaki. So 114 is  
20 what is the appropriate context for what we are  
21 talking about.

22 So as you look at paragraph 114, it

1 essentially clearly states independent  
2 integration time control in a multi-sensor camera  
3 would, generally speaking, have these three  
4 concrete ingredients that you would want to see.  
5 You'd have to have independent shutter-gate  
6 generation per sensor. So for you to have the  
7 independent control, you've got to have  
8 cross-sensor basically abilities because you have  
9 more than one sensor and you have to control --  
10 synchronize between them.

11 And you have to have downstream  
12 synchronization and fusion to take the imagery or  
13 the data that's captured by the three -- by the  
14 multiple sensors and put it into an image,  
15 essentially what you're -- you know, what you're  
16 trying to accomplish in the -- in the '158.

17 179 is with regards to what Miyazaki  
18 does not disclose because Miyazaki does not  
19 disclose this, this and/or this. It doesn't meet  
20 the claim -- you know, it doesn't address -- you  
21 know, the combination basically doesn't meet all  
22 the limitations of the challenged claims.

1                   So 179 is in the context of Miyazaki  
2                   versus 114 tells you what needs to be there for  
3                   you to achieve the independent control and create  
4                   the imagery at the end of the day.

5               Q.       You said 179 is with regards to what  
6                   Miyazaki does not disclose; is that right?

7               A.       Correct. It's in the context of  
8                   what -- you know, it's talking about Miyazaki and  
9                   what it doesn't disclose -- what is not disclosed  
10                  in Miyazaki.

11             Q.       So is it correct that 179 is with  
12                  regards to what Miyazaki does not disclose  
13                  related to claim 1?

14             A.       Well, as it says in 179,  
15                  Multi-sensor, in-frame focal plane control  
16                  requires three concrete mechanisms that Miyazaki  
17                  does not disclose, and item 1, item 2 and item  
18                  3 -- and/or item 3.

19             Q.       And claim 1 requires Multi-sensor,  
20                  in-frame focal plane control; is that right?

21             A.       Well, claim 1 requires -- we've gone  
22                  through this already, I think, a few times, but

1 I'm happy to go through it again.

2 Claim 1 claims a plurality of  
3 sensors. So you have multiple sensors. You have  
4 a plurality of optic components that are  
5 basically connected to the plurality of sensors.  
6 And you have a processing component that's  
7 configured to control an integration time of each  
8 sensor, essentially independently control that.

9 So that's what claim 1 is claiming.  
10 So you have to have multiple -- a plurality of  
11 sensors, optics to go with them and a processing  
12 component to control -- you know, to  
13 independently control the integration time of  
14 each sensor. That's what's claimed in claim 1.

15 Q. So is it correct that claim 1 does  
16 not claim per-sensor shutter-gate generation?

17 A. Well, it claims independent control  
18 of the integration time of each sensor. Now,  
19 when you read the specification, you read the  
20 claim in light of the specification -- I think we  
21 went through this already -- it talks about  
22 integration time control.

1                   So if you go to the specification on  
2                   column 4, line 46, it talks about integration  
3                   time control, which is what's being claimed to  
4                   control the integration time of each sensor, also  
5                   referred to as focal plane shutter control -- so  
6                   I'm on column 4, line starting 46, and I think we  
7                   went through this already -- controls the time  
8                   the electrical signal is integrated or is  
9                   accumulated by controlling a switch -- so let me  
10                  go back.

11                  In column 4, lines 46 to 50, it talks  
12                  about what integration time control is, also  
13                  referred to as focal plane shutter control, and  
14                  it's describing that that controls the time the  
15                  electrical signal is integrated or accumulated by  
16                  controlling a switch, et cetera, et cetera,  
17                  et cetera, and then describes, you know,  
18                  continuing in this column and the next column,  
19                  the details.

20                  Q.        Would you be able to provide a yes or  
21                  no answer to the question that does claim 1  
22                  require per-sensor shutter-gate generation?

1           A.       I think I've already answered your  
2 question. It requires -- claim 1 is essentially  
3 talking about independent integration time  
4 control, control of integration time. So you  
5 have to be able to control the focal plane  
6 shutter for every sensor to be able to control  
7 the integration time independently for every  
8 sensor.

9                   So you would need to be able to do  
10 that per-sensor shutter-gate, you know, control.  
11 You have to control that. You have to, you know,  
12 turn it on, turn it off, control when to start,  
13 when to stop.

14                   And it defines that for you. It  
15 says, control the time the electrical signal is  
16 integrated or accumulated by controlling a  
17 switch -- right -- charge integration switch,  
18 coupled or connected to the sensor.

19                   So it's got to control it  
20 independently for every sensor.

21           Q.       And would you be able to provide a  
22 yes or no answer to the question that, does

1 claim 1 requires in-frame processor  
2 synchronization?

3 A. Well, claim 1 talks about the control  
4 of an integration time of each sensor. So you  
5 have to be able to control that. And if you go  
6 to claim 5, you see for claim 2 it narrows that  
7 to an integration time of each sensor during a  
8 frame. So it's got to be able to control that  
9 during a frame.

10 And if you go to claim 5, it's  
11 combining the data to -- to provide an image. So  
12 it narrows that. So that gives you essentially  
13 the downward synchronization -- downstream  
14 synchronization to -- to provide the image.

15 But claim 1 you have to be able to  
16 control the integration time of each sensor  
17 independently, so you would need to have some  
18 in-frame -- some cross-sensor synchronization to  
19 be able to manage that.

20 So the point is the claim itself just  
21 states to control an integration time of each  
22 sensor.

1           Q.       So is it yes or no to the question  
2       that claim 1 requires in-frame processor  
3       synchronization?

4           A.       I mean, claim 1 is talking about, as  
5       we've -- as I just said, it's talking about the  
6       processing component configured to control an  
7       integration time of each sensor. So as long as  
8       it's controlling the integration time  
9       independently of each sensor, it's practicing  
10      claim 1.

11          Q.       So claim 1 does not require in-frame  
12      processor synchronization; is that right?

13          A.       Well, it doesn't state that directly  
14      in claim 1. But the point is if you're  
15      controlling independently each sensor, at some  
16      point you will need to cross -- do some  
17      cross-sensor synchronization. But that's not  
18      stated there in claim 1.

19                 Claim 1 is broad. All it states is  
20      control the integration time of each sensor. So  
21      as long as I'm controlling the integration time  
22      independently of each sensor, I'm essentially

1 practicing claim 1.

2 But when you read the claim in light  
3 of the specification, you see how the control is  
4 taking place.

5 Q. Does claim 2 require in-frame  
6 processor synchronization?

7 A. So when you go to claim 2, you  
8 control the integration time of each sensor  
9 during a frame. So essentially you can adjust  
10 the -- the -- you know, the integration time of  
11 one sensor relative to the other, you know, you  
12 have to control it during a frame.

13 So -- so I would -- you know, I would  
14 make an adjustment potentially during a frame and  
15 I would make another adjustment during -- during  
16 another frame. And presumably, those adjustments  
17 would require some cross-synchronization.

18 Q. Is it correct that it's your opinion  
19 that claim 2 requires in-frame processor  
20 synchronization?

21 A. Well, I mean, you're doing it during  
22 a frame, so you will need to basically do your

1 work. The work has to be done during a frame,  
2 during the period of the frame being captured, so  
3 there has to be some type of, you know,  
4 synchronization between these integration times  
5 of the multiple sensors during a frame.

6 But the claim itself doesn't state  
7 that. It doesn't state that exact language.

8 Q. It's okay if you couldn't provide a  
9 yes or no question [sic]. I just need to know  
10 that.

11 So is it correct that you couldn't  
12 provide a yes or no answer to the question that  
13 claim 2 requires in-frame processor  
14 synchronization?

15 A. I think I provided you with an  
16 answer. So the processing component is further  
17 configured to control the integration time of  
18 each sensor during a frame. So as long as you're  
19 controlling the integration time of each sensor  
20 during a frame, you're practicing claim 2.

21 Q. So it's your opinion that controlling  
22 integration time of each sensor during a frame is

1 required by claim 2?

2 A. Claim 2 states the processing  
3 component is further configure Todd control the  
4 integration time of each sensor during a frame.  
5 So as long as you're controlling the integration  
6 time, so you're opening the shutter, you're  
7 accumulating, you're closing, you're controlling  
8 integration time independently of each sensor  
9 during a frame, you're practicing claim 2.

10 Q. You mentioned a focal plane shutter.  
11 Do you recall?

12 A. I mentioned that many times, I think,  
13 today, yes.

14 Q. What's the plain and ordinary meaning  
15 of a focal plane shutter?

16 A. So you see in the -- any  
17 specification, column 4, lines 46 to 50, you see  
18 it says, Integration time control, also referred  
19 to as focal plane shutter, quote/unquote,  
20 control, controls the time the electrical signal  
21 is integrated or accumulated by controlling a  
22 switch, the charge integration switch, coupled or

1 connected to the sensor.

2 Q. My question is, what's the plain and  
3 ordinary meaning of a focal plane shutter?

4 A. I --

5 Q. So --

6 A. Yeah, go ahead.

7 Q. So without '158 patent in hand, what  
8 does focal plane shutter mean to a POSITA?

9 A. Well --

10 MR. THEISS: Objection, form.

11 THE WITNESS: What was that again?

12 I missed --

13 BY MS. SHI:

14 Q. Without '158 patent in hand, what  
15 does focal plane shutter mean to a POSITA?

16 A. So as you understand -- you know, a  
17 pinhole camera, for instance, just, you know,  
18 speaking in general term, if you have a pinhole  
19 camera, which has the optics and lenses properly  
20 designed to focus light on a focal plane. So  
21 that could be a mechanical shutter that opens and  
22 then light comes in and gets focused on that

1 plane or -- you know, and closes.

2 If I put -- if I put -- if I allow  
3 the focal plane to have its own shutter control,  
4 essentially be able to control when I start my  
5 CCD array integration, you know, the -- the  
6 accumulation or integration time, so if I'm able  
7 to clock that CCD array and say, look, I'm going  
8 to start -- you know, clock now, start the  
9 integration time and then clock to stop it, so  
10 essentially I have a focal plane shutter, you  
11 know, directly in front of the sensor or film --  
12 you know, in this case, let's say the CCD  
13 array -- so that I can control when I start the  
14 charging and when I stop, you know -- when I  
15 start and when I stop the integration time.

16 So that's essentially a focal plane  
17 shutter. So it's at the focal plane and it acts  
18 like a shutter.

19 Q. You said mechanical shutter. Is  
20 focal plane shutter a mechanical shutter?

21 A. No. Generally speaking, not, no.

22 Q. So to a POSITA, a focal plane shutter

1 is not a mechanical shutter that have two  
2 curtains?

3 A. A focal plane shutter would be  
4 essentially -- as described in -- in the  
5 specification here, we're talking about in the  
6 context of this specification -- would be the  
7 ability essentially to control the integration  
8 time of those CCD arrays. So when I clock that  
9 CCD array as described in column 4, lines 46 to  
10 50, I clock that CCD array, I start  
11 integrating -- I start collecting light, photons,  
12 you know, integrating -- basically integrating  
13 time control. And when I clock it again, I stop  
14 that, let's say.

15 So that essentially acts like a focal  
16 plane shutter because you're allowing the CCD  
17 array to charge -- you know, to pick up, you  
18 know, photons and come up to a certain charge and  
19 then you're stopping that and then you're  
20 processing the data.

21 Q. So is it correct that not within the  
22 context of '158, a POSITA would not have

1       understood a focal plane shutter to be a  
2       mechanical shutter?

3               MR. THEISS:  Objection, misstates  
4       the law.

5               THE WITNESS:  I don't -- I don't --

6               BY MS. SHI:

7               Q.       You can answer.

8               A.       I don't understand your question, but  
9       I explained to you what a focal plane shutter  
10      would be.  You -- most likely you wouldn't be  
11      doing that with some kind of a mechanical.  You  
12      would be doing it electronically.

13              Q.       Can focal plane shutter be performed  
14      with a mechanical shutter?

15              A.       I mean, I don't want to get into  
16      hypotheticals and can this and can that.  That's  
17      not part of what I'm here to opine about.  I  
18      don't want to get into hypotheticals.  You would  
19      have to show me exactly what you're talking  
20      about.  I don't want to deal with hypotheticals.

21              Q.       Can we go to '158, Exhibit 1001.

22              A.       Yes.

1 Q. Can you go to column 4, line 24.

2 A. Yes.

3 Q. Could you please read the sentence  
4 start with The digital camera can include.

5 A. Yes. So column 4, line 24, The  
6 digital camera can include, for example, a 3 by 3  
7 assembly of image sensors, perhaps three sensor  
8 of each color, e.g., red, green and blue, and the  
9 integration time of the sensors associated with  
10 each color can be varied, for example, each color  
11 can have three distinct values, e.g.,  
12 .1 millisecond, 1 millisecond and 10 millisecond  
13 integration time respectively.

14 Q. So this is an example of the  
15 embodiment of the '158 patent; is that right?

16 A. That's what it says, the digital  
17 camera can include, for example.

18 Q. Is this an example of the scope of  
19 claim 1?

20 A. Well, I mean, the scope of claim 1  
21 says you have a plurality of sensors. It's a  
22 3 by 3 assembly of image sensors. So you have a

1 plurality of sensors. You have a plurality of  
2 optic components. And, you know, the description  
3 there obviously has three sensors. One is R, one  
4 is G, one is B. So you would assume they have  
5 optical components that go with them to pass the  
6 light appropriately for each of the colors. And  
7 the integration time of the sensors associated  
8 with each color can be varied.

9 So claim 1 talks about the processing  
10 component configured to control an integration  
11 time of each sensor. So it's talking about the  
12 integration time of each sensor associated can be  
13 varied.

14 It gives you an example and it says  
15 respectively at the end. So I could have one of  
16 them be .1, the other one be 1 and the other one  
17 be 10 or all three be .1.

18 Q. So is it correct that this example is  
19 within the scope of claim 1?

20 A. Well, that's essentially what claim 1  
21 is talking about. You have a plurality of  
22 sensors. This example provides a plurality of

1 sensors. You have a plurality of optics. The  
2 underlying understanding is that you have an RGB  
3 sensor, so you have to have some optics that go  
4 with it. And you have a processing component in  
5 claim 1 that controls the integration time. And  
6 then this says the integration time can be  
7 varied.

8 So basically claim 1 reads -- you  
9 know, this reads -- it's within the scope. I  
10 mean, claim 1 claims what we discussed earlier.

11 MS. SHI: Can we take a 15-minute  
12 break? Can we be off the record?

13 (Thereupon, a brief recess was  
14 taken.)

15 MS. SHI: I don't have more  
16 questions.

17 MR. THEISS: Great.

18 We have a couple redirect  
19 questions. Do you want to take a break  
20 before that or do we just want to move  
21 right into it?

22 THE WITNESS: I'm okay to just go

1 right into it.

2 MR. THEISS: Is that okay with you?

3 MS. SHI: Yeah, it's okay with me.

4 EXAMINATION BY COUNSEL FOR PATENT OWNER

5 BY MR. THEISS:

6 Q. So I have one housekeeping question  
7 and then a couple questions related to your  
8 discussion with counsel. So let's look at the  
9 housekeeping question first.

10 Dr. Saber, are there any  
11 typographical errors you would like to correct in  
12 your declaration?

13 A. Yes. Thank you for asking.

14 There was a citation in my  
15 declaration that is 27:37-44. You can search on  
16 that through the whole declaration. It's got  
17 multiple pages.

18 I'm going to repeat that again,  
19 citation 27:37-44. That should be replaced with  
20 9:46-54.

21 That's the only correction --  
22 substantial correction I remember off the top of

1 my head.

2 Q. Thank you.

3 A. So please do a copy and paste or a  
4 search and find, whatever, on that -- that  
5 particular citation.

6 Q. Absolutely.

7 Do you recall having a conversation  
8 with counsel recently, couple minutes ago, about  
9 the mechanical shutters and the focal plane  
10 shutters taught in the '158 patent?

11 A. Yes.

12 Q. Can you explain how a mechanical  
13 shutter, such as taught in Miyazaki, works.

14 A. Yes. So typically a camera having a  
15 mechanical shutter would be a physical item  
16 sitting there. You would open that shutter  
17 and -- to let light in, so -- in order to start  
18 your exposure, you know, whether it's a film  
19 camera or a digital camera, and then -- and then  
20 you mechanically close the shutter.

21 Q. What does -- the focal shutter that  
22 we're talking about with the '158 patent, what

1 does that control?

2 A. Well, that's -- that controls  
3 directly basically the CCD -- you know, the CCD  
4 arrays or the -- the -- the -- controls the -- so  
5 if you go back to column 4, lines 46 to 50, so  
6 your focal plane shutter controls the time the  
7 electrical signal is integrated or accumulated by  
8 controlling a switch, such as a charge  
9 integration switch, coupled or connected to the  
10 sensor or the photo detection mechanism of a  
11 sensor. So you're essentially controlling the  
12 integration time of that CCD array sensor.

13 Q. Professor, you just said that the  
14 mechanical shutter controls the exposure. Can  
15 you explain what exposure means or exposure time  
16 means?

17 A. It potentially -- exposure time  
18 essentially means you open the shutter, you're  
19 exposing the back plane of the camera to incident  
20 light.

21 Q. How does that relate to integration  
22 time?

1           A.       Well, integration time would be when  
2           you actually start the accumulation of charge on  
3           the sensor. So I could open the shutter and not  
4           start any integration on the sensor and -- so  
5           exposure time is not the same as integration  
6           time.

7                        So integration time is specific to  
8           the sensor itself when I start and stop  
9           collecting photons on the sensor.

10                   MR. THEISS: I have no further  
11           questions. I pass the witness back.

12                   MS. SHI: Can I take a five-minute  
13           break to review --

14                   MR. THEISS: Absolutely. No  
15           problem. This is the part of the  
16           deposition that's like the end of a  
17           basketball game where everyone calls time  
18           out.

19                   MS. SHI: Yeah. All right. Let  
20           me -- let's come back in five minutes.

21                   THE WITNESS: All right. It's 2:17  
22           now. I'll be in my chair at 2:22.

1 MS. SHI: Okay.

2 THE WITNESS: Thank you.

3 (Thereupon, a brief recess was  
4 taken.)

5 MS. SHI: I don't have further  
6 questions. Thank you very much.

7 (Thereupon, signature having been  
8 waived, at 2:23 p.m. EST, the  
9 deposition concluded.)

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E X H I B I T S

EXHIBITS PREVIOUSLY MARKED AND REFERRED TO:

| NO.:         | DESCRIPTION:                                                                               | PAGE: |
|--------------|--------------------------------------------------------------------------------------------|-------|
| Exhibit 1001 | United States Patent No.<br>9,232,158                                                      | 15    |
| Exhibit 2017 | Declaration of Dr. Eli<br>Saber in Support of Patent<br>Owner's Response, dated<br>10/7/25 | 11    |

I N D E X

| WITNESS:         | EXAMINATION BY: | PAGE: |
|------------------|-----------------|-------|
| Eli Saber, Ph.D. | Ms. Shi         | 3     |
|                  | Mr. Theiss      | 115   |

CERTIFICATE OF NOTARY

I, MISTY KLAPPER, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me in shorthand and thereafter reduced to typewriting by me; that said deposition is a true record of the testimony given by said witness; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken; and, further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.



-----  
Misty Klapper, RMR, CSR, RPR,  
RSA and Notary Public

| <b>1</b> | 99:13,17,19,21<br>100:2,9,14,15<br>101:21 102:2<br>103:1,3,15<br>104:2,4,10,11<br>104:14,18,19<br>105:1 112:12<br>112:12,19,20<br>113:9,16,16,17<br>113:19,20<br>114:5,8,10<br><b>1,000</b> 41:18<br><b>1,000,000</b> 41:19<br><b>1-100</b> 41:16<br><b>1.0</b> 75:12<br><b>1.1</b> 75:12<br><b>1.2</b> 75:12<br><b>1.3.</b> 75:12<br><b>1/30</b> 44:14,18<br><b>10</b> 27:7 112:12<br>113:17<br><b>10/7/25</b> 120:9<br><b>100</b> 5:4<br><b>100-1,000</b><br>41:17<br><b>1001</b> 15:3,6,8<br>15:17 26:20<br>39:2,5 40:6<br>70:19 111:21<br>120:4<br><b>1030</b> 23:7,10<br><b>10:00</b> 1:12<br><b>11</b> 18:1 68:5<br>120:9 | <b>114</b> 12:10 64:7<br>64:10 65:10,12<br>65:16 70:22<br>71:1,11,18,22<br>72:18 73:22<br>74:2 75:8,21<br>76:2,7,13<br>77:10 78:14<br>82:2,22 84:6<br>87:16 88:2,7<br>89:20 90:5,6,7<br>90:13,20 91:22<br>92:3 95:20,21<br>96:18 97:18,19<br>97:22 99:2<br><b>115</b> 120:17<br><b>117</b> 12:10<br><b>119</b> 88:15<br>89:13<br><b>11:45</b> 56:1<br><b>122</b> 24:10<br><b>12:15</b> 55:18<br><b>12:16</b> 57:1<br><b>147</b> 44:21 45:3<br>45:4,8 48:1<br>52:11,17,21<br><b>15</b> 49:6 51:7,9<br>58:8 82:18,21<br>83:1 84:10,19<br>84:22 85:9<br>114:11 120:5<br><b>1500</b> 2:5<br><b>158</b> 7:5,10 13:9<br>13:16 15:1,18 | 15:22 18:15,19<br>19:1 24:12<br>26:1,7,13,15,21<br>27:2,7 29:2,4<br>30:11 31:11<br>32:10 36:14,18<br>36:19 37:2,6<br>38:2,7 39:8<br>40:10 41:7,8<br>42:11 43:4<br>44:2,7,20 45:5<br>45:8 49:8<br>52:15 60:19<br>63:4,11 66:19<br>67:14 70:1<br>72:7 75:5<br>80:15 98:16<br>108:7,14<br>110:22 111:21<br>112:15 116:10<br>116:22<br><b>16</b> 83:9 84:7,8<br>84:9,11<br><b>16th</b> 2:10<br><b>17</b> 23:4,6 27:3<br>29:3,5<br><b>177</b> 93:12,20<br><b>178</b> 94:7<br><b>179</b> 57:4,17,18<br>57:21 60:13,17<br>61:9,12,17<br>63:6,21 65:1,7<br>87:13,15,18<br>89:14,17,22 |
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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 90:2,9 91:4<br>92:7,10 93:2<br>93:15,18 94:10<br>94:11,14 95:3<br>95:12,19 96:9<br>97:12,14,19<br>98:17 99:1,5<br>99:11,14<br><b>17th</b> 2:15<br><b>18</b> 16:11<br><b>1800</b> 2:15<br><b>185</b> 36:16,20<br><b>19</b> 85:3,7,8,13<br>85:20 86:20<br><b>19103</b> 2:15<br><b>1:23</b> 97:3<br><b>1:30</b> 97:4,6 | 105:19 106:13<br>106:20 107:1,2<br>107:9<br><b>20</b> 26:18<br><b>20006</b> 2:10<br><b>2004</b> 7:11 8:15<br>8:20<br><b>2007</b> 23:1<br><b>2011</b> 38:22<br><b>2016</b> 23:2<br><b>2017</b> 11:1,10,22<br>21:14 25:10<br>36:6 57:5,8<br>97:12 120:6<br><b>202</b> 2:11<br><b>2025</b> 1:11<br><b>210</b> 26:18 27:5<br>29:8,11<br><b>215</b> 2:16<br><b>236</b> 24:11,11<br><b>24</b> 112:1,5<br><b>25th</b> 7:11<br><b>260a</b> 29:16<br><b>260d</b> 29:17<br><b>27:37-44</b><br>115:15,19<br><b>28</b> 35:2 41:6,8<br>41:9<br><b>2:22</b> 118:22<br><b>2:23</b> 119:8 | 26:16,21 27:2<br>27:4,10,19,22<br>28:4,21 29:1,5<br>29:21 30:2<br>31:5,10 32:14<br>61:12,16 62:8<br>63:5 65:6<br>67:15 72:17<br>73:22 75:8,21<br>82:1 99:18,18<br>112:6,6,22,22<br>120:16<br><b>30</b> 2:15 55:13<br>55:13<br><b>300</b> 2:10<br><b>31</b> 39:6,9 40:6<br>40:9,10<br><b>32</b> 3:15 37:12<br><b>33</b> 3:15<br><b>34</b> 38:5<br><b>36</b> 16:11<br><b>37</b> 17:12 38:5<br><b>38</b> 16:15 17:13<br>17:22<br><b>39</b> 16:11 | 62:22 66:22,22<br>67:4,8,15<br>101:2,6,11<br>107:17 110:9<br>112:1,5 117:5<br><b>410</b> 27:8<br><b>43</b> 38:4 43:13<br><b>449</b> 121:18<br><b>45</b> 38:5<br><b>46</b> 23:7,13,15<br>60:19,19 62:22<br>67:8 101:2,6<br>101:11 107:17<br>110:9 117:5<br><b>47</b> 23:17<br><b>4:38</b> 16:9<br><b>4:45</b> 16:10 |
| <b>2</b>                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>4</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>5</b>                                                                                                                                                                                                                                                                                                           |
| <b>2</b> 20:12 21:7<br>28:10 38:5<br>39:4,5,8,8 40:6<br>40:9,10 41:6,8<br>41:9 43:9 47:4<br>47:6,13,15,18<br>47:18 58:17,19<br>59:7,19 60:2<br>61:12,16 62:8<br>63:5 65:6 70:7<br>72:17 73:22<br>75:8,21 79:20<br>82:1 83:18<br>86:4 99:17<br>103:6 105:5,7                                                         | <b>3</b> 16:10 19:12<br>23:1 26:1,4,13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>4</b> 16:15 17:9,10<br>17:22 26:7,13<br>27:8,20 28:1<br>29:22 30:11<br>31:5,10 32:14<br>32:22 54:14,18<br>55:8 60:19,19                                                                                                                                                                                                                                                                                                                    | <b>5</b> 16:10 17:3,15<br>18:1 20:12<br>67:2,14 68:4<br>78:16,21 103:6<br>103:10<br><b>50</b> 5:3 62:22<br>67:8 101:11<br>107:17 110:10<br>117:5<br><b>51</b> 65:16<br><b>512</b> 2:6<br><b>52</b> 38:4<br><b>53</b> 16:10 38:4<br><b>56</b> 20:5,6                                                                |

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>568-6400</b> 2:16<br><b>57</b> 19:12 20:12<br>20:13 32:18<br><b>58</b> 32:19                                                                                                                                            | <b>803</b> 23:20<br>24:10<br><b>81</b> 37:20<br><b>82</b> 37:18 38:1<br><b>85</b> 35:11,14<br>36:5,13,15<br>39:1,17 44:10<br><b>867-8400</b> 2:6<br><b>88</b> 38:8,11<br>42:17,19<br><b>888</b> 2:10        | <b>able</b> 33:21 34:1<br>34:2,10,14<br>46:10,17 47:10<br>47:21 49:1<br>50:11,22 51:1<br>51:16 59:13<br>60:11 63:2,17<br>66:6,7,10 72:9<br>74:15,19,21<br>75:3 76:16<br>77:5,12,14<br>82:8,9 83:15<br>83:19 86:9<br>87:6 89:3,7<br>96:16,19<br>101:20 102:5,6<br>102:9,21 103:5<br>103:8,15,19<br>109:4,6<br><b>above</b> 23:12,15<br>23:17 94:2<br><b>absolutely</b><br>116:6 118:14<br><b>accommodate</b><br>39:7,9 40:11<br><b>accomplish</b><br>72:15,19 74:15<br>75:22 78:13<br>82:5,14 84:4<br>90:5 96:1,6<br>98:16<br><b>accumulated</b><br>61:2 67:10<br>101:9,15 | 102:16 107:21<br>117:7<br><b>accumulating</b><br>107:7<br><b>accumulation</b><br>109:6 118:2<br><b>accurate</b> 4:6<br>65:4<br><b>achieve</b> 99:3<br><b>achieved</b> 65:18<br>74:9<br><b>action</b> 38:17<br>42:13 43:2,5<br>44:4,12 121:12<br>121:16<br><b>acts</b> 109:17<br>110:15<br><b>actually</b> 65:22<br>74:10 118:2<br><b>added</b> 54:18<br><b>adding</b> 14:12<br><b>additional</b> 55:8<br>78:17,22 84:21<br><b>address</b> 98:20<br><b>addressing</b><br>71:18<br><b>adds</b> 47:6<br>54:15 78:17<br>87:3<br><b>adjust</b> 105:9<br><b>adjustment</b><br>47:11,12 58:20<br>58:22 59:9,11<br>105:14,15 |
| <b>6</b>                                                                                                                                                                                                                   | <b>9</b>                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>6</b> 32:14 68:4<br><b>61</b> 19:2,2<br><b>62</b> 19:2,2<br><b>63</b> 19:12 27:7<br><b>64</b> 19:12<br><b>654-4500</b> 2:11<br><b>66</b> 20:6 21:14<br>21:15,16<br><b>69</b> 31:6 33:17<br>33:19 34:5,8<br>34:19 35:2,4 | <b>9</b> 27:6 49:6,8<br>49:11,14 50:15<br>51:4 58:8<br>72:20 73:1<br>80:18,20 81:3<br>82:1,15 83:2<br><b>9,232,158</b> 120:5<br><b>95</b> 12:10<br><b>98</b> 2:5<br><b>9:46-54</b> 115:20<br><b>9b</b> 73:2 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7</b>                                                                                                                                                                                                                   | <b>a</b>                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7</b> 16:11 27:3<br>29:3,4 79:4,5,6<br>79:15,19 80:2<br><b>70</b> 25:8,15<br>30:15 31:17,21<br>33:16 35:9<br><b>74</b> 12:8,16,19<br>13:12 16:3,7<br><b>76</b> 12:8<br><b>78</b> 12:8<br><b>78701</b> 2:6               | <b>a.m.</b> 1:12 56:1<br><b>abilities</b> 77:1<br>77:17 98:8<br><b>ability</b> 46:8,14<br>46:19 47:2,19<br>50:4 86:1,4,12<br>87:8 96:3<br>110:7                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>8</b>                                                                                                                                                                                                                   |                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>8</b> 31:5 80:5,6,7<br>80:10                                                                                                                                                                                            |                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>adjustments</b><br>105:16<br><b>administrator</b><br>1:19<br><b>aed</b> 69:15<br><b>affect</b> 84:9<br><b>afternoon</b> 57:1<br><b>ago</b> 11:17<br>116:8<br><b>agree</b> 40:5<br><b>ahead</b> 12:6<br>108:6<br><b>aimed</b> 53:19<br>54:10<br><b>algorithms</b><br>18:17,20<br><b>aliasing</b> 21:9<br><b>aligns</b> 31:2<br><b>allow</b> 109:2<br><b>allowing</b><br>110:16<br><b>alpha</b> 86:15,18<br>87:8<br><b>alternative</b><br>27:9<br><b>answer</b> 48:10<br>54:4 97:16<br>101:21 102:22<br>106:12,16<br>111:7<br><b>answered</b><br>18:14 50:18<br>62:9 75:10<br>77:13 81:1 | 91:6,8,9 97:15<br>102:1<br><b>appeal</b> 1:2<br><b>appearances</b><br>2:1,2<br><b>appears</b> 121:5<br><b>application</b> 8:8<br>8:13,18,21 9:7<br>23:20 24:11<br>42:9 93:22<br><b>applications</b><br>9:2,9 24:11<br><b>applies</b> 4:15<br><b>appropriate</b><br>89:9 97:20<br><b>appropriately</b><br>113:6<br><b>approximately</b><br>3:13<br><b>architecture</b><br>25:20,21,22<br>26:6,7 27:10<br>27:17,22,22<br><b>array</b> 39:13<br>40:14 109:5,7<br>109:13 110:9<br>110:10,17<br>117:12<br><b>arrays</b> 110:8<br>117:4<br><b>art</b> 10:4 20:4<br>95:9,14 96:15<br><b>asked</b> 12:1 80:1<br>91:5,12 | <b>asking</b> 115:13<br><b>aspect</b> 63:9<br><b>assembly</b> 112:7<br>112:22<br><b>associated</b><br>85:11 112:9<br>113:7,12<br><b>assume</b> 9:12<br>113:4<br><b>assuming</b> 57:13<br><b>attorney</b><br>121:14<br><b>august</b> 7:11<br><b>austin</b> 2:6<br><b>authority</b> 30:20<br>33:7,22<br><b>aware</b> 10:4<br>11:8<br><b>awh</b> 21:22 | <b>based</b> 51:21<br>69:21 79:8<br>80:9,12 83:22<br>95:8<br><b>basic</b> 3:22<br><b>basically</b> 9:6<br>14:4 21:11<br>29:20 30:5<br>33:7 41:13<br>43:21 44:12<br>47:7 74:21<br>75:15 76:8,21<br>77:16 87:4<br>88:11 92:8<br>96:3,10 98:8<br>98:21 100:5<br>105:22 110:12<br>114:8 117:3<br><b>basis</b> 49:22<br><b>basketball</b><br>118:17<br><b>beginning</b><br>37:12<br><b>behalf</b> 2:3,13<br><b>believe</b> 6:8<br>10:15 24:20,20<br>38:22 57:6<br>75:10,11 79:14<br>79:16 97:15<br><b>best</b> 87:11<br><b>beta</b> 86:15,19<br>87:9<br><b>better</b> 89:1 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                        |                         |                        |                      |
|------------------------|-------------------------|------------------------|----------------------|
| <b>beyond</b> 91:8     | <b>c</b>                | 106:2                  | <b>chair</b> 118:22  |
| <b>bit</b> 49:7 65:11  | <b>c</b> 3:1 71:15,19   | <b>capturing</b> 10:5  | <b>challenged</b>    |
| 67:12 71:5             | <b>call</b> 73:1 74:14  | 42:6 43:8,21           | 93:5,14 94:17        |
| 72:22 92:11            | 76:22 84:15,16          | 51:20 66:2             | 94:18 95:18          |
| <b>block</b> 26:17     | 88:5,12                 | 78:4 83:20,21          | 98:22                |
| 27:4                   | <b>called</b> 3:3 65:19 | 84:1                   | <b>change</b> 39:12  |
| <b>blue</b> 9:15 112:8 | <b>calls</b> 76:1       | <b>carefully</b> 5:22  | 40:13 95:8           |
| <b>board</b> 1:2       | 118:17                  | 6:4 68:3               | <b>changes</b> 39:9  |
| 33:17 34:6             | <b>camera</b> 9:20,22   | <b>case</b> 1:6 3:20   | 40:11                |
| <b>board's</b> 35:10   | 19:13 21:9              | 5:15,19 6:9            | <b>changing</b> 42:5 |
| <b>book</b> 37:4 39:1  | 26:17 27:5,8            | 9:21 10:3,9            | <b>channel</b> 9:13  |
| <b>boone</b> 2:5,9     | 29:6,9,10,13,16         | 11:14 14:3             | 9:14,14 13:3         |
| <b>boulevard</b> 2:5   | 65:18 72:6              | 32:1 40:18,20          | 14:1,6 29:11         |
| <b>bowser</b> 2:9      | 74:8 76:3 96:2          | 43:20 54:2,3           | 48:4,8 50:1,3,5      |
| <b>box</b> 6:18,21     | 96:21 98:2              | 55:6 89:1              | 50:11,20 53:5        |
| 15:3                   | 108:17,19               | 109:12                 | 67:18 68:1,7,9       |
| <b>brandon</b> 2:14    | 112:4,6,17              | <b>cases</b> 10:10     | 73:7 81:5,11         |
| 6:14                   | 116:14,19,19            | <b>ccd</b> 65:19 109:5 | 82:6 85:11           |
| <b>break</b> 4:16,20   | 117:19                  | 109:7,12 110:8         | <b>channels</b> 8:10 |
| 35:19,22 55:12         | <b>cameras</b> 10:2,6   | 110:9,10,16            | 8:11 9:5,11,11       |
| 97:1 114:12,19         | 10:13,19 41:14          | 117:3,3,12             | 9:15,19 10:1,5       |
| 118:13                 | <b>capability</b>       | <b>ccds</b> 66:1 74:12 | 10:14,19 29:9        |
| <b>brief</b> 36:2 97:8 | 47:22                   | <b>center</b> 8:1,2,3  | 29:13,16 49:18       |
| 114:13 119:3           | <b>capture</b> 10:13    | <b>certain</b> 44:6    | 49:19 50:4,6,9       |
| <b>bright</b> 41:18    | 10:19 45:22             | 51:1 52:10             | 50:13 51:15,18       |
| <b>bring</b> 14:4      | 51:18 52:6              | 63:8 110:18            | 51:19 53:2,18        |
| 90:14                  | 78:3,3,8 79:2           | <b>certificate</b>     | 53:21 55:2           |
| <b>brings</b> 55:8     | <b>captured</b> 9:20    | 121:1                  | 68:11,18 73:8        |
| <b>broad</b> 104:19    | 9:22 10:1               | <b>certified</b> 1:17  | 73:9 81:4,7,9        |
| <b>broader</b> 58:19   | 44:13,18 52:1           | <b>certify</b> 121:4   | 81:12,17 83:4        |
| <b>brought</b> 20:1    | 52:7 53:9               | <b>cetera</b> 29:14,18 | 85:12                |
| <b>btheiss</b> 2:16    | 59:14 73:16             | 29:19 38:5             | <b>charge</b> 45:11  |
|                        | 84:3 98:13              | 47:13 67:15            | 45:15 61:3           |
|                        |                         | 101:16,16,17           | 102:17 107:22        |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 110:17,18<br>117:8 118:2<br><b>charging</b><br>109:14<br><b>citation</b> 16:10<br>19:6 37:4,19<br>37:21 38:21<br>115:14,19<br>116:5<br><b>citations</b> 16:2,6<br>16:9 24:5 37:8<br>38:2,6<br><b>cited</b> 16:13<br>22:17,21 23:2<br>23:6 33:1 39:1<br><b>claim</b> 22:1,2,4<br>22:7,11 24:14<br>24:16 25:1,2<br>28:9,10,11,13<br>28:22 30:3,4,6<br>30:13 31:10<br>34:7 45:19,21<br>45:22 46:1,4,5<br>46:15 47:2,4,6<br>47:15,18,18<br>48:6,12,17<br>49:6,6,8,11,14<br>50:15 51:4,7,9<br>53:8,11,15,16<br>53:20 54:5,6,7<br>54:14,18,18,19<br>55:1,4,7,8,9<br>58:3,7,8,8,9,13<br>58:17,19,19 | 59:1,3,7,10,16<br>59:19,20 60:2<br>60:4,6,10,14<br>61:15,19 62:7<br>62:18 63:11<br>65:7 70:7,19<br>70:21 72:1,2<br>72:10,12,15,16<br>72:20,21 73:1<br>73:12,17,18,20<br>74:4,9 75:6,7<br>75:15 76:1,1,5<br>76:9 77:8,9,22<br>78:5,7,16,21<br>79:2,4,5,6,7,15<br>79:19,20,20<br>80:2,5,6,7,8,10<br>80:18,20 81:3<br>81:3 82:1,15<br>82:18,21 83:2<br>83:2,9 84:7,8,9<br>84:10,11 85:3<br>85:7,8,9,13,15<br>85:19,20 86:11<br>86:20 87:4,11<br>91:2,3,16 93:9<br>93:17 94:16<br>97:13 98:20<br>99:13,19,21<br>100:2,9,14,15<br>100:16,20<br>101:21 102:2<br>103:1,3,6,6,10<br>103:15,20 | 104:2,4,10,11<br>104:14,18,19<br>105:1,2,5,7,19<br>106:6,13,20<br>107:1,2,9<br>112:19,20<br>113:9,19,20<br>114:5,8,10<br><b>claimed</b> 7:9<br>27:11 28:20<br>82:15 94:13<br>100:14 101:3<br><b>claiming</b> 45:22<br>46:2,8 85:19<br>100:9<br><b>claims</b> 18:4<br>22:8 25:17<br>27:15 28:7,9<br>28:16 30:5<br>31:13 32:2,3,5<br>47:2,22 54:7<br>76:5,9 79:22<br>79:22 81:4,6<br>93:6,14 94:17<br>94:19,19,20<br>95:18 98:22<br>100:2,17<br>114:10<br><b>clarified</b> 88:15<br><b>clarify</b> 13:20<br>89:16<br><b>clean</b> 11:16<br>15:15,16 | <b>clear</b> 7:12 31:8<br>49:4 82:4<br>91:21 92:2<br>97:12<br><b>clearer</b> 65:11<br><b>clearly</b> 20:20<br>33:16 43:18<br>44:7 61:6<br>80:16 83:15<br>87:10 98:1<br><b>clock</b> 109:7,8,9<br>110:8,10,13<br><b>close</b> 38:18<br>39:11 40:12<br>41:16,17,19<br>45:9,13,15,16<br>45:18 116:20<br><b>closes</b> 109:1<br><b>closing</b> 107:7<br><b>cohesive</b> 9:17<br><b>collaborative</b><br>6:2<br><b>collected</b> 69:9<br><b>collecting</b><br>110:11 118:9<br><b>collection</b><br>39:19,20,21<br>40:2,3,4<br><b>collects</b> 45:12<br><b>color</b> 112:8,10<br>112:10 113:8<br><b>colors</b> 113:6<br><b>column</b> 16:1,10<br>16:11,15,21 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17:1,2,3,7,9,10<br>17:15,22 18:1<br>18:5 19:1,12<br>20:7,8,11,12,13<br>21:7 27:3,6<br>29:3,4 31:5<br>32:14,18,22<br>34:8 38:4,4,5<br>39:4,5,8,8 40:6<br>40:9,10 41:6,8<br>41:9 43:9,13<br>60:19,19 62:22<br>66:22,22 67:1<br>67:2,4,5,7,8,13<br>67:14 68:4<br>101:2,6,11,18<br>101:18 107:17<br>110:9 112:1,5<br>117:5<br><b>combination</b><br>51:6 53:6 93:4<br>93:12 98:21<br><b>combine</b> 14:8<br>34:16 49:2<br>50:8,12,22<br>52:6 63:19,19<br>66:9 70:16<br>73:8 75:1<br>78:19 81:16,19<br><b>combined</b><br>89:10<br><b>combining</b><br>14:11,18 15:20<br>16:18 52:1 | 62:17 68:9,12<br>68:16 69:2<br>79:1 84:2<br>103:11<br><b>come</b> 18:3<br>26:12 28:18<br>37:19 54:8<br>60:10 62:4,22<br>63:16 75:4<br>110:18 118:20<br><b>comes</b> 49:4<br>108:22<br><b>commenting</b><br>12:22<br><b>common</b> 33:14<br>34:3<br><b>complete</b> 4:6<br><b>component</b><br>29:17,18 33:18<br>34:7 46:5 47:7<br>48:18 49:16,17<br>49:20,21 50:2<br>50:7 61:19<br>62:13 67:16<br>72:3 73:3,5,6<br>73:13 75:18<br>76:10 78:10,18<br>81:7,8,10,15<br>85:10,14,18,21<br>86:2,3 87:7<br>100:6,12 104:6<br>106:16 107:3<br>113:10 114:4 | <b>components</b><br>34:10 46:3<br>54:10 74:13<br>75:17 76:6,8<br>100:4 113:2,5<br><b>comprising</b><br>85:9,16<br><b>concept</b> 8:15<br><b>concluded</b><br>119:9<br><b>concrete</b> 66:3<br>87:19 88:1<br>89:20,21 92:14<br>95:5,13 97:13<br>98:4 99:16<br><b>conditions</b><br>41:20 42:5,8<br><b>configuration</b><br>34:10<br><b>configure</b><br>107:3<br><b>configured</b><br>46:6 47:8<br>48:19 49:22<br>50:8 54:16<br>55:11 61:20<br>62:13 67:17<br>72:3 73:6,8,13<br>76:10 78:18<br>81:10,16 100:7<br>104:6 106:17<br>113:10<br><b>confirm</b> 15:14<br>25:4 89:19 | <b>confusion</b> 87:3<br><b>connected</b><br>45:16 61:4<br>100:5 102:18<br>108:1 117:9<br><b>connection</b><br>63:21<br><b>consider</b> 22:6<br>22:10,16 23:10<br>79:19<br><b>considered</b><br>26:6<br><b>consistent</b><br>25:19 27:16<br>32:9 35:5,9<br>37:1<br><b>constant</b> 42:7<br><b>construction</b><br>12:18 24:17<br>48:13<br><b>construed</b><br>24:19 25:5<br>28:6<br><b>construing</b><br>24:15 72:10<br><b>context</b> 7:19,20<br>7:21 12:12,15<br>13:18 36:14<br>40:19 42:10<br>90:19 92:10<br>94:4,11 96:9<br>97:19,20 99:1<br>99:7 110:6,22 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>continuation</b><br>23:13                                                                                                                                                                                                                                                                                                                             | 68:14 69:11,12<br>70:4,4 71:2,8                                                                                                                                                                                                                                                                                                                                                                                          | 79:8 80:9,12<br>80:15 86:3                                                                                                                                                                                                                                                                                 | 95:2 116:3                                                                                                                                                                                                                                                                                                                                                                 |
| <b>continue</b> 19:9<br>48:1 61:8<br>94:22                                                                                                                                                                                                                                                                                                               | 71:20,21 72:3<br>73:13 74:4,5,8<br>74:17 76:8,10                                                                                                                                                                                                                                                                                                                                                                         | <b>controlling</b><br>33:13 45:14,19<br>46:15,19 47:4<br>47:15 48:3,7<br>48:22 49:13<br>50:17 51:11<br>53:5 59:1 60:7<br>60:21 61:2<br>62:15 67:11,20<br>69:7 72:5<br>85:10,14,17,21<br>85:22 86:7,8<br>86:21,22 87:4<br>89:6 101:9,16<br>102:16 104:8<br>104:15,21<br>106:19,21<br>107:5,7,21<br>117:8,11 | <b>core</b> 34:6<br><b>corp</b> 21:22<br><b>correct</b> 3:11<br>5:17 7:13,17<br>11:3,4 18:15<br>18:18 20:8<br>23:18 24:8,17<br>25:7 26:21,22<br>26:22 27:19<br>30:1,10 33:3<br>35:8 36:14<br>38:14 41:10,12<br>41:21 52:14,19<br>55:3 57:7,19<br>59:15 63:20<br>65:4,5 75:13<br>88:2 89:13,18<br>94:16 95:16<br>99:7,11 100:15<br>105:18 106:11<br>110:21 113:18<br>115:11 |
| <b>continues</b><br>17:16 19:16,20<br>29:15                                                                                                                                                                                                                                                                                                              | 76:12,14,17,20<br>77:8,14,17<br>78:10 79:11<br>81:19 86:2,4,9<br>86:13,14,16,17<br>86:18 87:6,8<br>89:4 90:12<br>92:4 93:21<br>94:1,4 95:4<br>96:1,7,20 98:2<br>98:7,9 99:3,15<br>99:20 100:7,8<br>100:12,13,17<br>100:22 101:3,4<br>101:5,12,13<br>102:4,4,5,6,10<br>102:11,12,15<br>102:19 103:3,5<br>103:8,16,21<br>104:6,20 105:3<br>105:8,12<br>106:17 107:3<br>107:18,20<br>109:3,4,13<br>110:7,13<br>113:10 117:1 | <b>controls</b> 61:1<br>89:9 101:7,14<br>107:20 114:5<br>117:2,4,6,14                                                                                                                                                                                                                                      | <b>corrected</b> 88:16<br><b>correction</b> 27:1<br>91:19 115:21<br>115:22                                                                                                                                                                                                                                                                                                 |
| <b>continuing</b><br>101:18                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>conversion</b><br>69:15                                                                                                                                                                                                                                                                                 | <b>correctly</b> 95:7                                                                                                                                                                                                                                                                                                                                                      |
| <b>continuous</b><br>38:17 42:13<br>43:1,5 44:4                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>copied</b> 88:7<br><b>copies</b> 11:13,15<br>11:16,19                                                                                                                                                                                                                                                   | <b>counsel</b> 3:7<br>5:22 6:14 11:6<br>11:15 24:2,4<br>115:4,8 116:8<br>121:10,14                                                                                                                                                                                                                                                                                         |
| <b>control</b> 17:14<br>28:14 29:12<br>30:18,20 32:8<br>33:3,6,7,12,20<br>33:22 34:1,2,3<br>34:11,14 35:6<br>45:10,18 46:6<br>46:9,12,13,14<br>46:17,20,21<br>47:3,8,19<br>48:19,20 49:1<br>50:10,19,21<br>51:3,5 57:22<br>58:4,14,16<br>59:4,6,13,17,21<br>60:5,16,20<br>61:1,20 62:6<br>62:14,21 63:3<br>63:18 64:21<br>65:17 67:9,18<br>67:19 68:2,14 | <b>controlled</b> 33:9<br>62:2,4 63:13<br>67:22 68:7                                                                                                                                                                                                                                                                                                                                                                     | <b>copy</b> 11:6<br>15:12,15,16                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                            |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>couple</b> 11:17<br>37:10 114:18<br>115:7 116:8<br><b>coupled</b> 45:15<br>49:17,19 61:3<br>81:7,9 102:18<br>107:22 117:9<br><b>course</b> 22:8<br><b>court</b> 4:14<br><b>covered</b> 28:21<br>30:2,12<br><b>cpu</b> 81:8<br><b>create</b> 51:6<br>68:19 74:18<br>75:1 77:5,15<br>82:11 90:16<br>99:3<br><b>created</b> 77:3<br><b>cross</b> 64:16<br>66:8 70:7,11<br>74:21,22 76:21<br>76:22 77:18<br>82:9 89:5<br>90:12 96:4<br>98:8 103:18<br>104:16,17<br>105:17<br><b>csr</b> 121:19<br><b>curtains</b> 110:2 | <b>data</b> 50:8,12<br>51:21 52:1,6,7<br>53:7 63:19<br>68:10,12,16<br>69:2,14,16<br>70:17 73:9<br>75:1 78:19<br>79:1 81:16,20<br>83:20,21 84:1<br>84:3 89:10<br>98:13 103:11<br>110:20<br><b>datas</b> 70:18<br><b>date</b> 7:10<br><b>dated</b> 120:8<br><b>david</b> 2:4<br><b>david.obrien</b><br>2:7<br><b>day</b> 69:8 70:16<br>99:4<br><b>days</b> 11:17<br><b>deal</b> 111:20<br><b>december</b> 1:11<br><b>declaration</b><br>5:15 6:2,6 7:4<br>10:16 11:1,2,3<br>12:1,3,5,13,18<br>18:8 21:13<br>22:13,18,21,22<br>23:2,5 24:6,9<br>25:6,11 33:1<br>34:9 36:6<br>37:11,13 44:22<br>45:5 48:12,13 | 52:12 57:4,8<br>57:10 64:6,9<br>65:1,13 71:19<br>87:12 89:17<br>93:7 94:14<br>115:12,15,16<br>120:6<br><b>deer</b> 44:15<br><b>defined</b> 20:18<br>62:3 63:12<br><b>defines</b> 62:20<br>67:5 102:14<br><b>defining</b> 84:22<br>85:2<br><b>definition</b> 31:3<br>31:4 32:10,13<br>32:15,21<br><b>denotes</b> 30:19<br>33:5<br><b>dependent</b><br>40:20 79:4,5,6<br>79:19 94:21<br><b>depends</b> 7:18<br>8:7,12,16,20<br>42:2,9<br><b>deposition</b> 1:14<br>3:14 4:10<br>118:16 119:9<br>121:3,5,8,12<br><b>depositions</b><br>3:10,12<br><b>describe</b> 18:19<br>20:3 42:11<br>43:4 66:19 | <b>described</b> 13:9<br>15:21 18:7<br>26:14 36:13<br>41:22 42:10<br>44:1,9 49:7<br>60:16,16 63:13<br>64:13 66:18<br>69:2 70:3,6<br>72:7,15 76:1<br>80:17 82:22<br>84:5 87:10<br>97:14 110:4,9<br><b>describes</b> 15:1<br>15:19 16:3,4<br>61:7 66:15<br>101:17<br><b>describing</b><br>16:18 17:8,9<br>17:10 29:16,20<br>52:15 65:13<br>94:8 101:14<br><b>description</b><br>16:19 17:6<br>18:16 19:10<br>24:21 26:10<br>29:2,5 36:16<br>49:5 66:16,21<br>93:14 113:2<br>120:3<br><b>descriptions</b><br>17:22 68:21<br><b>designed</b><br>108:20 |
| <b>d</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>d</b> 3:1 120:14<br><b>d.c.</b> 2:10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>desk</b> 55:17<br><b>detail</b> 66:18<br><b>detailed</b> 19:10<br><b>details</b> 72:22<br>101:19<br><b>detection</b> 61:5<br>117:10<br><b>determine</b><br>46:11 49:22<br>50:4 51:4 73:6<br>81:10,18<br><b>determines</b><br>50:2<br><b>device</b> 46:1<br>51:18 53:17<br>55:9 78:3,3,4,8<br>79:3,7 80:7<br>94:9<br><b>diagram</b> 26:17<br>27:4<br><b>difference</b><br>39:14<br><b>different</b> 3:20<br>9:9 10:1,2,5,5<br>10:13,14,18,19<br>13:4,7 14:2<br>19:4 21:3<br>26:14 27:20<br>33:19 34:20<br>35:15 36:9<br>47:12 53:3<br>58:21 65:22<br>74:11 91:11<br>96:15 | <b>digital</b> 19:13<br>26:17 27:4,8<br>29:6,10 41:14<br>43:7 94:5<br>112:4,6,16<br>116:19<br><b>directly</b> 104:13<br>109:11 117:3<br><b>disclose</b> 71:8<br>92:15,16 93:22<br>94:4,13,15,18<br>94:20,21 96:10<br>96:11,12,17<br>98:18,19 99:6<br>99:9,12,17<br><b>disclosed</b> 99:9<br><b>discloses</b> 44:3<br>63:5 72:11<br>96:18<br><b>disclosure</b><br>20:17 66:4<br>67:7<br><b>discuss</b> 5:22<br>21:7 47:1<br>96:16<br><b>discussed</b> 18:14<br>20:4 58:17<br>60:12 70:22<br>97:18 114:10<br><b>discusses</b> 20:9<br><b>discussing</b> 7:7<br>17:14 19:17<br>60:7 61:18<br>81:14 89:16 | 93:18<br><b>discussion</b><br>19:16,20 23:3<br>24:1 26:3<br>33:18 48:11,14<br>88:9 115:8<br><b>discussions</b><br>17:16 20:18<br>25:1<br><b>distinct</b> 34:12<br>112:11<br><b>distinction</b><br>37:15<br><b>distinguishes</b><br>32:19<br><b>dive</b> 35:21<br><b>document</b> 6:3<br><b>documents</b> 6:5<br>6:19 7:2 22:15<br><b>doing</b> 14:12,15<br>14:17,20,21<br>15:19 16:4<br>19:11 60:8<br>64:7 68:13<br>70:3,5 73:11<br>74:9 76:17<br>89:9 90:2<br>105:21 111:11<br>111:12<br><b>dot</b> 75:17,17,17<br>75:18,18,18<br><b>downstream</b><br>64:16 66:12,19<br>69:1 77:2,19 | 90:7,8,15 96:5<br>98:11 103:13<br><b>downstreams</b><br>96:5<br><b>downward</b><br>103:13<br><b>dr</b> 3:9 57:3<br>115:10 120:6<br><b>drop</b> 57:13<br><b>duly</b> 3:5 121:5<br><b>dynamic</b> 19:16<br>19:19 20:11,14<br>21:6 39:11<br>40:12 43:11<br>68:20 |
| <b>e</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                               |
| <b>e</b> 2:7,11,16 3:1<br>3:1 120:1,14<br><b>e.g.</b> 45:14 61:3<br>112:8,11<br><b>earlier</b> 32:18<br>48:11 114:10<br><b>earliest</b> 7:9<br><b>effect</b> 25:19<br>27:16<br><b>effort</b> 6:3<br><b>eight</b> 36:17<br><b>electrical</b> 61:1<br>67:9 101:8,15<br>102:15 107:20<br>117:7<br><b>electronic</b><br>39:11 40:13                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                               |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 65:19 93:21<br><b>electronically</b><br>111:12<br><b>element</b> 46:5<br>49:15 54:6<br>71:19 73:1<br>75:12,20 83:21<br>86:13,14 90:15<br><b>elements</b> 54:7<br>75:15,19<br><b>eli</b> 1:14 3:2<br>120:6,16<br><b>elucidates</b> 22:4<br><b>embodied</b><br>31:10<br><b>embodiment</b><br>27:5,9 28:4,21<br>29:6,13 30:1<br>30:11 112:15<br><b>embodiments</b><br>26:14 27:20<br>28:19 31:12,14<br><b>employed</b><br>121:11,14<br><b>employee</b><br>121:13<br><b>enables</b> 19:15<br><b>engineering</b><br>30:18 31:17,20<br>32:8 33:11<br>35:5 77:7<br><b>entire</b> 18:3,6<br>26:3 67:1 | <b>entirely</b> 3:20<br><b>entirety</b> 81:22<br><b>errors</b> 115:11<br><b>esquire</b> 2:4,4,9<br>2:14<br><b>essentially</b><br>14:10,18 44:11<br>54:20 59:20<br>60:21 64:10,11<br>65:13 68:13<br>71:9 72:13<br>73:11 78:8,12<br>78:13 81:20<br>83:3 84:11<br>87:15 88:1,10<br>90:13,20,21<br>92:3,10 98:1<br>98:15 100:8<br>102:2 103:12<br>104:22 105:9<br>109:4,10,16<br>110:4,7,15<br>113:20 117:11<br>117:18<br><b>est</b> 1:12 57:1<br>119:8<br><b>et</b> 29:14,18,19<br>38:5 47:13<br>67:15 101:16<br>101:16,17<br><b>eventually</b><br>21:11 24:12<br>63:18 69:16<br>70:15 73:15 | 75:1 89:10<br><b>exact</b> 106:7<br><b>exactly</b> 8:17<br>64:12 111:19<br><b>exaggerating</b><br>70:10<br><b>examination</b><br>3:4,7 115:4<br>120:15<br><b>examined</b> 3:5<br><b>example</b> 4:11<br>12:3,5 21:1<br>28:19 29:11<br>38:16 42:22<br>69:6 112:6,10<br>112:14,17,18<br>113:14,18,22<br><b>examples</b> 12:7<br><b>excluding</b><br>33:13<br><b>exhibit</b> 11:1,10<br>11:20,22 15:3<br>15:6,8,17 21:8<br>21:14 23:7,10<br>25:10 26:20<br>36:6 38:22<br>39:2 57:5,7<br>70:19 97:12<br>111:21 120:4,6<br><b>exhibits</b> 11:7<br>11:14,16 22:20<br>23:1 57:15<br>120:2 | <b>expect</b> 66:3<br><b>expert</b> 5:14 7:4<br><b>explain</b> 96:13<br>116:12 117:15<br><b>explained</b><br>13:19 75:9<br>87:5 111:9<br><b>explaining</b> 13:1<br><b>explains</b> 31:1<br><b>explanation</b><br>37:13<br><b>explanations</b><br>94:2<br><b>exposing</b><br>117:19<br><b>exposure</b> 17:13<br>19:4 20:15,19<br>20:21 21:4<br>30:21 32:19<br>116:18 117:14<br>117:15,15,17<br>118:5<br><b>express</b> 31:2<br>32:10,13,15,21<br><b>expressly</b> 45:17<br><b>external</b> 79:9<br>79:10<br><b>eyes</b> 25:3 26:11<br>28:17 30:7<br>32:6 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>f</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>fails</b> 71:7 93:4<br>93:13,22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|                        |                        |                      |                        |
|------------------------|------------------------|----------------------|------------------------|
| <b>fairly</b> 51:13    | <b>fine</b> 55:15      | <b>follow</b> 63:14  | 104:2,11 105:5         |
| <b>fall</b> 28:4       | <b>first</b> 25:14,16  | <b>followed</b> 53:6 | 105:9,12,14,16         |
| <b>falls</b> 27:10     | 35:13 36:8             | <b>follows</b> 3:6   | 105:19,22              |
| <b>familiar</b> 3:21   | 37:19 45:2,4           | <b>foregoing</b>     | 106:1,2,5,13,18        |
| <b>family</b> 23:13    | 69:18 71:22            | 121:3,5              | 106:20,22              |
| <b>fantastic</b> 97:7  | 83:10,11,12,13         | <b>form</b> 18:7     | 107:4,9                |
| <b>fashion</b> 9:17    | 83:16 84:12,14         | 108:10               | <b>frames</b> 38:16    |
| <b>feedback</b> 89:8   | 84:14 86:17            | <b>formation</b>     | 39:21 40:4             |
| 90:3                   | 95:3 115:9             | 19:15                | 42:12 43:1,21          |
| <b>field</b> 53:1,8,12 | <b>five</b> 4:20 35:19 | <b>formed</b> 68:9   | 44:9,12,13             |
| 53:15,19,22            | 96:22 118:12           | <b>fortune</b> 3:12  | 59:11 60:2             |
| 54:6,10,16             | 118:20                 | <b>forward</b> 4:10  | <b>front</b> 11:6      |
| 55:3,11                | <b>flows</b> 16:22     | 61:4                 | 15:12 109:11           |
| <b>figure</b> 26:1,4,7 | 17:15                  | <b>four</b> 29:11,13 | <b>full</b> 6:13       |
| 26:13,13,16,16         | <b>focal</b> 45:10,17  | 29:14                | <b>function</b> 65:20  |
| 26:21 27:2,4,7         | 57:22 58:4,13          | <b>frame</b> 7:15    | <b>functionality</b>   |
| 27:8,10,19,20          | 59:4 60:4,15           | 13:5 14:3,7          | 64:20                  |
| 27:22 28:1,4           | 60:22 95:4             | 19:8 39:13,13        | <b>further</b> 47:8    |
| 28:21 29:1,5           | 99:15,20 101:5         | 39:15,15 40:15       | 78:18 85:9,16          |
| 29:21,22 30:2          | 101:13 102:5           | 40:15 41:2,2,2       | 106:16 107:3           |
| 30:11 31:10            | 107:10,15,19           | 41:3,4,5 44:15       | 118:10 119:5           |
| 39:17,18               | 108:3,8,15,20          | 44:16,16 47:9        | 121:13                 |
| <b>figures</b> 17:17   | 109:3,10,16,17         | 47:10,12,13,14       | <b>fuse</b> 8:10 13:8  |
| 26:4,9,10              | 109:20,22              | 47:20 53:6           | 77:2 82:11,13          |
| <b>file</b> 23:19      | 110:3,15 111:1         | 57:22 58:4,13        | <b>fused</b> 8:19 19:5 |
| <b>film</b> 109:11     | 111:9,13 116:9         | 58:18,21,22,22       | 19:7 21:4              |
| 116:18                 | 116:21 117:6           | 59:4,8,9,14,16       | <b>fusing</b> 14:5     |
| <b>filtering</b> 69:15 | <b>focus</b> 58:9      | 59:19 60:3,15        | <b>fusion</b> 7:15,16  |
| <b>final</b> 6:3 50:13 | 108:20                 | 66:1,2,13,13         | 7:21 8:6,13,14         |
| 52:8 68:19             | <b>focused</b> 94:5    | 68:10 69:3,16        | 8:17,21,22 9:3         |
| <b>financially</b>     | 108:22                 | 69:20 70:6           | 9:3 12:4,13,14         |
| 121:15                 | <b>folder</b> 15:4     | 74:11 89:4,5         | 12:20 13:5,10          |
| <b>find</b> 116:4      | 57:13                  | 95:4 99:15,20        | 13:11,17 14:3          |
|                        |                        | 103:1,8,9,18         | 14:3,8 17:21           |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18:10,16,19<br>20:4 66:12<br>77:19 90:8,16<br>96:6 98:12                                                                                                                                                                                                                                                                                                                                                                                                                           | 98:6 100:16<br>101:22<br><b>generations</b><br>74:20                                                                                                                                                                                                                                                                                                                                                                                                                                                | 101:10 103:5<br>103:10 105:7<br>108:6 111:21<br>112:1 113:5<br>114:3,22 117:5                                                                                                                                                                                                               | <b>hard</b> 11:6<br>15:12,14,16<br><b>haynes</b> 2:5,9<br><b>haynesboon.c...</b><br>2:7<br><b>haynesboone....</b><br>2:7,11<br><b>head</b> 5:3,8 24:1<br>24:2 39:1<br>116:1<br><b>header</b> 93:2,3<br><b>held</b> 1:14<br><b>hello</b> 88:18<br><b>hereto</b> 121:15<br><b>hierarchy</b><br>39:22 40:1<br><b>higher</b> 8:1<br><b>history</b> 22:4,11<br>22:14,16 23:4<br>23:19 24:10<br><b>hits</b> 68:22<br><b>hong</b> 2:4<br><b>hong.shi</b> 2:7<br><b>hour</b> 4:20,21<br>70:10<br><b>housekeeping</b><br>115:6,9<br><b>hyperspectral</b><br>10:11<br><b>hypotheticals</b><br>111:16,18,20 |
| <b>g</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>getting</b> 87:1<br><b>give</b> 6:13 10:21<br>21:1 25:18<br>27:15 64:8<br>88:14<br><b>given</b> 43:16<br>57:6 121:9<br><b>gives</b> 103:12<br>113:14<br><b>global</b> 30:21<br><b>go</b> 3:22 4:10<br>12:6 16:15<br>19:11 21:13<br>22:22 25:8<br>28:9 35:11<br>36:1,5 37:11<br>38:8 39:2,16<br>39:16 40:20<br>41:4 42:17<br>44:21 45:21<br>48:12 49:8<br>51:7 52:11,16<br>57:3 60:18<br>65:12 67:13<br>69:19 70:19<br>75:6 79:4 80:5<br>80:18 81:2<br>82:18 85:3<br>87:13 97:5<br>100:1,11 101:1 | <b>goes</b> 16:20,20<br>94:7<br><b>going</b> 6:19 13:7<br>67:1 69:5<br>81:18 83:5<br>94:22 109:7<br>115:18<br><b>good</b> 4:20<br>35:18 66:16<br><b>great</b> 4:19,22<br>114:17<br><b>green</b> 9:15<br>112:8<br><b>ground</b> 4:1<br>71:17<br><b>group</b> 34:13<br><b>guess</b> 8:4 91:13 | <b>h</b><br><b>h</b> 120:1<br><b>half</b> 70:10<br><b>hand</b> 108:7,14<br><b>handled</b> 19:22<br><b>handling</b> 81:13<br><b>happening</b><br>17:15,19<br><b>happy</b> 13:20<br>48:10 97:16<br>100:1                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>g</b> 3:1 9:14<br>113:4<br><b>game</b> 118:17<br><b>gate</b> 64:15 66:6<br>74:20 76:19<br>89:2,8 90:3,11<br>96:4 98:5<br>100:16 101:22<br>102:10<br><b>general</b> 90:1<br>92:12 108:18<br><b>generally</b> 7:6<br>9:21,22 10:3<br>30:14 32:1<br>40:18,20 54:1<br>54:2 82:17<br>88:3 96:19<br>98:3 109:21<br><b>generate</b> 90:21<br><b>generated</b><br>38:17 42:13<br>43:1<br><b>generating</b><br>51:22 84:2<br><b>generation</b><br>64:15 66:6<br>76:19 89:3<br>90:11 96:4 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                       |                       |                        |                        |
|-----------------------|-----------------------|------------------------|------------------------|
| <b>i</b>              | 77:20 78:1,2,3        | 29:8,17 81:5           | 81:13 83:19            |
| <b>idea</b> 30:15     | 78:4,6,8,20           | 86:7                   | 85:2,20 86:7           |
| 64:13 88:11           | 79:2,2 81:17          | <b>including</b> 41:15 | 86:22 100:8,13         |
| 90:1                  | 81:21 82:11,13        | 93:15                  | 102:7,20               |
| <b>identification</b> | 84:2 89:11            | <b>incorrect</b> 92:21 | 103:17 104:9           |
| 52:5                  | 90:16,21 94:6         | <b>increased</b>       | 104:15,22              |
| <b>identified</b>     | 94:9 98:14            | 20:15                  | 107:8                  |
| 95:18                 | 103:11,14             | <b>independent</b>     | <b>individual</b> 33:3 |
| <b>identify</b> 46:10 | 112:7,22              | 48:20 50:19            | 34:11                  |
| 46:11,14 51:16        | <b>imaged</b> 41:14   | 51:5 52:4 59:6         | <b>indoors</b> 42:3    |
| 52:3 83:5             | <b>imagery</b> 10:12  | 59:20 62:5             | <b>information</b>     |
| <b>identifying</b>    | 37:16,17 98:12        | 63:2,18 64:14          | 8:10 13:8 14:5         |
| 51:14 83:3            | 99:4                  | 64:21 65:17            | 21:6 34:16             |
| <b>ii</b> 1:7 92:16   | <b>images</b> 14:9    | 66:5 70:4 71:2         | 82:12,13               |
| <b>iii</b> 92:16      | 15:20 16:18           | 71:8,20,21             | <b>ingredient</b> 82:7 |
| <b>illustration</b>   | 19:3,4,7 21:3         | 74:3,7,16,17,20        | 89:20                  |
| 28:20                 | 52:22,22 53:12        | 76:11,15,17,18         | <b>ingredients</b>     |
| <b>image</b> 7:15,16  | <b>imaging</b> 65:15  | 76:20 77:17            | 66:3 72:17             |
| 7:21 8:1,2,3,3,6      | 74:3 95:22            | 82:5 83:7 89:3         | 73:18,21 74:13         |
| 8:14 9:3,6,13         | <b>implement</b>      | 90:11 92:4             | 75:8,21 77:10          |
| 9:18 14:6,7           | 65:22 74:10,11        | 94:19,20 96:1          | 78:14 80:21            |
| 19:15 20:4,14         | <b>implemented</b>    | 96:4,7,20 98:1         | 82:1,16,21             |
| 35:16 36:10           | 45:13                 | 98:5,7 99:3            | 88:1,6,12 92:5         |
| 38:20 45:12,22        | <b>important</b>      | 100:17 102:3           | 98:4                   |
| 50:9,13,14,22         | 20:17                 | <b>independently</b>   | <b>inherently</b> 44:3 |
| 51:2,6,18 52:1        | <b>incident</b> 80:9  | 19:22 33:8             | 44:5 63:5,7            |
| 52:8,8 53:21          | 80:12 117:19          | 34:1,3,15,20           | <b>initial</b> 6:1,1   |
| 54:16 55:2,11         | <b>include</b> 6:5    | 46:21 53:2             | <b>input</b> 79:9,10   |
| 63:19 66:9            | 25:22 26:6,8          | 58:17 59:2             | <b>inserting</b> 7:22  |
| 68:9,19 69:9          | 51:19 112:4,6         | 60:9 61:21             | <b>instance</b> 7:22   |
| 70:16,17 73:10        | 112:17                | 62:15,16 66:7          | 8:9 9:12 12:16         |
| 73:16 74:18           | <b>included</b> 24:18 | 69:8,12 72:5           | 17:9 18:22             |
| 75:2 77:2,5,16        | <b>includes</b> 6:19  | 73:15 74:6,18          | 19:11 28:10            |
|                       | 17:21 26:2            | 77:14 80:15            | 37:11 42:3             |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 72:20 108:17<br><b>integrated</b> 61:2<br>67:10 101:8,15<br>102:16 107:21<br>117:7<br><b>integrates</b><br>45:12<br><b>integrating</b><br>110:11,12,12<br><b>integration</b><br>13:4,7 14:2<br>17:11,14 19:14<br>19:21 20:16,19<br>20:22 28:14<br>29:12 30:19<br>31:3 32:9,11<br>32:15,20,22<br>33:6,12,14,20<br>34:11,21 35:6<br>37:21 39:12<br>40:14 45:9,11<br>45:15 46:6,9<br>46:11,18,20,21<br>47:3,8,19 48:4<br>48:7,19,21<br>49:13 50:1,2,5<br>50:11,17,20<br>51:11,14,17,22<br>52:3 53:3,5<br>58:16 59:1,7<br>59:13,21 60:8<br>60:20,21 61:3<br>61:20 62:2,3<br>62:14,16,20,20 | 63:2,12,13<br>64:21 65:17<br>66:1 67:6,9,18<br>68:1,6,8 69:7<br>70:4 71:2,8,21<br>72:4,5 73:7,14<br>74:4,6,7,11,16<br>74:16,17 76:10<br>76:12,15 77:8<br>77:15 78:11<br>79:8,12 80:8<br>80:11,14 81:11<br>81:14,19 82:6<br>83:3,5,11,12,12<br>83:13,16 84:1<br>84:12,13,14,16<br>85:1 92:4 94:1<br>94:4 96:1,7,20<br>98:2 100:7,13<br>100:18,22<br>101:2,4,12<br>102:3,4,7,17<br>103:4,7,16,21<br>104:7,8,20,21<br>105:8,10 106:4<br>106:17,19,22<br>107:4,5,8,18,22<br>109:5,6,9,15<br>110:7 112:9,13<br>113:7,10,12<br>114:5,6 117:9<br>117:12,21<br>118:1,4,5,7 | <b>intellectual</b> 1:7<br>3:18<br><b>interactive</b> 6:3<br><b>intercedent</b><br>49:21<br><b>interested</b><br>121:16<br><b>interpretation</b><br>35:10 37:6<br><b>interpreted</b><br>33:17 34:6<br><b>interrupt</b> 26:19<br><b>interscene</b><br>39:10 40:12<br>43:11,12,16<br><b>intrascene</b><br>43:14,15<br><b>invention</b> 30:5<br><b>ipr</b> 33:19<br><b>ipr2025-00222</b><br>1:6<br><b>iprs</b> 5:1,5<br><b>irrelevant</b><br>24:22<br><b>ish</b> 19:2<br><b>isolated</b> 38:19<br><b>isolation</b> 22:2<br><b>item</b> 61:12<br>99:17,17,17,18<br>116:15<br><b>items</b> 29:21<br>61:11,11,16<br>62:6,8 63:1,5<br>63:17,21 65:6 | 70:22 76:17<br>87:17 88:5<br>96:13<br><b>j</b><br><b>jacinto</b> 2:5<br><b>jonathan</b> 2:9<br><b>jonathan.bow...</b><br>2:11<br><b>jump</b> 35:17<br><b>k</b><br><b>kind</b> 42:3 66:21<br>69:13 72:21<br>90:18 111:11<br><b>klapper</b> 1:16<br>121:2,19<br><b>know</b> 4:17 5:7<br>8:1,3,9 9:8<br>11:19 12:21<br>13:8,9 14:6,7<br>14:13 16:3<br>24:22 25:2,12<br>27:2 28:12<br>30:8,22 31:4<br>32:4,5 33:5<br>34:15 36:20<br>37:14 40:19<br>42:2,8 43:20<br>43:20,21 44:17<br>46:10 47:1,10<br>47:22 52:9<br>54:11 55:6<br>60:12 62:15<br>68:10,15,17 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 72:14,22 74:22<br>76:11,22 77:18<br>78:21 82:10,12<br>82:16 83:8,22<br>84:20 88:6<br>89:9 90:5,11<br>90:18 92:10<br>93:20 96:3<br>98:15,20,21<br>99:8 100:12<br>101:17 102:10<br>102:11 105:10<br>105:11,13<br>106:3,9 108:16<br>108:17 109:1,5<br>109:8,11,12,14<br>110:12,17,18<br>113:2 114:9<br>116:18 117:3<br><b>knowledge</b><br>25:7 69:22<br><b>known</b> 8:6,14<br>8:19<br><b>koenig</b> 2:14 | <b>large</b> 68:11,20<br><b>law</b> 111:4<br><b>legal</b> 44:6 63:8<br>63:9<br><b>lenses</b> 108:19<br><b>level</b> 41:22 80:9<br>80:12<br><b>levels</b> 41:15<br><b>light</b> 13:15<br>18:12 22:3,9<br>25:3 28:16<br>30:6 32:5,5<br>41:15,16,17,18<br>41:22 53:16<br>60:10 62:1,18<br>72:10,13 80:9<br>80:12 100:20<br>105:2 108:20<br>108:22 110:11<br>113:6 116:17<br>117:20<br><b>lighting</b> 39:9<br>40:11 42:5,8<br><b>likely</b> 111:10<br><b>limitation</b> 47:6<br>54:14,15,17<br>59:18 70:21<br>78:5,17,22<br>80:20 82:20<br>84:21 93:9,17<br><b>limitations</b><br>93:5,13 94:18<br>98:22 | <b>limited</b> 29:14<br>31:13<br><b>limiting</b> 84:20<br><b>limits</b> 78:21<br><b>line</b> 16:15 17:5<br>17:8,18,22<br>18:1,5 19:2<br>20:5,12,13<br>27:3,7 29:3,4<br>39:6,9 40:6,9<br>40:10 41:6,8,9<br>43:13 60:19,19<br>68:4,5 101:2,6<br>112:1,5<br><b>lines</b> 16:10,11<br>17:12 19:2,12<br>20:6,12 31:5<br>32:14,17,18<br>38:4,4 62:22<br>67:8,15 101:11<br>107:17 110:9<br>117:5<br><b>link</b> 6:18,22<br><b>list</b> 22:18,20<br>23:1<br><b>listed</b> 24:14<br>25:6 61:11<br>63:20 72:17<br>73:22 77:10<br><b>little</b> 49:7 65:11<br>67:12 72:22<br>92:11<br><b>llc</b> 1:7 | <b>llp</b> 2:5,9<br><b>long</b> 104:7,21<br>106:18 107:5<br><b>look</b> 12:15 16:1<br>16:2,5 17:8,10<br>18:22 19:1<br>24:8 27:3,6<br>28:8,10 29:1<br>30:15,17 32:13<br>32:17 37:18<br>38:1 39:17<br>43:9 54:13<br>64:6,9 68:3<br>72:20 78:16<br>88:19 97:22<br>109:7 115:8<br><b>looking</b> 15:11<br>20:11 49:15<br>81:21<br><b>lot</b> 88:8<br><b>low</b> 41:15<br><b>lower</b> 8:2<br><b>lunch</b> 55:12<br>56:1<br><b>lux</b> 41:16,17,19 |
| <b>l</b>                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>m</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>labeled</b> 45:17<br>75:12,14<br><b>language</b> 22:1<br>22:2,5,7,11<br>28:22 30:3,12<br>31:9 51:13<br>64:10,12 86:11<br>87:2 106:7                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>mail</b> 2:7,11,16<br><b>make</b> 47:12<br>58:11 59:8,9<br>59:11 67:3<br>91:18,20,20<br>92:1 97:11<br>105:14,15                                                                                                                                                                                                                                                                                                                            |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>makes</b> 47:11<br>58:11 77:21,21<br>77:21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 90:1,3,10<br>93:19 96:14<br>104:4 105:21<br>108:8,15<br>111:15 112:20<br>114:10                                                                                                                                                                                                                                                                                                                                                                      | <b>medical</b> 4:11<br><b>meet</b> 93:5,9,13<br>98:19,21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>miyazaki</b> 90:18<br>90:19 92:8,11<br>92:14,16 93:4<br>93:8,13 94:3,8<br>94:12,15 95:1<br>95:2,14 96:9<br>96:10 97:19<br>98:17,18 99:1<br>99:6,8,10,12,16<br>116:13                                                                                                                                                                                                                                                      |
| <b>making</b> 83:17<br><b>manage</b> 103:19<br><b>managed</b> 19:21<br><b>management</b><br>96:5<br><b>manner</b> 69:17<br><b>marked</b> 11:11<br>15:9,17 120:2<br><b>materials</b> 5:22<br><b>matsushima</b><br>7:22 71:7,7,15<br>72:11<br><b>mean</b> 7:19 8:7<br>8:8,16 9:11<br>10:8 11:2<br>12:14 13:17<br>14:8,10 16:2<br>17:6 18:22<br>19:18 20:1,9<br>23:11 24:20<br>26:9 28:2 30:4<br>30:9,14 31:21<br>32:2,12 36:19<br>36:20 40:19<br>42:1 43:6,9<br>44:5 53:14<br>54:1 55:5 64:2<br>69:4 71:4,16<br>72:20 78:7<br>79:21 83:1<br>86:10 88:3,4 | <b>meaning</b> 22:4<br>25:2 31:22<br>36:12 37:14<br>63:8 107:14<br>108:3<br><b>means</b> 17:11<br>33:21 40:17,22<br>41:2 44:11<br>65:2 83:6 86:1<br>87:6 117:15,16<br>117:18<br><b>mechanical</b><br>108:21 109:19<br>109:20 110:1<br>111:2,11,14<br>116:9,12,15<br>117:14<br><b>mechanically</b><br>116:20<br><b>mechanism</b><br>61:5 89:21<br>117:10<br><b>mechanisms</b><br>87:19 88:5,12<br>90:20 91:3<br>92:14 95:5,13<br>95:19 97:14<br>99:16 | <b>mentioned</b><br>12:21 16:14<br>18:21 25:22<br>107:10,12<br><b>merely</b> 65:18<br><b>merged</b> 19:5,7<br><b>merit</b> 1:16<br><b>method</b> 21:8<br>83:1 85:8<br><b>millisecond</b><br>83:17 84:18,19<br>112:12,12,12<br><b>milliseconds</b><br>51:1 52:10<br>69:13<br><b>minute</b> 35:19<br>71:12 88:14<br>96:22 114:11<br>118:12<br><b>minutes</b> 4:20<br>55:13,13 116:8<br>118:20<br><b>misread</b> 85:15<br><b>missed</b> 108:12<br><b>misspoke</b> 71:12<br><b>misstates</b> 111:3<br><b>mistaken</b> 79:17<br>80:4<br><b>misty</b> 1:16<br>121:2,19 | <b>miyazaki's</b><br>93:21<br><b>moderate</b> 41:17<br><b>moment</b> 12:1<br>64:8<br><b>monday</b> 3:17<br><b>move</b> 87:12<br>114:20<br><b>movement</b><br>44:15,17,17<br><b>moving</b> 21:10<br>44:15<br><b>multi</b> 57:22<br>58:3,6,12<br>60:15 65:18<br>72:6 74:8 76:3<br>92:5,9 95:4<br>96:2,8,21 98:2<br>99:15,19<br><b>multichannel</b><br>52:22 53:9,12<br><b>multiple</b> 3:12<br>8:10,11 9:5,10<br>9:11,19 19:14 |

|                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20:15 26:9<br>53:21 55:2<br>60:2 69:5<br>82:10 89:6<br>97:16 98:14<br>100:3,10 106:5<br>115:17<br><b>multispectral</b><br>10:12                                                                                                                                                                                                                                                                         | <b>neither</b> 94:3<br>121:10<br><b>new</b> 57:15<br><b>non</b> 8:3<br><b>notary</b> 1:19<br>121:1,19<br><b>notice</b> 66:14<br><b>noticed</b> 92:18<br><b>noting</b> 65:19<br><b>number</b> 11:20<br>57:16 73:21,22<br>73:22 83:18<br><b>numbers</b> 22:1<br><b>numerous</b> 19:3<br>21:3        | 79:21 82:7,17<br>94:19 113:3<br><b>odds</b> 13:2<br><b>office</b> 1:1<br><b>officer</b> 121:2<br><b>oh</b> 5:2 21:19<br>36:19 57:8,9<br><b>okay</b> 3:9,21 5:9<br>6:21 7:2,6 11:9<br>11:18 12:11<br>15:18 25:11<br>27:14 36:5,7<br>38:15 40:7<br>42:18 55:16,19<br>75:11 79:4<br>106:8 114:22<br>115:2,3 119:1<br><b>once</b> 13:6 19:3<br>21:3<br><b>open</b> 6:21 7:1<br>10:22 11:2,5<br>15:4,11 38:18<br>39:10 40:12<br>41:16,17,18<br>45:9,11,13,14<br>45:17 116:16<br>117:18 118:3<br><b>opening</b> 107:6<br><b>opens</b> 108:21<br><b>operate</b> 13:6<br>34:20<br><b>operates</b> 13:3<br><b>operating</b> 14:1<br>53:2 | <b>operative</b> 25:19<br>27:16<br><b>opine</b> 111:17<br><b>opined</b> 32:4<br>33:15<br><b>opinion</b> 10:16<br>17:20 25:17<br>31:9 32:7<br>33:10 35:3<br>40:16 41:1<br>44:2 49:11<br>50:15 51:9<br>53:20 55:1<br>59:3,16 60:14<br>63:4 69:1<br>72:16 73:17,20<br>81:22 86:6,20<br>91:2,16 93:8<br>93:10 95:11,17<br>105:18 106:21<br><b>opinions</b> 79:15<br>80:2<br><b>optic</b> 29:17<br>46:3 54:9<br>75:16 76:5,8<br>86:2,3 87:6,7<br>100:4 113:2<br><b>optical</b> 113:5<br><b>optics</b> 78:10<br>85:10,14,18,21<br>100:11 108:19<br>114:1,3<br><b>orchestration</b><br>66:8 77:18 |
| <b>n</b>                                                                                                                                                                                                                                                                                                                                                                                                | <b>o</b>                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>n</b> 3:1 120:14<br><b>n.w.</b> 2:10<br><b>name</b> 6:13<br><b>narrow</b> 54:18<br><b>narrows</b> 47:7<br>58:18,20 59:7<br>84:13 103:6,12<br><b>necessary</b><br>54:22 87:3<br><b>need</b> 4:16 10:10<br>46:10 62:6<br>64:19,20 66:5<br>66:7 70:14<br>72:8 74:12<br>75:3 76:16<br>78:13 79:10<br>82:6,8,15 84:5<br>92:6 96:2<br>102:9 103:17<br>104:16 105:22<br>106:9<br><b>needs</b> 96:19<br>99:2 | <b>o</b> 3:1<br><b>o'brien</b> 2:4<br><b>oath</b> 4:3<br><b>objection</b> 10:7<br>79:13 91:5<br>108:10 111:3<br><b>objective</b> 13:5<br>14:4<br><b>obviously</b> 5:21<br>7:18 12:21<br>13:22 14:11,19<br>16:12 18:4<br>24:22 26:2,4<br>28:7 37:2 49:1<br>55:5 62:17<br>63:14 66:17<br>70:11 71:6 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|                        |                |                        |                       |
|------------------------|----------------|------------------------|-----------------------|
| <b>order</b> 116:17    | 30:15 31:1,6   | 97:12,14,18,22         | 24:12 26:1,7          |
| <b>ordinary</b> 25:2   | 31:17,21 33:4  | <b>paragraphs</b>      | 26:14,21 29:2         |
| 30:18 31:17,20         | 33:16,17,19    | 16:13 37:10            | 29:4 30:11            |
| 31:21 32:8             | 34:5,8,18,19   | 38:7 48:14,16          | 31:4,11 32:12         |
| 33:10 35:5             | 35:1,2,4,9,11  | 63:14 93:10            | 32:16,19 37:2         |
| 36:12 77:7             | 35:14 36:5,15  | 94:12                  | 38:2 41:7             |
| 107:14 108:3           | 37:18,20 38:1  | <b>parameter</b>       | 42:11 43:4,19         |
| <b>outcome</b>         | 38:8,11 39:1   | 85:10,14,18,21         | 44:1,3,7,8 45:5       |
| 121:16                 | 39:17 42:17,19 | 86:7,8,16,17,19        | 45:8 49:9             |
| <b>outdoor</b> 41:19   | 44:10,21 45:3  | 87:5,7                 | 52:15,18,21           |
| 42:7                   | 45:4,8 48:1    | <b>paren</b> 39:10,11  | 63:5 108:7,14         |
| <b>outdoors</b> 42:3   | 52:11,17,21    | 40:12,13 41:16         | 112:15 115:4          |
| <b>overall</b> 66:2    | 57:4,16,17,21  | 41:16,17,18,18         | 116:10,22             |
| 71:16                  | 60:13,17 61:8  | 41:19 45:14,15         | 120:4,7               |
| <b>own</b> 109:3       | 61:9,12,17     | <b>part</b> 12:18 46:4 | <b>patent's</b> 31:2  |
| <b>owner</b> 1:8 2:13  | 63:6,21 64:7   | 50:6 51:21             | 32:10                 |
| 5:11 115:4             | 64:10 65:1,7   | 58:6 75:7 76:6         | <b>pdf</b> 15:6       |
| <b>owner's</b> 120:8   | 65:10,12,14,16 | 77:22 79:16            | <b>pennsylvania</b>   |
| <b>owners</b> 5:6      | 67:15 68:5     | 80:3 83:22             | 2:15                  |
| <b>p</b>               | 70:22 71:1,11  | 95:3 111:17            | <b>people</b> 8:19    |
| <b>p</b> 3:1           | 71:18,22 72:18 | 118:15                 | <b>perfect</b> 77:21  |
| <b>p.m.</b> 57:1 119:8 | 73:22 74:2     | <b>particular</b> 21:2 | <b>perform</b> 96:20  |
| <b>page</b> 23:4,6     | 75:8,21 76:2,7 | 42:6 116:5             | <b>performed</b>      |
| 35:2 37:12             | 76:13 77:10    | <b>parties</b> 121:11  | 111:13                |
| 65:16 120:3,15         | 78:14 82:2,3   | 121:15                 | <b>period</b> 47:14   |
| <b>pages</b> 115:17    | 82:22 84:6     | <b>parts</b> 24:6      | 80:16 106:2           |
| <b>paper</b> 11:13,15  | 87:13 88:7,16  | <b>pass</b> 113:5      | <b>petition</b> 79:16 |
| <b>paragraph</b>       | 88:20 89:13,14 | 118:11                 | <b>petitioner</b> 1:5 |
| 12:8,16,19             | 89:17,20,22    | <b>paste</b> 116:3     | 2:3 3:4,7 5:10        |
| 13:12 16:3,7           | 91:4 92:7,19   | <b>patent</b> 1:1,2,8  | 13:1                  |
| 21:14,16 22:19         | 93:2,12,15,18  | 2:13 5:6,11 7:5        | <b>ph.d.</b> 1:14 3:2 |
| 23:1,7,13,15,16        | 93:20 94:14    | 7:10 18:6              | 120:16                |
| 23:17 25:8,15          | 95:3,12,19,20  | 19:10,19 20:10         | <b>philadelphia</b>   |
|                        | 95:21 96:18    | 21:2 23:20             | 2:15                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>phillips</b> 21:22<br>25:18 27:15<br><b>photo</b> 117:10<br><b>photograph</b><br>35:16 36:10<br>38:19<br><b>photography</b><br>94:6<br><b>photons</b> 110:11<br>110:18 118:9<br><b>physical</b> 116:15<br><b>physically</b><br>47:18<br><b>pick</b> 67:2<br>110:17<br><b>pickup</b> 94:9<br><b>piece</b> 21:5,5<br><b>pinhole</b> 108:17<br>108:18<br><b>pixel</b> 21:5,5<br><b>pixels</b> 39:13<br>40:14 69:18<br><b>place</b> 8:22 9:1<br>105:4<br><b>placed</b> 88:7<br><b>places</b> 69:20<br><b>plain</b> 12:18<br>31:21 36:12<br>107:14 108:2<br><b>plane</b> 45:10,17<br>57:22 58:4,14<br>59:4 60:4,15<br>60:22 95:4<br>99:15,20 101:5 | 101:13 102:5<br>107:10,15,19<br>108:3,8,15,20<br>109:1,3,10,16<br>109:17,20,22<br>110:3,16 111:1<br>111:9,13 116:9<br>117:6,19<br><b>please</b> 4:14,17<br>6:13,21 10:22<br>11:19 15:4,14<br>16:8,15 21:13<br>21:16,19,20<br>35:11 36:1<br>38:11 45:2<br>52:17 57:3<br>79:6 80:5 85:7<br>87:14 89:13,14<br>89:19 93:1<br>112:3 116:3<br><b>plurality</b> 28:12<br>46:2,2 49:18<br>50:3,6,8,12<br>51:15,17,19,19<br>52:2 54:9<br>58:10,12 73:7<br>73:9 75:16,16<br>76:2,3,5,6 78:9<br>78:9,19 81:4,7<br>81:9,12,16<br>83:4 85:11<br>100:2,4,5,10<br>112:21 113:1,1<br>113:21,22 | 114:1<br><b>point</b> 37:5 44:6<br>65:9 67:3<br>68:22 103:20<br>104:14,16<br><b>pointed</b> 12:16<br>12:20 32:18<br>60:13 62:21<br>63:15 67:7<br><b>points</b> 67:3<br><b>portion</b> 29:17<br>29:18<br><b>posita</b> 7:9<br>13:13,15 18:5<br>25:3,17 26:11<br>27:14 28:17<br>30:7 31:22<br>32:6 33:11<br>44:7 63:10,15<br>66:2 70:1<br>72:12 75:4<br>108:8,15<br>109:22 110:22<br><b>posita's</b> 7:14<br>17:20 18:2,9<br>69:22<br><b>potential</b> 44:15<br><b>potentially</b><br>40:3 58:21<br>59:10 105:14<br>117:17<br><b>practical</b> 65:4<br><b>practically</b><br>54:2,7,11,20 | 55:5<br><b>practicing</b><br>104:9 105:1<br>106:20 107:9<br><b>prepared</b> 5:14<br><b>preparing</b> 5:19<br>6:6,11<br><b>presumably</b><br>105:16<br><b>pretty</b> 8:13<br>32:13<br><b>previous</b> 31:6<br>32:17 81:1<br><b>previously</b><br>11:11 15:9<br>120:2<br><b>printed</b> 47:18<br><b>prior</b> 10:4<br>48:15 94:12<br>95:9,14 96:15<br><b>priority</b> 7:10<br><b>probably</b> 3:15<br>5:4,10 24:1<br>64:4 66:15<br>88:8 89:1<br><b>problem</b><br>118:15<br><b>proceeding</b><br>80:3<br><b>process</b> 5:18,20<br><b>processing</b><br>33:18 34:7,10<br>46:5 47:7<br>48:18 49:16,17 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 49:20,21 50:2<br>50:7 61:19<br>62:13 67:16<br>72:3 73:2,5,5<br>73:12 75:17<br>76:9 78:10,18<br>81:6,8,10,15<br>82:10 100:6,11<br>104:6 106:16<br>107:2 110:20<br>113:9 114:4<br><b>processor</b> 53:4<br>103:1 104:2,12<br>105:6,19<br>106:13<br><b>produce</b> 50:13<br>50:13 52:7<br>63:19 66:13<br>69:9 73:9<br><b>professional</b><br>1:18<br><b>professor</b><br>117:13<br><b>proper</b> 69:14<br><b>properly</b><br>108:19<br><b>proposing</b><br>21:12<br><b>prosecution</b><br>22:3,10,13,16<br>23:4 24:10<br><b>provide</b> 4:6 6:1<br>18:16 50:9<br>59:5,18 73:10 | 78:20 79:1<br>80:2 81:17,20<br>82:13 96:3<br>101:20 102:21<br>103:11,14<br>106:8,12<br><b>provided</b> 10:15<br>24:5 34:7<br>79:11,15<br>106:15<br><b>provides</b> 19:5<br>32:12 78:22<br>113:22<br><b>providing</b> 78:1<br>78:6 84:20<br><b>public</b> 1:19<br>121:19<br><b>purported</b> 93:4<br><b>purpose</b> 13:10<br>19:18 69:6<br><b>put</b> 39:18 69:16<br>98:14 109:2,2<br><b>q</b><br><b>question</b> 7:7<br>10:20 27:13<br>28:3 53:10<br>62:10 75:10<br>81:2 91:8,10<br>91:13 95:10<br>97:16 101:21<br>102:2,22 104:1<br>106:9,12 108:2<br>111:8 115:6,9 | <b>questions</b><br>114:16,19<br>115:7 118:11<br>119:6<br><b>quick</b> 64:7<br><b>quite</b> 3:9 93:16<br><b>quote</b> 25:18,19<br>38:18,18 45:5<br>45:9,9,11,13,14<br>45:16,17,18<br>53:4,6 107:19<br><b>quoted</b> 35:4<br><b>r</b><br><b>r</b> 2:9,14 3:1<br>9:13 113:3<br><b>ramifications</b><br>44:6<br><b>range</b> 19:16,19<br>20:11,14 21:6<br>39:11 40:12<br>41:15 43:11<br>68:20<br><b>rather</b> 22:2<br>38:19 64:19<br><b>read</b> 4:16 11:20<br>16:8 18:6 20:2<br>21:16,18,19<br>22:1,2,8 25:14<br>28:16 29:2<br>30:6 31:16<br>32:2,5 35:13<br>36:8 38:10,11<br>39:6 40:6,8 | 41:6 43:10,18<br>44:19 45:2<br>49:3,6,14<br>52:17 53:14,16<br>54:8 60:6,9<br>62:1,18 67:1<br>79:6,21,22,22<br>80:6 85:5<br>92:19 93:1<br>95:7 100:19,19<br>105:2 112:3<br><b>reading</b> 12:22<br>13:2,16 18:3,5<br>19:9 22:11<br>25:17 26:10<br>27:14 42:15<br>44:7 63:10,10<br>63:11 70:1<br>72:12 75:4<br>79:20<br><b>reads</b> 38:15<br>41:13 52:21<br>114:8,9<br><b>really</b> 64:18<br>65:2 87:2 90:9<br><b>realtime</b> 1:18<br><b>reason</b> 4:5,9<br><b>reasons</b> 4:11,11<br><b>recall</b> 23:22<br>24:2 107:11<br>116:7<br><b>receive</b> 6:18<br><b>received</b> 50:9<br>68:10,16 69:3 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| 81:17<br><b>recent</b> 3:16<br><b>recently</b> 116:8<br><b>recess</b> 36:2<br>56:2 97:8<br>114:13 119:3<br><b>recite</b> 47:15<br><b>recited</b> 48:2<br>77:9<br><b>recites</b> 47:19<br><b>recognize</b> 19:6<br><b>record</b> 11:21<br>26:20 36:1<br>67:2 89:12<br>114:12 121:9<br><b>red</b> 9:15 112:8<br><b>redirect</b> 114:18<br><b>reduce</b> 73:15<br><b>reduced</b> 121:8<br><b>refer</b> 17:17<br>38:7 82:16<br>84:7<br><b>reference</b> 95:9<br>95:14<br><b>referred</b> 11:11<br>15:9 60:22<br>101:5,13<br>107:18 120:2<br><b>referring</b> 17:5<br>26:20 71:4,6<br>87:18 88:4<br>92:7<br><b>refers</b> 43:10,13 | <b>regarding</b> 38:3<br>93:18 97:12<br><b>regards</b> 22:13<br>37:21 98:17<br>99:5,12<br><b>registered</b> 1:16<br>1:17<br><b>relate</b> 117:21<br><b>related</b> 22:15<br>36:16 37:6<br>99:13 115:7<br>121:10<br><b>relative</b> 67:22<br>68:2,8 70:13<br>105:11 121:13<br><b>relatively</b> 68:19<br><b>relevant</b> 24:3,6<br><b>rely</b> 36:15<br><b>remember</b> 5:2<br>5:8,11,13<br>75:14 115:22<br><b>reminder</b> 4:13<br><b>remote</b> 1:15 2:2<br><b>repeat</b> 45:6<br>62:12 115:18<br><b>repeated</b> 13:3<br><b>replaced</b><br>115:19<br><b>report</b> 5:15,19<br>6:7,11,17<br><b>reporter</b> 1:16<br>1:17,18 4:14<br><b>require</b> 27:21<br>45:19 46:15 | 47:4 48:6 53:8<br>53:11 55:2<br>58:3,13 59:4,6<br>59:16 60:4<br>61:15 62:7<br>85:13,20 92:9<br>95:18 97:13<br>101:22 104:11<br>105:5,17<br><b>required</b> 55:4,7<br>65:7 107:1<br><b>requirement</b><br>55:9 69:21<br>95:8<br><b>requirements</b><br>61:16<br><b>requires</b> 33:2<br>38:16 42:12,22<br>44:3 49:12<br>50:16 51:10<br>53:21 58:15<br>60:15 61:19<br>70:21 72:17<br>73:18,21 75:7<br>75:20 77:9,22<br>78:6 80:10,20<br>82:1,21 86:21<br>91:3,17 92:13<br>95:5 99:16,19<br>99:21 102:2<br>103:1 104:2<br>105:19 106:13<br><b>resolution</b> 8:2,2<br>9:8 | <b>respect</b> 95:13<br><b>respectively</b><br>112:13 113:15<br><b>response</b> 120:8<br><b>rest</b> 25:1<br><b>restoration</b> 9:8<br><b>result</b> 49:2<br><b>resulted</b> 51:2<br><b>review</b> 6:4<br>23:19 24:3<br>118:13<br><b>reviewed</b> 6:6<br><b>rgb</b> 9:12 114:2<br><b>right</b> 3:10 5:16<br>17:7 23:12,12<br>24:7,15 26:15<br>27:12 41:13<br>64:11 65:8<br>69:19,22 71:10<br>77:11 88:17<br>95:15 99:6,20<br>102:17 104:12<br>112:15 114:21<br>115:1 118:19<br>118:21<br><b>rmr</b> 121:19<br><b>roughly</b> 67:15<br><b>rpr</b> 121:19<br><b>rsa</b> 121:19<br><b>rules</b> 4:1 |                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>s</b>           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>s</b> 3:1 120:1 |

|                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>saber</b> 1:14 3:2<br>3:9 57:3<br>115:10 120:7<br>120:16                                                                                                                                                                                                                                           | 40:17,21,21,22<br>40:22 41:21<br>42:4,6,7,12,22<br>43:16,17,17<br>44:3 45:13<br>94:1,5                                                                                                                                                                                                                                                                                                    | 35:18 37:12<br>48:13 62:21<br>63:15 71:4,6<br>71:10,14,16<br>93:1,3,7                                                                                                                                                                                                                                                                                                                                                                                      | 98:4 103:6<br>105:3 107:16<br>107:17                                                                                                                                                                                                                                                                                                                                                                   |
| <b>san</b> 2:5                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>segment</b> 8:9<br>9:15,16                                                                                                                                                                                                                                                                                                                                                                          |
| <b>saved</b> 88:8                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                           | <b>sections</b> 24:3                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>segmentation</b>                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>saying</b> 20:21<br>35:9 64:22<br>92:8                                                                                                                                                                                                                                                             | <b>scenery</b> 53:19<br>94:6                                                                                                                                                                                                                                                                                                                                                              | 37:5                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 8:8,12 9:5,6,10<br>9:17                                                                                                                                                                                                                                                                                                                                                                                |
| <b>says</b> 12:21 19:3<br>26:16 27:3<br>28:14 29:8,10<br>33:5 34:9,19<br>42:20 49:16<br>51:12,13 55:9<br>58:8,10 60:20<br>65:22 67:16,22<br>68:4,6 71:2,21<br>72:2 73:4 74:2<br>78:2 80:7 82:8<br>83:10 84:11<br>85:16 89:12<br>92:13 95:4<br>99:14 102:15<br>107:18 112:16<br>112:21 113:14<br>114:6 | <b>scenes</b> 38:3<br>40:2 41:14<br>43:20                                                                                                                                                                                                                                                                                                                                                 | <b>see</b> 4:13 7:2,4,5<br>7:20 8:17<br>12:17,19,21<br>16:6 19:2,13<br>20:10,13,18<br>21:7 23:8,14<br>27:3 28:13<br>29:7,10 30:16<br>31:18 32:14,19<br>34:5,6,9,18,19<br>37:3,9,13,20<br>39:18,21 43:10<br>43:12 45:22<br>46:1 48:1<br>49:16 51:13,20<br>54:13 55:9<br>57:12 58:1,7,8<br>58:10,17 60:20<br>61:13 65:14,21<br>67:4,14,16,21<br>68:4,6 71:1,3<br>71:20 72:2<br>73:1,4 74:2<br>78:2 79:5 81:3<br>83:9 87:20<br>92:3,13 93:19<br>95:6,21 96:15 | <b>sense</b> 15:2 42:4<br>68:15 69:19<br>77:21 81:5                                                                                                                                                                                                                                                                                                                                                    |
| <b>scene</b> 21:9<br>35:15 36:9,12<br>36:16 37:7,15<br>37:15,22 38:16<br>39:10,10,15,15<br>39:18 40:2,11<br>40:11,16,17,17                                                                                                                                                                            | <b>scope</b> 10:7<br>27:11 28:5<br>79:13 84:9<br>112:18,20<br>113:19 114:9<br><b>scratch</b> 40:7<br>45:6 52:15<br>71:12 73:19<br>90:22<br><b>search</b> 64:7<br>115:15 116:4<br><b>second</b> 10:21<br>31:18 38:10<br>42:19 44:14,18<br>52:16,17,20<br>69:19 73:1<br>83:10,11,13,14<br>83:21 84:13,15<br>84:16 86:18<br><b>section</b> 12:17<br>20:5 22:12<br>24:9,15,16,18<br>25:6 34:8 |                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>sensor</b> 20:14<br>25:18 27:11,16<br>27:21 28:5,8<br>28:11,12,15,22<br>29:18 30:2,8,8<br>30:12,16,19,20<br>30:20 31:9<br>32:9 33:2,6,7,8<br>33:8,13,13,21<br>33:22 34:1,3<br>34:12 35:7<br>45:12,16 46:7<br>46:9,20 47:3,9<br>47:20 48:20,21<br>49:13 50:17<br>51:11,21 54:15<br>55:10 57:22<br>58:3,6,12,16<br>59:2,7,14,21<br>60:9,15 61:4,5<br>61:21 62:14,16<br>64:15,16 65:18<br>66:8,10 69:7 |

|                 |                        |                        |                        |
|-----------------|------------------------|------------------------|------------------------|
| 69:18 70:7,8,9  | <b>sensors</b> 28:13   | 51:10 53:4             | <b>show</b> 111:19     |
| 70:11 71:9,20   | 34:12 46:2             | 67:17,19 79:11         | <b>showing</b> 94:15   |
| 72:4,6 73:14    | 51:20 52:2             | 80:11 85:9,16          | <b>shutter</b> 19:21   |
| 74:6,8,18,21,22 | 58:11,12 69:5          | 85:17 86:1,3,5         | 39:11 40:13            |
| 76:3,12,15,19   | 69:10,19 70:12         | 86:6,10,13,21          | 45:10,18 60:22         |
| 76:20,21,22     | 70:18 72:6             | 87:4                   | 64:15 65:20            |
| 77:9,15,18      | 75:16 76:2,4,7         | <b>sequence</b> 38:16  | 66:6 74:20             |
| 78:11 80:16     | 77:3 78:9,19           | 42:12 43:1             | 76:19 89:2             |
| 81:6 82:9       | 82:10 84:3             | <b>session</b> 57:1    | 90:11 93:22            |
| 83:10,11,13,14  | 89:6 98:14             | <b>set</b> 21:22 83:15 | 96:4 98:5              |
| 83:16 84:14,15  | 100:3,3,5,11           | 83:19 86:14,15         | 100:16 101:5           |
| 84:16,17,18,19  | 106:5 112:7,9          | 86:17,18 87:7          | 101:13,22              |
| 86:2,4 87:6     | 112:21,22              | 87:9 94:11             | 102:6,10 107:6         |
| 89:2,5,8 90:4   | 113:1,3,7,22           | <b>setting</b> 60:1    | 107:10,15,19           |
| 90:12 92:5,9    | 114:1                  | <b>seven</b> 25:9,10   | 108:3,8,15,21          |
| 95:4 96:2,4,8   | <b>sent</b> 11:7,16    | <b>several</b> 37:8    | 109:3,10,17,18         |
| 96:21 98:2,6,8  | <b>sentence</b> 12:20  | 38:2,6                 | 109:19,20,20           |
| 98:9 99:15,19   | 16:22 25:14,16         | <b>shi</b> 2:4 3:8     | 109:22 110:1,3         |
| 100:8,14,16,18  | 29:7,9 30:17           | 10:17 11:12            | 110:16 111:1,2         |
| 101:4,22 102:6  | 30:22 31:18            | 15:13 35:17            | 111:9,13,14            |
| 102:8,10,18,20  | 35:13 36:8             | 36:1,4 55:16           | 116:13,15,16           |
| 103:4,7,16,18   | 38:10,12,15            | 55:19 57:2             | 116:20,21              |
| 103:22 104:7,9  | 39:6 40:8              | 79:18 89:12,15         | 117:6,14,18            |
| 104:15,17,20    | 42:15,19 45:3          | 91:15 96:22            | 118:3                  |
| 104:22 105:8    | 45:4 48:2              | 97:5,10 108:13         | <b>shutters</b> 116:9  |
| 105:11 106:18   | 52:17,20 65:21         | 111:6 114:11           | 116:10                 |
| 106:19,22       | 67:21 68:3             | 114:15 115:3           | <b>sic</b> 36:16 88:15 |
| 107:4,8 108:1   | 71:22 112:3            | 118:12,19              | 106:9                  |
| 109:11 112:7    | <b>separate</b> 30:10  | 119:1,5 120:16         | <b>side</b> 5:10       |
| 113:11,12       | 68:13 70:3,18          | <b>shorthand</b> 1:17  | <b>sign</b> 6:4        |
| 114:3 117:10    | 70:18 86:16            | 121:7                  | <b>signal</b> 29:12    |
| 117:11,12       | <b>separately</b> 9:16 | <b>shot</b> 39:19,20   | 45:12 61:1             |
| 118:3,4,8,9     | 34:2 48:3,6,22         | <b>shots</b> 39:20     | 67:10 101:8,15         |
|                 | 49:12 50:16            | 40:3,4                 | 102:15 107:20          |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 117:7<br><b>signature</b> 119:7<br>121:18<br><b>similar</b> 51:13<br>72:21<br><b>similarly</b> 29:22<br><b>simultaneous</b><br>68:14<br><b>simultaneously</b><br>48:3,7 49:2,12<br>50:16,21 51:10<br>53:1,4 67:17<br>67:20 68:11,17<br>69:3 70:5<br>79:11 80:11<br>85:13,17<br><b>single</b> 8:11 9:5<br>9:17 13:5 14:3<br>14:5,6,6,7 17:8<br>17:18 19:8,8<br>21:5,5 53:6<br>66:13<br><b>sitting</b> 116:16<br><b>slowly</b> 4:14,16<br>42:8<br><b>solid</b> 94:8<br><b>sorry</b> 8:22<br>26:19 36:22<br>45:6 57:11<br>71:11,12 94:7<br><b>south</b> 2:15<br><b>space</b> 38:18<br>42:14 43:2,5<br>44:4 | <b>span</b> 41:15<br><b>spatial</b> 44:16<br><b>speak</b> 4:14 19:8<br>40:1 49:22<br>78:22<br><b>speaking</b> 54:11<br>82:17 88:3<br>96:19 98:3<br>108:18 109:21<br><b>specific</b> 18:16<br>82:20 90:22<br>95:14 118:7<br><b>specification</b><br>13:2,16,22<br>18:3,12 22:3,6<br>22:9 25:3 26:3<br>26:9,11 28:17<br>30:6 32:4,6<br>43:19 46:22<br>49:3 53:17<br>54:8 60:10,18<br>61:6,22 62:1<br>62:19,19 63:11<br>70:2 72:13<br>75:5 80:1,17<br>100:19,20<br>101:1 105:3<br>107:17 110:5,6<br><b>specification's</b><br>25:20,21 26:5<br>27:17<br><b>specified</b> 95:12<br><b>stage</b> 34:17 | <b>standing</b> 42:1<br><b>standpoint</b><br>65:16 74:3<br>95:22<br><b>start</b> 37:13<br>39:7 41:10<br>45:6 64:16<br>66:8,11 70:9,9<br>70:12 82:9<br>93:20 102:12<br>109:4,8,8,13,15<br>110:10,11<br>112:4 116:17<br>118:2,4,8<br><b>starting</b> 16:19<br>17:12 23:4<br>37:9 93:11<br>101:6<br><b>starts</b> 16:22<br>17:16 38:12<br>49:15 52:18<br>57:21 66:21<br>73:2<br><b>state</b> 20:3,14<br>74:1 92:1<br>93:21 94:8<br>104:13 106:6,7<br><b>stated</b> 90:9,13<br>92:21,22<br>104:18<br><b>statement</b> 13:3<br>16:17 31:16<br>35:1 40:5 | <b>statements</b><br>35:4<br><b>states</b> 1:1 25:16<br>33:4 81:5 82:4<br>85:8 87:4<br>93:20 98:1<br>103:21 104:19<br>107:2 120:4<br><b>stating</b> 65:15<br>72:14 96:10<br><b>stenographic...</b><br>1:15<br><b>step</b> 37:10 71:5<br><b>stop</b> 64:16 66:8<br>66:11 82:9<br>102:13 109:9<br>109:14,15<br>110:13 118:8<br><b>stopping</b><br>110:19<br><b>street</b> 2:10,15<br><b>studied</b> 32:3,3<br><b>study</b> 5:21<br><b>substantial</b><br>115:22<br><b>substantially</b><br>53:1<br><b>subsystem</b><br>26:17 27:5,8<br>29:6,8,11<br><b>suggested</b> 13:1<br><b>suite</b> 2:5,10,15<br><b>super</b> 9:8 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>support</b> 120:7<br><b>sure</b> 13:21<br>21:21 35:22<br>85:8 88:21<br>91:20 92:1<br>97:2,11<br><b>surrounding</b><br>8:3<br><b>switch</b> 45:11,14<br>45:15,20 46:16<br>47:5,16,17<br>61:3,3 67:11<br>101:9,16<br>102:17,17<br>107:22,22<br>117:8,9<br><b>sworn</b> 3:5<br>121:6<br><b>synchronizati...</b><br>64:17 66:12,20<br>68:15,18 69:2<br>70:8,12 74:22<br>76:21 77:2,19<br>89:5 90:8,15<br>96:6 98:12<br>103:2,13,14,18<br>104:3,12,17<br>105:6,17,20<br>106:4,14<br><b>synchronize</b><br>82:12 89:7<br>98:10<br><b>synchronized</b><br>69:17 | <b>system</b> 50:7<br>52:22 53:9,12<br>65:15 81:3<br>83:2 95:22<br>96:2,8,21<br><b>systems</b> 1:18<br>19:13 29:12<br>74:3<br><br><b>t</b><br><br><b>t</b> 120:1<br><b>take</b> 16:5 35:22<br>37:10 55:12<br>96:22 98:12<br>114:11,19<br>118:12<br><b>taken</b> 1:15 3:10<br>19:3 21:3 36:3<br>56:2 92:10<br>97:9 114:14<br>119:4 121:3,7<br>121:12<br><b>talk</b> 95:1<br><b>talked</b> 12:4<br>58:5 67:5<br><b>talking</b> 7:20<br>12:17 14:1<br>17:3,13 24:13<br>30:16 37:14,16<br>37:22 43:7,19<br>44:8,20 48:15<br>53:18 68:17<br>71:14 72:1<br>74:5 76:11 | 77:6 78:15<br>90:3,17,18<br>92:3,11 93:11<br>93:16 94:3<br>95:9 96:14<br>97:21 99:8<br>102:3 104:4,5<br>110:5 111:19<br>113:11,21<br>116:22<br><b>talks</b> 24:9 31:7<br>67:8,11 76:2,7<br>76:13 79:2<br>100:21 101:2<br>101:11 103:3<br>113:9<br><b>taught</b> 116:10<br>116:13<br><b>teaches</b> 52:21<br><b>technical</b> 5:15<br>5:19 14:11,15<br>14:19,21 15:19<br>15:21 16:18<br>37:3<br><b>techniques</b> 8:6<br><b>technology</b> 7:7<br>7:8<br><b>tell</b> 8:18 66:10<br><b>tells</b> 95:21 99:2<br><b>temporal</b> 21:9<br><b>term</b> 27:20<br>28:5,8 32:8<br>33:2,12 35:6<br>77:8 108:18 | <b>terminology</b><br>14:14<br><b>terms</b> 24:14,19<br>25:1,5<br><b>tesla</b> 1:4<br><b>testified</b> 3:5<br><b>testimony</b> 4:7<br>121:4,6,9<br><b>texas</b> 2:6<br><b>thank</b> 6:15 27:1<br>31:15 55:19,21<br>55:22 115:13<br>116:2 119:2,6<br><b>theiss</b> 2:14 6:12<br>6:14 10:7<br>55:15,22 79:13<br>91:5 108:10<br>111:3 114:17<br>115:2,5 118:10<br>118:14 120:17<br><b>thing</b> 20:2,20<br>34:22 65:14<br>73:12<br><b>things</b> 8:19<br>40:19 72:9<br>97:11<br><b>think</b> 13:19<br>18:11,13,14<br>22:17 32:22<br>35:8,18 48:9<br>49:5 50:18<br>58:5 62:9 64:5<br>64:18 65:3,10<br>66:15,16 68:22 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 69:4 74:1 75:9<br>80:3,13,22<br>82:3 85:15<br>87:1,11 88:22<br>91:9,22 99:22<br>100:20 101:6<br>102:1 106:15<br>107:12<br><b>third</b> 90:14<br><b>three</b> 59:11<br>61:11,15 62:7<br>63:17,20 64:20<br>66:3 70:22<br>72:17 73:18,21<br>74:12,13 75:15<br>75:18 76:16<br>77:10 80:21<br>82:16,21 87:17<br>87:19 88:1<br>91:3 92:9,13<br>95:5,13,18<br>96:11,13 97:13<br>98:3,13 99:16<br>112:7,11 113:3<br>113:17<br><b>ties</b> 45:8<br><b>time</b> 4:15,20<br>7:9,15 13:4<br>14:2 17:11<br>19:22 28:14<br>29:12 30:19<br>31:3 32:9,11<br>32:15,20,20,22<br>33:6,12,14,20 | 34:11,21 35:6<br>37:21 38:17<br>39:12 40:14<br>42:13 43:2,5<br>44:4,13,17<br>45:9,11 46:6,9<br>46:11,18,20,21<br>47:3,9,20 48:4<br>48:7,19,21<br>49:13 50:1,3,5<br>50:11,17,20<br>51:11,14,17,22<br>52:4,10 53:3,5<br>58:16 59:1,7<br>59:13,21 60:8<br>60:20,22 61:1<br>61:20 62:2,3<br>62:14,16,20,20<br>63:2,12,13<br>65:17 67:6,9<br>67:18 68:1,7,8<br>69:7 70:5 71:2<br>71:8,21 72:4,5<br>73:7,14 74:4,6<br>74:7,16,17<br>76:11,12,15<br>77:8,15 78:11<br>79:8,12 80:8<br>80:11,14 81:11<br>81:14,19 82:6<br>83:4,5,11,12,14<br>83:16 84:1,12<br>84:14,16 85:1<br>92:4 94:1 96:1 | 96:7,20 98:2<br>100:7,13,18,22<br>101:3,4,7,12,14<br>102:3,4,7,15<br>103:4,7,16,21<br>104:7,8,20,21<br>105:8,10<br>106:17,19,22<br>107:4,6,8,18,20<br>109:6,9,15<br>110:8,13 112:9<br>112:13 113:7<br>113:11,12<br>114:5,6 117:6<br>117:12,15,17<br>117:22 118:1,5<br>118:6,7,17<br><b>times</b> 3:13,15<br>13:7 19:4,14<br>20:15,16,19,19<br>20:21,22 21:4<br>70:13 80:14<br>97:16 99:22<br>106:4 107:12<br><b>title</b> 71:9,15<br><b>today</b> 4:3,7,10<br>6:19 24:13<br>107:13<br><b>todd</b> 107:3<br><b>together</b> 13:8<br>14:5,13 20:1<br>34:16<br><b>top</b> 5:3,8 17:10<br>23:20,22 24:2 | 38:22 40:1<br>66:22 67:4,14<br>67:15 115:22<br><b>trademark</b> 1:1<br><b>tree</b> 23:13,21<br><b>trial</b> 1:2<br><b>trouble</b> 88:8<br><b>true</b> 121:9<br><b>truthful</b> 4:6<br><b>try</b> 3:22 9:16<br><b>trying</b> 66:9<br>98:16<br><b>turn</b> 102:12,12<br><b>twice</b> 77:13<br><b>two</b> 14:8 66:1<br>69:6 94:12<br>110:1<br><b>type</b> 106:3<br><b>typewriting</b><br>121:8<br><b>typical</b> 41:11<br>41:14<br><b>typically</b> 5:21<br>10:9 44:18<br>116:14<br><b>typo</b> 64:5<br><b>typographical</b><br>115:11 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>u</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>under</b> 4:2 13:4<br>13:6 14:1<br>21:21 25:17<br>26:18 27:5,8                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27:15 28:5<br>29:6 34:20<br>35:1 41:19<br>53:2 71:16<br>93:6<br><b>underlying</b><br>34:8 35:1<br>114:2<br><b>understand</b> 4:2<br>21:21 27:13<br>28:2,3 30:7<br>44:8 53:17<br>70:2 91:7,10<br>91:13 92:19<br>95:10 108:16<br>111:8<br><b>understanding</b><br>7:14 13:13,15<br>17:21 18:2,7,9<br>22:7 26:12<br>28:18 31:2<br>36:11 37:3<br>54:9 60:11<br>62:4 63:1,16<br>84:9 114:2<br><b>understood</b> 7:8<br>31:22 33:11<br>43:6,9,22<br>44:19 90:4<br>111:1<br><b>undesirable</b><br>21:8<br><b>united</b> 1:1<br>120:4 | <b>unquote</b> 107:19<br><b>upload</b> 95:1<br><b>uploaded</b> 57:14<br><b>usage</b> 30:18<br>31:17,20 32:8<br>33:11 35:5<br>37:1 77:7<br><b>use</b> 6:19 12:13<br>19:14 54:5<br>59:11 64:2<br>86:10<br><b>used</b> 12:4 13:12<br>14:14 31:21<br>39:12 40:13<br><b>uses</b> 28:10<br><b>using</b> 10:5,18<br>11:18,22 13:11<br>20:15 28:12<br>33:14<br><b>usually</b> 4:19<br>40:19 43:15<br>44:14<br><b>utilize</b> 28:7<br>60:1<br><b>v</b><br><b>v</b> 1:6 24:9<br><b>value</b> 51:4<br><b>values</b> 112:11<br><b>varied</b> 112:10<br>113:8,13 114:7<br><b>varying</b> 42:8<br><b>ventures</b> 1:7<br>3:19 | <b>versus</b> 21:22<br>37:16 43:13,16<br>58:22 60:2<br>83:2 84:22<br>99:2<br><b>video</b> 37:16<br>39:22 43:7,8<br>43:20,21 44:12<br>44:13 94:6<br><b>videoconfere...</b><br>1:15 2:2<br><b>videos</b> 44:9<br><b>view</b> 53:1,9,13<br>53:15,19,22<br>54:6,10,16<br>55:3,11<br><b>vii</b> 24:15,18<br>25:6<br><b>vklaw.com</b><br>2:16<br><b>volpe</b> 2:14<br><b>w</b><br><b>w</b> 2:4<br><b>wait</b> 71:11<br><b>waived</b> 119:8<br><b>walking</b> 42:2<br><b>want</b> 46:14<br>63:8 70:8 74:5<br>76:22 88:12<br>91:18,20 98:4<br>111:15,18,20<br>114:19,20 | <b>wanted</b> 95:22<br><b>washington</b><br>2:10<br><b>way</b> 14:12,14<br>14:19 92:22<br><b>ways</b> 14:15,21<br>15:19,21 16:18<br><b>we've</b> 50:18<br>58:5 60:6<br>61:18 72:1<br>78:14 80:13<br>81:14 93:15<br>94:2 99:21<br>104:5<br><b>went</b> 18:13<br>48:9 100:21<br>101:7<br><b>wide</b> 8:13<br>19:15,19 21:6<br><b>window</b> 69:13<br>70:6<br><b>windows</b> 66:1<br>74:11<br><b>wiring</b> 89:8<br>90:4<br><b>wise</b> 83:18<br><b>wish</b> 14:7<br><b>witness</b> 3:3<br>10:8 15:10<br>55:17,21 79:14<br>91:7 97:2,7<br>108:11 111:5<br>114:22 118:11<br>118:21 119:2 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                  |                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 120:15 121:4,6<br>121:10<br><b>word</b> 8:13 12:4<br>12:13 28:11<br>36:12 37:6<br>38:13 41:11<br>43:12 44:5<br>47:17 48:2<br>54:5 63:7<br>64:12,12<br><b>words</b> 53:15<br>63:21<br><b>wordsmithing</b><br>87:2<br><b>work</b> 4:18 5:6<br>6:10 55:13<br>106:1,1<br><b>worked</b> 5:1,12<br><b>works</b> 4:19<br>5:20 55:14,19<br>116:13<br><b>written</b> 18:6 | <b>yep</b> 15:5,10<br>16:16 21:17<br>49:10<br><b>yield</b> 9:17<br><b>yu</b> 93:4,12 94:3 |
|                                                                                                                                                                                                                                                                                                                                                                  | <b>z</b>                                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                  | <b>zero</b> 25:9,10                                                                       |
| <b>x</b>                                                                                                                                                                                                                                                                                                                                                         |                                                                                           |
| <b>x</b> 1:3,9 120:1<br>120:14                                                                                                                                                                                                                                                                                                                                   |                                                                                           |
| <b>y</b>                                                                                                                                                                                                                                                                                                                                                         |                                                                                           |
| <b>yeah</b> 12:6<br>35:20 41:11<br>57:9,9,9 88:22<br>108:6 115:3<br>118:19<br><b>years</b> 5:12                                                                                                                                                                                                                                                                  |                                                                                           |

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

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