

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

LZLABS GMBH,)
)
)
Petitioner,)
) IPR2023-00274
v.) U.S. Patent No. 8,713,289
)
)
INTERNATIONAL)
BUSINESS MACHINES)
CORPORATION,)
)
Patent Owner.)
)
)

DEPOSITION OF: IAN JESTICE

DATE: Thursday, September 13, 2023

TIME: 9:06 a.m. - 2:19 p.m.

PLACE: Zoom Virtual

STENOGRAPHICALLY

REPORTED BY: Donna Dratwa, RMR, CRR

A P P E A R A N C E S

APPEARING ON BEHALF OF THE PETITIONER

JOSEPH D. GRAY, ESQUIRE
OF: Slayden Grubert Beard PLLC
401 Congress Avenue
Suite 1650
Austin, Texas 78701
512-402-3550
jgray@sgbfirm.com

CHRIS V. RYAN, ESQUIRE
OF: RyanIPLaw, PC
1508 Bay Hill Drive
Austin, Texas 78701
45chris.ryan@ryaniplaw.com

TECUAN FLORES, ESQUIRE
OF: Slayden Grubert Beard PLLC
401 Congress Avenue
Suite 1650
Austin, Texas 78701
512-402-3550
tflores@sgbfirm.com

APPEARING ON BEHALF OF THE PATENT OWNER

THEODOROS KONSTANTAKOPOULOS, ESQUIRE
OF: Desmarais LLP
230 Park th Avenue
New York, New York 10169
212-351-3400
tkonstantakopoulos@desmaraisllp.com

I N D E X

EXAMINATION	PAGE
DIRECT EXAMINATION	5
BY MR. KONSTANTAKOPOULOS	
CROSS-EXAMINATION	112
BY MR. GRAY	
REDIRECT EXAMINATION	127
BY MR. KONSTANTAKOPOULOS	
RECROSS-EXAMINATION	129
BY MR. GRAY	
CERTIFICATE OF DEPOSITION TRANSCRIPT	131

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

S T I P U L A T I O N S

It is hereby stipulated and
agreed by and between the counsel for the
respective parties and the deponent that the
reading and signing of the deposition transcript is
not waived.

P R O C E E D I N G S

THE COURT REPORTER: Do you swear or affirm that the testimony you are about to give will be the truth, the whole truth, and nothing but the truth?

THE WITNESS: I do.

I A N J E S T I C E,

having first been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KONSTANTAKOPOULOS:

Q. Good morning, Mr. Jestice. Can you please state and spell your name for the record?

A. Yes. My name is Ian Jestice. That's I-A-N. Last name is J-E-S-T-I-C-E.

Q. And where do you live?

A. I live in Naples, Florida.

Q. Are you located there right now?

A. No. I'm in Austin, Texas right now.

Q. Are you in counsel's office at this point?

A. Yes.

Q. Okay.

1 Do you know the address?

2 A. No.

3 Q. Okay. This is fine.

4 Although you're taking this
5 deposition remotely, you understand that you are
6 under oath, correct?

7 A. Yes, that's correct.

8 Q. And do you understand that your oath
9 requires you to tell the truth as if you are
10 testifying in front of a court or the patent
11 office tribunal?

12 A. Yes, I understand that.

13 Q. Is there any reason why you cannot
14 provide completely accurate and truthful
15 testimony in response to my questions today?

16 A. No.

17 Q. You have been deposed before,
18 correct?

19 A. That's correct.

20 Q. Approximately how many times?

21 A. I believe it's 18.

22 Q. Was any of those times a remote
23 deposition?

24 A. No.

25 Q. So let me explain some rules,

1 specifically for this remote deposition. Even
2 though you do not see a court reporter, there is
3 one, and will try to transcribe this deposition.
4 And please to have as much clear a transcript as
5 possible, please wait until I finish my question
6 before you start answering. And I will also try
7 to do the same.

8 We will take breaks during this
9 deposition. If at any point you want a break,
10 please let me know and we will take one. All I ask
11 that there is no questions pending.

12 Is that okay?

13 A. That's fine.

14 Q. Have you been deposed in an IPR
15 proceeding before?

16 A. I believe I have. I'm not absolutely
17 certain. To be honest, I don't remember which
18 ones went to deposition.

19 Q. So let me explain that because this
20 deposition is for an IPR proceeding, this means
21 that during the breaks, you cannot discuss with
22 counsel about the substance of your testimony.

23 Are you aware of this rule?

24 A. Yes.

25 Q. Okay.

1 And if you discuss with counsel
2 during breaks, I'm entitled to know what you
3 discussed; is that clear?

4 A. Yes.

5 Q. Okay.

6 And LzLabs counsel may object to some
7 of the questions. Unless you are instructed not
8 to answer you will have to answer my question,
9 okay?

10 A. Yes.

11 Q. Now, you stated that you are at
12 counsel's office, correct?

13 A. That's correct.

14 Q. Who is in the room with you today?

15 A. Chris Ryan. Joseph Gray.

16 Q. Anyone else?

17 A. No.

18 Q. Do you have any communication devices
19 in the room with you other than the computer
20 that you're using for this Zoom call?

21 A. No.

22 Q. Nothing like a laptop, tablet or cell
23 phone?

24 A. I'm using my laptop for the Zoom
25 call.

1 Q. Correct. Okay.

2 Do you have any printed documents
3 with you?

4 A. I'm using printed documents that have
5 just been provided to me.

6 Q. And what are they?

7 A. There's my declaration, the '289
8 patent, the Loderer patent, my CV, the Payne
9 document, the '980 patent, the '864 patent, a
10 printout from the IEEE conference, it's actually
11 Exhibit 1102, a new method of dispatching
12 weighting logical processes in a virtual
13 machine."

14 I have another one, which is Exhibit
15 1014 which is "computer architecture
16 implementation," Harvey Cragon. And this is
17 Exhibit 1018, ET01449 listing documents,
18 relevant to the subject application.

19 Q. Anything else?

20 A. That's it.

21 Q. So do you have Exhibit Share open on
22 your laptop?

23 A. No. I do on a separate laptop.

24 Q. No, I mean on the same laptop,
25 Exhibit Share is the platform that I was

1 planning to use to provide exhibits for the
2 deposition.

3 You can use the printed documents
4 but --

5 MR. GRAY: I'd like to interject
6 here. I don't think he's logged in. Do
7 you want me to do that real quick? We can
8 go off the record.

9 MR. KONSTANTAKOPOULOS: Yeah, please
10 do that, in case we have an exhibit that he
11 hasn't printed. Please go off the record,
12 yeah.

13 (Off the record.)

14 MR. GRAY: We are set up now.

15 BY MR. KONSTANTAKOPOULOS:

16 Q. Welcome back, Mr. Jestice.

17 Can you confirm that you have access to
18 Exhibit Share?

19 A. Yes, I do.

20 Q. And I have uploaded three premarked
21 Exhibits, Exhibit 1001, Exhibit 1002, and
22 Exhibit 1003.

23 Do you see them?

24 A. Yes.

25 Q. I understand you have copies of these

1 in front of you, so feel free to use either the
2 copies or the online version; is that okay?

3 A. Okay.

4 Q. All right.

5 Do you have any notes with you?

6 A. No.

7 Q. So you submitted a declaration in
8 support of LzLabs' IPR petition, challenging U.S.
9 Patent No. 8,713,289, correct?

10 A. That's correct.

11 Q. And if I refer to the patent as the
12 '289 Patent, would that be okay?

13 A. That would be fine.

14 Q. What did you do to prepare for this
15 deposition?

16 A. I have reread my declaration. I have
17 looked at the '289 Patent. I have looked again
18 at the Loderer patent. I have looked through
19 the file history of the '289 patent. And that's
20 about it.

21 Q. Did you also meet with counsel?

22 A. Yes.

23 Q. Who did you meet?

24 A. I met with Chris Ryan, Tecuan Flores
25 and Joseph Gray.

1 Q. How many times?

2 A. In preparation for the deposition we
3 met twice online, and the last two times in
4 Austin.

5 Q. Approximately for how many hours can
6 you estimate?

7 A. The preparation?

8 Q. Correct. Yes.

9 A. Two one-and-a-half hour sessions
10 online, and then two days, so 16 hours.

11 Q. And other than the counsel you
12 mentioned, you didn't meet anyone else in
13 preparation for this deposition?

14 A. No.

15 Q. Okay.

16 So I have uploaded on Exhibit Share
17 Exhibit 1003. Can you please confirm that
18 Exhibit 1003 is the declaration that's updated,
19 and feel free to use the printed version.

20 A. I'm having some problems downloading
21 that document. I'll try reloading. Okay. I've
22 got the first page.

23 Well, obviously I can't do an exact
24 compare, but it looks like the right document.

25 Q. Okay.

1 Do you see on each page at the bottom
2 there are two page numbers?

3 A. Yes. There's Exhibit page number,
4 and my page number.

5 Q. I can refer to your page number, if
6 that's okay with you?

7 A. My number, yeah, sure.

8 Q. Can you please turn to your
9 declaration on page 117.

10 A. Last page?

11 Q. Correct.

12 A. Okay, go ahead.

13 Q. Is this your signature?

14 A. Yes, it is.

15 Q. Did you sign this document?

16 A. Yes, I did.

17 Q. Do you remember approximately when
18 were you retained by LzLabs' counsel?

19 A. Actually, I don't.

20 Q. This document has a date of
21 11/28/2022.

22 Do you see that?

23 A. That's correct.

24 Q. Do you remember if you were retained
25 six months before this document date?

1 A. I was certainly retained before this
2 document date. I couldn't tell you -- I'd have
3 to go back to my records and let you know an
4 exact date.

5 Q. Okay. We can move on.

6 Did you write your declaration?

7 MR. GRAY: Objection, form.

8 A. I'm not quite certain what you mean
9 by -- I did not write it in its entirety.
10 BY MR. KONSTANTAKOPOULOS:

11 Q. Did you write portions of your
12 declaration?

13 A. Yes.

14 Q. Which portions of your declaration
15 did you write?

16 A. It was a collaborative effort between
17 myself and the lawyers. And going back now, I
18 couldn't tell you exactly which sentences I
19 wrote in their entirety or which sentences I
20 corrected or which sections that I wrote.

21 Clearly, the legal section is written
22 by the lawyers, and the personal is written by
23 me. And then the others were written jointly.

24 Q. I will restate my question. Did you
25 provide the first draft of your declaration?

1 A. No, I don't believe I did.

2 Q. Will you please turn to paragraph 14
3 of your declaration?

4 MR. GRAY: Did you say 1-4, 14? Or
5 4 --

6 MR. KONSTANTAKOPOULOS: 1-4, yes.
7 1-4.

8 BY MR. KONSTANTAKOPOULOS:

9 Q. It's on page 5 of your declaration.

10 A. Okay, I'm there.

11 Q. So paragraph 14 reads, "I have been
12 asked to review the '289 Patent and its
13 prosecution history, to provide an understanding
14 of the technology relevant to the challenged
15 patent, to review certain prior art
16 references..."

17 And then continues, correct?

18 A. Correct.

19 Q. So you were asked to review prior
20 references, correct?

21 A. Yes.

22 Q. Did you do any searching for prior
23 references yourself?

24 A. Yes.

25 Q. Do you remember which references did

1 you identify?

2 A. Kane, K-A-N-E.

3 Q. Anything else?

4 A. No.

5 Q. All of the prior art references
6 listed in your declaration were provided to you
7 by counsel, correct?

8 A. Can you tell me where they are
9 listed?

10 Q. Can you please turn to -- I will use
11 the exhibit page number this time. Exhibit Page
12 Number 6.

13 A. This is the list of exhibits?

14 Q. Right. From the list of exhibits on
15 pages 6 and 7, other than Exhibit 1009 which is
16 the Kane Exhibit, did you identify any exhibits?

17 A. That's different to your earlier
18 question. You're asking exhibits or prior art?

19 Q. Let's focus on the exhibits right
20 now.

21 A. Okay. So in the exhibits, obviously
22 the CV is mine. Kane, I already stated is one I
23 found. I'm not certain about 1025. I am
24 obviously very familiar with the 360 principle
25 of operations, but I don't know who found that

1 specific one.

2 Q. Did you read all the exhibits
3 identified on pages 6 and 7?

4 A. I have reviewed them, yes.

5 Q. If a document is not listed on pages
6 6 and 7, is it fair to assume that you did not
7 rely on it?

8 MR. GRAY: Objection, form.

9 A. Can you restate the question?

10 BY MR. KONSTANTAKOPOULOS:

11 Q. If a document is not listed on pages
12 6 and 5, is it fair to assume that you did not
13 rely on it?

14 A. I didn't -- yes, that's fair.

15 Q. Did you generate the drawings in your
16 declaration?

17 MR. GRAY: Objection, form.

18 A. The drawings in the declaration. Can
19 you point me to a drawing?

20 BY MR. KONSTANTAKOPOULOS:

21 Q. Yes. Let's go to page 17.

22 A. Which number are we using?

23 Q. Your declaration number that's on
24 paragraph 41.

25 A. No, I didn't generate that one.

1 Q. Did you do the annotations in the
2 drawings in your declaration?

3 A. The highlighting?

4 Q. Correct. And any kind of annotation.

5 A. I didn't do any of the highlighting.

6 Q. Do you remember how much time did you
7 spend working on your declaration?

8 A. I estimate on this particular case I
9 worked somewhere around 100 hours.

10 Q. Is it accurate to say that you have
11 made your declaration as complete as you could?

12 MR. GRAY: Objection, form.

13 A. I think that's fair.

14 BY MR. KONSTANTAKOPOULOS:

15 Q. You understand that it was important
16 that you include in your declaration all
17 opinions you intend to present in this case,
18 correct?

19 MR. GRAY: Objection, form.

20 A. That's correct.

21 BY MR. KONSTANTAKOPOULOS:

22 Q. Do you intend to make any changes to
23 the opinions you expressed in your declaration?

24 A. Well, if -- if the -- if there's
25 another declaration that has additional

1 information in there I have missed, then I think
2 I reserve the right to change my declaration.

3 Q. As you sit in this deposition right
4 now though, do you intend to make any changes to
5 the opinions you expressed in the declaration,
6 Exhibit 1003?

7 A. I have no reason to believe that
8 there's any information that would suggest that
9 I should change my declaration at this point.

10 Q. And at the time you signed your
11 declaration you included all the opinions that
12 you wanted to present in this IPR, correct?

13 A. At that time, yes.

14 Q. Do you understand it was important
15 that you include all support for the opinions
16 that you offered in your declaration?

17 A. Yes.

18 Q. So your declaration provides all of
19 the basis for your opinions, correct?

20 MR. GRAY: Objection, form.

21 BY MR. KONSTANTAKOPOULOS:

22 Q. Do you want me to repeat the
23 question?

24 A. I thought I answered. What was the
25 question again?

1 Q. So your declaration provides all the
2 basis for your opinions, correct?

3 MR. GRAY: Objection, form.

4 A. Yes.

5 BY MR. KONSTANTAKOPOULOS:

6 Q. Are there any opinions in your
7 declaration that are not yours?

8 A. No.

9 Q. Can you please turn to paragraphs 16
10 through 31 of your declaration?

11 A. Okay, I'm there.

12 Q. Paragraph 16 through 31 of your
13 declaration provides your understanding of the
14 legal standards that you applied in this
15 declaration, correct?

16 A. That's correct.

17 Q. You did not include the section about
18 anticipation, correct?

19 A. That's correct.

20 Q. Do you have an understanding of
21 anticipation in the context of patent law?

22 A. I have some understanding, yes.

23 Q. And I understand that you are not a
24 lawyer, but what is your understanding of
25 anticipation in the context of patent law?

1 MR. GRAY: Objection, scope.

2 A. So I think I would refer back to -- I
3 would like to refer back to my own declaration
4 where it explains where anticipation would
5 obviously be, anticipation, I believe. I did
6 not use the word anticipation in my declaration.
7 BY MR. KONSTANTAKOPOULOS:

8 Q. You did not offer any opinion that
9 any of the prior references anticipates any
10 challenge claim of the '289 Patent, correct?

11 A. That's correct.

12 Q. You did not offer any opinion that
13 any of the prior art references discloses each
14 and every feature of the challenged claims,
15 correct?

16 MR. GRAY: Objection, form.

17 A. I did not express that in my
18 declaration.

19 BY MR. KONSTANTAKOPOULOS:

20 Q. But you acknowledge that at least
21 something is missing from each prior art
22 reference with regard to the claim limitations,
23 correct?

24 A. That's not entirely correct, no.

25 Q. Is it your opinion that at least one

1 prior art reference discloses each and every
2 feature of at least one challenged claim?

3 A. Can you repeat that question.

4 Q. Is it your opinion that at least one
5 prior art reference discloses each and every
6 feature of at least one challenged claim?

7 A. I missed the last sentence there.
8 What claim?

9 Q. Challenged claim?

10 A. You say silence?

11 Q. No. Challenged claim. One of the
12 claims that you challenged in the word
13 challenged in the IPR.

14 A. You're saying challenged, right,
15 challenged claim?

16 Q. Correct.

17 A. I believe I just answered that.

18 Q. Well, let me give you the question
19 again because there was some issues with, I
20 guess, my accent.

21 Is it your opinion that at least one
22 prior art reference discloses each and every
23 feature of at least one challenged claim?

24 A. I thought that I answered that, that
25 there is nothing in my declaration that talks

1 about anticipation.

2 Q. Okay, because when I asked you that
3 you did not offer any opinion that any of the
4 prior art references discloses each and every
5 feature of the challenged claims, you said
6 that's not accurate. So that's why I was
7 confused.

8 A. I think if you -- if I look through
9 the prior art references, it is obvious that the
10 specific words that are missing are there.

11 Q. I am focusing on each prior art
12 reference individually. Do you have that in
13 mind?

14 A. Yes.

15 Q. You did not offer any opinion that
16 any of the prior art references individually
17 discloses each and every feature of at least one
18 challenge claim, correct?

19 A. I did not offer that opinion,
20 correct.

21 Q. You did not offer any opinion that
22 any claim limitation is inherently disclosed in
23 the prior references, correct?

24 A. I did not offer that opinion.

25 Q. Can you please turn to paragraph 90

1 of your declaration.

2 A. Yes, I am there.

3 Q. Can you turn to the third sentence of
4 paragraph 90.

5 A. Is that the one that's starting, "A
6 person of skill of the art would further
7 understand"? Is that the one you mean?

8 Q. That a MIPS processor does not
9 inherently contain the instructions described in
10 Loderer for emulating the condition codes, and
11 that it would be obvious that such software
12 instructions would be stored in a non-transitory
13 memory before they are loaded onto the processor
14 system M2."

15 Did I read that correctly?

16 A. Yes, that's correct.

17 Q. So what do you mean by the ellipse
18 processor does not inherently contain the
19 instructions?

20 A. That the computer -- a processor, an
21 actual processor, does not have the ability to
22 keep instructions, for example, in a computer
23 code program. As such, that software would have
24 to be loaded from memory before the processor
25 could execute it.

1 Q. I have uploaded on Exhibit Share
2 Exhibit 1002. This is your CV. Feel free to
3 use the version on Exhibit Share or your printed
4 version.

5 A. I will start with the printed
6 version.

7 Q. Okay.

8 A. I have it in front of me.

9 Q. Can you please turn to page 14, 1, 4.

10 A. Yes.

11 Q. Do you see the heading, education?

12 A. Yes.

13 Q. Under university, slash, college, you
14 write, "City & Guilds Institute of London."

15 Correct?

16 A. That's correct.

17 Q. How many years did you attend the
18 City & Guilds Institute of London?

19 A. Three.

20 Q. That number three?

21 A. Three years, yes.

22 Q. And you graduated in 1971, correct?

23 A. The City and Guilds Institute at that
24 time, there wasn't a concept of graduation.

25 It's the equivalent of a degree, not a degree.

1 Q. Did you take examinations to get into
2 the City and Guilds Institute of London?

3 A. To get into the City and Guilds
4 Institute of London or to complete?

5 Q. To get into?

6 A. Well, in order to get into the City
7 and Guilds Institute of London, there was no
8 entry exam, if that's what you're asking.

9 Q. I'm asking to understand the
10 admission process. I know it's been a few years
11 but can you briefly describe what the admission
12 process was?

13 A. So the City and Guilds Institute of
14 London is an organization that's been going, I
15 believe, since the 1800s. After the Second
16 World War, my understanding is the government of
17 the United Kingdom realized that there was a
18 deficit in technical education in the United
19 Kingdom.

20 And so the government, particularly
21 the post office which ran telecommunication,
22 adopted the City and Guilds Institute as their
23 education requirement. So if you worked for the
24 government, which I did, the government required
25 you to go to the City and Guilds Institute of

1 London to study telecommunications and computer
2 science. Because at that time there was very
3 little other choice.

4 In order to get the job, and therefore
5 entrance into the City and Guilds Institute, I
6 attended high school in the United Kingdom and got
7 the TCEs in maths and physics.

8 I think pretty much anyone can apply to
9 the City and Guilds Institute of London and take
10 classes at that time, if you chose to. But the
11 reality is it was primarily filled with post office
12 engineers, of which I was one.

13 Does that answer your question?

14 Q. Yes. Yes. Thank you.

15 And the City and Guilds Institute of
16 London is not a university, though, correct?

17 A. It's not a university, but the
18 courses were taught at various colleges and
19 universities around London.

20 Q. Okay.

21 Does the City and Guilds Institute
22 award bachelor's degrees?

23 A. I don't -- the City and Guilds
24 Institute has, again, changed. At that time
25 there was no bachelor's degree.

1 Q. So were you awarded a qualification
2 by the City and Guilds Institute of London?

3 A. It was called a technological
4 certificate.

5 Q. Were there different levels for the
6 certificates?

7 A. No. It was very similar to the
8 American system, where you got credits for
9 courses. And when you qualified -- when you had
10 enough credits in enough subjects with some core
11 subjects, then you could get the technological
12 certificate.

13 Q. Right. Could you continue after you
14 get the technological certificate with
15 additional classes to get an additional
16 technological certificate?

17 A. You could continue in the City and
18 Guilds Institute to get additional knowledge.
19 And in each class you would complete and take an
20 exam and pass. So I could have gone back and,
21 for example, I believe, done encryption at the
22 City and Guilds Institute. And my understanding
23 now is that they offer a broad range of somewhat
24 technical subjects.

25 Q. Do you remember what classes did you

1 attend at the City and Guilds Institute of
2 London?

3 A. Data transmission, computer science.
4 Elementary telecommunications practice,
5 transmission line theory, mathematics.

6 That's about all I can remember at
7 this point in time. Long time ago.

8 Q. I appreciate it.

9 You said "computer science." Is that
10 a software-related class?

11 A. Well, you're talking about 1968.

12 Q. Yes.

13 A. I was working for the post office
14 which had some level of digital communication
15 and digital processing. And so I took classes
16 at the City and Guilds Institute for programming
17 those products.

18 Q. Do you remember taking a class about
19 computer architecture?

20 A. Well, it was basic computers. I can
21 hardly remember what the name of the subject
22 was, but it was basic communities. At that
23 time, un, we were talking about systems with
24 arithmetic logical units, registers, RAM, but
25 not as it is today.

1 Q. Understood.

2 On page 14 of Exhibit 1002 would you
3 listed two publications, correct?

4 A. Yes.

5 Q. These are the only publications you
6 authored, correct?

7 A. That's correct.

8 Q. The first one was published in 1990
9 in the Automator Magazine, correct?

10 A. That's correct.

11 Q. What is the Automator Magazine?

12 A. At this point in time I was working
13 on testing some software. And the Automator was
14 a product that allowed you to script, create
15 testing scripts.

16 So you could test software by, rather
17 than manually typing the whole thing, by automating
18 it. And I came up with some unique methodologies
19 for testing mainframe software which ended up in
20 this magazine, Automator, that was really about
21 software testing, automated software testing.

22 Q. Do you remember who publishes -- do
23 you know who publishes the Automator Magazine?

24 A. No. I mean, the Automator was
25 probably one of the first scripting languages

1 for testing software. And so it's likely it was
2 the Automator company or whoever produced the
3 software that also produced this regular
4 magazine which talked about various aspects of
5 software testing.

6 Q. Do you know if the Automator Magazine
7 is still in circulation?

8 A. I don't know for sure, no.

9 Q. Okay.

10 So the second publication in your CV
11 is a paper that you presented at a conference,
12 correct?

13 A. Yes. The IEEE conference.

14 Q. And was the paper also published in
15 the IEEE Journal?

16 A. I don't know the answer to that.

17 Q. Your two publications do not relate
18 to the subject matter of the '289 patent,
19 correct?

20 A. That's correct.

21 Q. On page 14 of your CV, you also list
22 the patent that was awarded to you, correct?

23 A. That's correct.

24 Q. Your patent also doesn't relate to
25 the subject are matter of the '289 Patent,

1 correct?

2 A. That's correct.

3 Q. Can you point me to your CV, to
4 anything that would relate to the subject matter
5 of the '289 Patent?

6 MR. GRAY: Objection, form.

7 A. Well, my work history is very
8 relevant to the '289 patent. Starting out with
9 basic computer science for British telecom, from
10 working for IBM. I worked for IBM in the United
11 Kingdom, in Canada and in Los Angeles,
12 California.

13 The ITEL Corporation. I worked for
14 the ITEL Corporation in California. They make
15 a -- or made an IBM-compatible mainframe.

16 At Dialogic Systems, I was working on a
17 system for fast editing of computer programs that
18 run on IBM mainframe. And I developed diagnostics
19 and tested and helped developed IBM-compatible
20 mainframes, all of which are relevant to the '289.

21 Q. Is that all of your answer?

22 A. I was just looking through the rest
23 of my CV so I don't miss anything.

24 I mean, my professional summary covers
25 the work that I've been doing, which includes

1 IBM/370 architecture. And my expertise also
2 includes 370 architecture.

3 That's all that I can see.

4 Q. The most recent professional
5 experience that you listed in your answer was
6 the Amdahl Corporation, correct? From 1984 to
7 1994, correct?

8 A. That is correct.

9 Q. Okay.

10 I would like to upload Exhibit --
11 actually, I have already uploaded Exhibit 1001,
12 that's the '289 patent. Again feel free to use
13 the version on Exhibit Share or the printed
14 version. Let me know once you have it.

15 A. Okay, I have it.

16 Q. Can you look at the title of the '289
17 patent?

18 A. Yes.

19 Q. So the title of the '289 patent is
20 "Efficiently Emulating Computer Architecture
21 Condition Code Settings Without Executing Branch
22 Instructions," correct?

23 A. Correct.

24 Q. Let me pass this title, okay?

25 What in your CV best describes your

1 experience and qualifications regarding emulators?

2 A. My experience at Amdahl.

3 Q. What in your CV describes your
4 experience and qualifications regarding
5 condition codes?

6 A. My experience at Amdahl and at ITEL
7 Systems.

8 Let me just check, hang on.

9 At Dialogic Systems. Yeah, that's
10 it.

11 Q. What in your CV best describes your
12 experience and qualifications regarding branch
13 instructions?

14 MR. GRAY: Objection, form.

15 A. My experience at Amdahl. My
16 experience at Xyratex. My experience at
17 Infinera, Ciena, Dialogic Systems, ITEL, IBM,
18 and British Telecom.

19 MR. KONSTANTAKOPOULOS: We've been
20 going for about an hour, so let's take a
21 break. Is that okay with you?

22 THE WITNESS: That's fine, yes.

23 MR. KONSTANTAKOPOULOS: Let's go off
24 the record.

25 (Off the record.)

1 MR. KONSTANTAKOPOULOS: Welcome back,
2 Mr. Jestice. During the break did you
3 communicate with counsel?

4 A. Yes.

5 Q. Did you talk about the contents of
6 the deposition?

7 A. No.

8 Q. A few more questions about your CV,
9 then we can move on.

10 So when I asked about your experience
11 about the computer code, you mentioned the
12 Amdahl Corporation, correct?

13 A. That's correct.

14 Q. So you left the Amdahl Corporation,
15 in 1994, correct?

16 A. That's correct.

17 Q. And the prior art date of the '289
18 Patent is 2007; is that correct?

19 A. That's correct.

20 Q. So that's 13 years between the time
21 you left the Amdahl Corporation and the priority
22 date of the '289 patent, correct?

23 A. Correct.

24 Q. Between 1994 and 2007 have you worked
25 on emulators or condition codes?

1 A. What do you mean by working on
2 emulators and condition codes?

3 Q. Did you have any working experience
4 between 1994 and 2007 on emulators or condition
5 codes?

6 MR. GRAY: Objection, form.

7 A. I understand what you said, but I
8 don't understand what you mean by "have you done
9 any work on."

10 BY MR. KONSTANTAKOPOULOS:

11 Q. Let's focus on what you did since you
12 left Amdahl, so please turn to page 3 of
13 Exhibit 1002.

14 Between 1994 and 1996 you were
15 employed at ZADIAN Technologies, correct?

16 A. That's correct.

17 Q. Can you describe your job
18 requirements at ZADIAN Technologies?

19 A. Yes.

20 Q. Did any of the job requirements at
21 ZADIAN Technologies have anything to do with
22 emulators and condition codes?

23 A. The answer, yes. It depends on what
24 you mean use, or I forget what the term you used
25 was. What was the question again?

1 Q. Does it have anything to do with
2 emulators or condition codes?

3 A. Having to do with, yes.

4 Q. What was the position that you held
5 at ZADIAN Technologies -- let me rephrase that.

6 What did you do at ZADIAN that related
7 to emulators?

8 A. ZADIAN Technologies we produced a
9 product that tested mainly storage devices, disk
10 drives, CD-ROMs, tape drives, RAID devices. We
11 had a box we called a pod that used a 68,000 and
12 ran a small operating system that we used for
13 our testing.

14 So during the process of building the
15 pods we used emulators and simulators for the
16 podware.

17 Q. Did the work you did at ZADIAN
18 Technologies relate to condition codes?

19 A. I don't remember whether the 68,000
20 had condition codes, orbit maps at this point.

21 Q. What is the difference between
22 condition codes and bit maps?

23 A. In terms of the patent, the IBM 360,
24 370, 390 architecture defines condition codes
25 rather than a bit map. So they actually encode

1 the bit map into the condition code.

2 Q. So let's move on to the work that you
3 did at the ZADIAN Technologies corporation.

4 A. Okay.

5 Q. So did the work that you did at
6 ZADIAN Technologies relate to condition codes?

7 A. Zadian was bought. So we continued
8 to work on the pods after it had been renamed
9 ZADIAN.

10 Q. On page 2 of your CV you list the
11 work that you did at Ciena Corporation, correct?

12 A. That's correct.

13 Q. Did the work that you did at Ciena
14 Corporation relate to emulators?

15 A. It's the same. I used emulators at
16 Ciena Corporation.

17 Q. Did the work that you did at Ciena
18 relate to condition codes?

19 A. Can you restate the question?

20 Q. Did the work that you did at Ciena
21 Corporation relate to condition codes?

22 A. At the Ciena Corporation, we had very
23 certain operations. They all had condition
24 codes. They all had branches on condition.

25 Q. So I have introduced on Exhibit Share

1 Exhibit 1024, and I understand that this is one
2 of the Exhibits that you don't have a hard copy,
3 so please look at the exhibit on the monitor,
4 please.

5 MR. GRAY: You have to hit refresh in
6 the browser, please.

7 A. Okay, I have it.

8 BY MR. KONSTANTAKOPOULOS:

9 Q. Have you reviewed Exhibit 1024?

10 A. I have, yes, briefly.

11 Q. Does this mean that you have not
12 reviewed Exhibit 1024 in its entirety?

13 A. I've looked at the entirety of it.

14 Q. Okay. Do you understand
15 Exhibit 1024?

16 A. Yes.

17 Q. Is there anything in Exhibit 1024
18 that you do not understand?

19 MR. GRAY: Objection, form.

20 A. No, I understand this.

21 BY MR. KONSTANTAKOPOULOS:

22 Q. This is an exhibit that counsel
23 provided, correct?

24 A. That's correct.

25 Q. Can you please turn to Exhibit 1024

1 at page 4?

2 A. Where on page 4?

3 Q. On the left column, the first
4 sentence right before Table 2-7 reads,
5 "Condition codes are difficult to implement
6 primarily because they are an irregular
7 structure."

8 Did I read that correctly?

9 A. Yes.

10 Q. Do you understand this sentence?

11 A. Yes.

12 Q. Condition codes are an irregular
13 structure, correct?

14 A. That's what it says.

15 Q. What does it mean that condition
16 codes are an irregular structure?

17 A. I will just read the rest of this to
18 refresh myself. I think that the way that they
19 are using that term is that the condition code
20 is a side effect of that.

21 Q. So you are saying because condition
22 codes are updated as a side effect that makes
23 them an irregular structure?

24 A. That's what this paper is saying.

25 Q. I'm asking for your understanding of

1 what it means. I've given no opinion on this
2 document.

3 So the second sentence of that
4 paragraph reads, "As opposed to registers, where
5 the references of updates of objects are
6 explicit, condition codes are updated as a side
7 effect."

8 Correct?

9 A. That's what it says.

10 Q. That's what you mentioned before,
11 correct?

12 A. That's what I read, yes.

13 Q. And you understand the sentence?
14 What does it mean that condition codes are
15 updated as a side effect?

16 A. I can read these paragraphs out to
17 you.

18 Q. I am asking you as an expert if you
19 understand what it means.

20 A. I mean, I can read. I can also read.
21 I understand what the overall paper is saying.
22 That the exact phraseology is not what I would
23 pick.

24 Q. How are condition codes updated?

25 MR. GRAY: Objection, form.

1 A. What do you mean, how are they
2 updated?

3 BY MR. KONSTANTAKOPOULOS:

4 Q. Well, the paper uses the term
5 "condition codes are updated as a side effect,"
6 and you say that's not the exact phraseology
7 that you would pick. I am asking what your
8 phraseology would be in condition as to how the
9 condition codes are updated.

10 A. Condition codes are created as a
11 result of many -- we are talking about IBM, many
12 IBM instructions. The condition code is stored
13 in IBM PSW or BSW.

14 Normally, you would perform an
15 arithmetic operation and then you would branch
16 based on the condition code being set. You
17 don't have to but that's generally how it works.
18 That's how the condition code is set as a right
19 of various arithmetic input, output. There are
20 many methods within the IBM architecture that
21 create condition codes.

22 Q. The left column starts with, "As
23 opposed to registers."

24 Do you see that?

25 A. Yes.

1 Q. So how is updating registers
2 different from updating condition codes?

3 A. The register in an IBM architecture,
4 the 16 general purpose registers. They are very
5 fast access. Condition codes aren't stored in
6 general purpose registers by the hardware.

7 Q. Can you please look at page 4 of
8 Exhibit 1024 at the right column?

9 A. At the right column?

10 Q. Yes. The first sentence of the first
11 full paragraph reads, "To implement conditional
12 branches on a condition code machine, first the
13 condition, and then is set, then a conditional
14 branch is used."

15 Did I read that correctly?

16 A. You did.

17 Q. There seems to be a typo in the
18 sentence, correct?

19 A. Yes.

20 Q. I am wondering if you have an idea
21 what this sentence means. I think that's just
22 as I previously described it, is that an
23 instruction that creates a condition code sets
24 the condition code and then a conditional branch
25 is generally used afterwards.

1 So the sentence reference is a
2 condition code machine, correct?

3 A. Yes, it does.

4 Q. What is a condition code machine?

5 A. My understanding from that sentence
6 it's a machine such as an IBM/370 that generates
7 condition codes rather than a bit map.

8 Q. I then read will from the first full
9 paragraph. It says, "Most architectures set
10 condition codes by ALU operations only. The VAX
11 sets the condition code on all move operations."

12 Did I read that correctly?

13 A. You did.

14 Q. Now, let's go to the second
15 paragraph. The first sentence of the second
16 full paragraph at page 4 of Exhibit 1024 reads,
17 "MIPS, and a few other architecture, such as the
18 Cray-1, and PDP-10 implement conditional control
19 flow using compare and branch instructions."

20 Correct?

21 MR. GRAY: Objection, form.

22 A. MIPS are architectures such as the
23 Cray-1, and Done, condition control code, using
24 compare and branch instructions, that's correct.

25 BY MR. KONSTANTAKOPOULOS:

1 Q. The MIPS architecture does not
2 implement conditional flow using condition
3 codes, correct?

4 MR. GRAY: Form.

5 A. I don't believe that's correct.

6 Q. We just read that the MIPS
7 architecture, using compare and branch
8 instructions, correct. It can do. How is
9 compare and branch instructions different -- let
10 me rephrase that.

11 How is using compare and branch
12 instructions to implement conditional control flow
13 from using condition codes?

14 MR. GRAY: Objection, scope and form.

15 A. Let's take a simple operation on an
16 IBM mainframe operation, condition code is set
17 and branch on that condition. If you are not
18 using condition codes you would do an. Or if
19 you didn't have condition codes you would have a
20 compare instruction, bits would be set.

21 You would compare the bits that were set
22 and make a decision on the subsequent branch if
23 there was one.

24 BY MR. KONSTANTAKOPOULOS:

25 Q. Are there any tradeoffs between the

1 two approaches?

2 A. I'm sure there are, but I haven't
3 considered them.

4 Q. So you couldn't answer why someone
5 would prefer using compare and branch
6 instructions to implement conditional control
7 flow over using condition codes, correct?

8 MR. GRAY: Objection, form.

9 A. Can you ask that again?

10 BY MR. KONSTANTAKOPOULOS:

11 Q. You couldn't answer why someone would
12 consider using compare and branch instructions
13 to implement conditional control flow over using
14 condition codes, correct?

15 A. That's correct.

16 Q. Let me make available Exhibit 100
17 now. You and I understand that you have a hard
18 copy of this exhibit, but let me make it
19 available as well. I believe you will be able
20 to see Exhibit 1009.

21 A. This is the Kane document?

22 Q. Correct.

23 A. Let me look it up.

24 Q. You can use either the printed
25 version or the online version. You have viewed

1 Exhibit 1009, correct?

2 A. Correct.

3 Q. Do you understand Exhibit 1009?

4 A. I understand the section that I have
5 quoted, yes.

6 Q. And this is an exhibit that you
7 provided, correct?

8 A. That's correct.

9 Q. Is there anything in Exhibit 1009
10 that you do not understand?

11 A. The only section that I've used in
12 Kane, 1009 is the handling an overflow in an ADD
13 command.

14 Q. But my question is, is there anything
15 in Exhibit 1009 that you do not understand? Let
16 me explain what I'm talking about with
17 Exhibit 1009. The only thing that I am talking
18 about is the Exhibit that I provided so let me
19 ask you the question again?

20 A. Okay.

21 Q. Is there anything in Exhibit 1009
22 that you do not understand?

23 MR. GRAY: Objection, form.

24 A. If you are referring to the sections
25 that I put in my declaration, I understand that

1 section.

2 If You are talking about the entirety of
3 the book, I couldn't tell you.

4 Q. I am only talking about the 49 pages
5 of Exhibit 1009, of the Exhibits of the
6 proceedings you have that in.

7 A. There's only one reference that I
8 pulled out of Kane which was the handling of the
9 ADD instruction.

10 Q. Have you reviewed Exhibit 1009 in its
11 entirety?

12 A. No.

13 Q. You haven't reviewed the 49 pages
14 that were submitted as Exhibit 1009?

15 A. The only thing I reviewed is how to
16 detect an ADD without causing an exception.

17 Q. And 1009 is entitled "MIPS
18 architecture." And this is a book that
19 describes the MIPS/RISC architecture, correct?

20 A. Based on the title, that's correct.

21 Q. Well, I did a key word check for MIPS
22 in your CV, but I do not see any entry for MIPS;
23 is that right?

24 A. That's correct.

25 Q. Are you familiar with the MIPS

1 architecture?

2 A. Yeah, at a very high level, yes.

3 Q. How are you familiar with the MIPS
4 architecture?

5 A. In review, I added an ADD view for
6 the Kane documents.

7 Q. Are you familiar with the context of
8 this IP proceeding?

9 A. What do you mean "are you familiar
10 with"?

11 Q. In your experience did you ever have
12 to work with processors that employed the MIPS
13 architecture?

14 A. I understand the process of using the
15 RISC over the MIPS architecture, and I am
16 familiar with handling the overflow.

17 Q. I also did a keyword search for RISC
18 in your CV, and I also did not see any entries
19 for RISC.

20 Does this sound right?

21 A. That's probably correct, yes.

22 Q. But you are familiar with the RISC
23 architecture, correct?

24 A. I wrote BIOS for PowerPC.

25 Q. But is this how you are familiar with

1 the RISC architecture?

2 A. By writing code for PowerPC, yes.

3 And I understand it from an academic standpoint
4 about RISC architectures.

5 Q. Can you please turn to Exhibit 1009,
6 at page 43?

7 A. Okay.

8 Q. So the first sentence of the second
9 paragraph reads "The R2000 architecture also
10 provides no condition code register containing
11 status bits such as 'carry' and 'overflow.'"

12 Correct?

13 A. That's what it says.

14 Q. The MIPS architecture provides no
15 condition code registers containing status bits
16 such as the carry and overflow, correct?

17 A. That's what it says.

18 Q. In fact, the MIPS architecture
19 provides no condition code register for any
20 status, correct?

21 A. I would disagree with that statement.

22 Q. Why?

23 A. Because my -- I believe there are
24 MIPS processes that do have condition codes.

25 Q. Can you provide any reference -- let

1 me rephrase that.

2 Can you point to any MIPS processor
3 that was made of record in this proceeding that
4 provides condition codes?

5 A. I'd have to research that.

6 Q. Can you please turn to the second
7 sentence of the second paragraph that reads
8 "Instead, the conditions generated by the Set
9 instructions (slt, sltu) are loaded directly
10 into a general-purpose register."

11 Did I read that correctly?

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

13 Q. The third sentence reads "This
14 approach greatly simplifies handling of the
15 instruction pipeline and eases many compiler
16 tasks but does require that programs explicitly
17 check for conditions such as overflow and
18 carry."

19 Did I read that correctly?

20 A. You did, yes.

21 Q. Is it your understanding that this
22 section describes the benefits of using
23 general-purpose registers instead of condition
24 code registers?

25 A. That's what this article says, yes --

1 or this book says.

2 Q. But how does using a general-purpose
3 register instead of a condition code register
4 greatly simplifies handling of the instruction
5 pipeline and eases many compiler tasks?

6 A. I haven't considered that question.

7 Q. Can you please turn to page 45?

8 A. Okay.

9 Q. The first sentence reads "The R2000
10 does not provide the status bit to indicate
11 whether an arithmetic operation resulted in an
12 overflow."

13 Correct?

14 A. That's correct.

15 Q. The MIPS architecture does not
16 provide the status bit to indicate whether a
17 arithmetic operation resulted in an overflow,
18 correct?

19 MR. GRAY: Objection, form.

20 A. Can you say it again?

21 BY MR. KONSTANTAKOPOULOS:

22 Q. I'm just replacing R2000 with MIPS.
23 So let me read the sentence again.

24 "The MIPS architecture does not
25 provide a status bit to indicate whether an

1 arithmetic operation resulted in an overflow."

2 Did I read that correctly?

3 A. No, you didn't. I mean, you said you
4 substituted --

5 Q. I'm sorry. I apologize. I withdraw
6 the question. Let me ask again.

7 "The R2000 architecture does not
8 provide a status bit to indicate whether an
9 arithmetic operation resulted in an overflow."

10 Correct?

11 A. Are you reading from Kane?

12 Q. My point is that R2000 is
13 representative of the MIPS architecture,
14 correct?

15 A. I believe so, yes.

16 Q. So when the first sentence reads,
17 "The R2000 does not provide a status bit to
18 indicate whether an arithmetic operation
19 resulted in an overflow," is it your
20 understanding that in general the MIPS
21 architecture does not provide the status bit to
22 indicate whether an arithmetic operation
23 resulted in an overflow?

24 A. I haven't looked at all the different
25 MIPS processes to know whether that is true or

1 not.

2 Q. But with regard to the exhibit that
3 you provided to counsel and was submitted as
4 Exhibit 1009, can you please turn to page 2?

5 A. Are you talking about page 2 of the
6 Exhibit?

7 Q. Correct. The second page of the PDF.

8 A. Okay.

9 Q. Can you read this paragraph below the
10 MIPS RISC architecture setting?

11 A. It says "This book describes the MIPS
12 RISC architecture. The R2000 Processor and the
13 R2010 Floating Point Accelerator are the
14 original implementation of the architecture and
15 the R2000/R2010 numbing notation is used
16 throughout the text.

17 "Higher-performance versions of the two
18 machines, the R3000 and the R3010 are the newest
19 implementation of the MIPS RISC architecture. All
20 references in this book to the R2000/R2010
21 Processors apply fully to the new R3000/R3010
22 Processors."

23 Q. Thank you. I didn't need you to read
24 it out loud, but I appreciate that you did.

25 Is it your understanding that

1 Exhibit 1009 refers to the R2000 architecture,
2 it refers to the MIPS RISC architecture versions
3 that include the R2000, the R2010, the R3000 and
4 the R3010 versions; is that correct?

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

6 Q. When Exhibit 1009 refers to the R2000
7 architecture, all its references apply to all
8 versions of the MIPS RISC architecture discussed
9 in this book, correct?

10 A. Well, it's saying it refers to the
11 R3000, 3010, 2000, and 2010.

12 Q. These are the only versions of the
13 MIPS processor described in this Exhibit,
14 correct?

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

16 Q. Let's go back to page 35.

17 A. Okay.

18 Q. Let me read again the first sentence.
19 "The R2000 does not describe a status bit to
20 indicate whether an arithmetic operation
21 resulted in an overflow."

22 Did I read that correctly?

23 A. You read correctly, yes.

24 Q. Is it your understanding that all
25 MIPS architecture described in Exhibit 1009 do

1 not provide a status bit to indicate whether an
2 arithmetic operation resulted in an overflow?

3 A. That's what the book says.

4 Q. So the MIPS architecture described in
5 Exhibit 1009 provides no condition code for an
6 overflow, correct?

7 A. That's what Kane says, yes.

8 Q. Let me make Exhibit 1008 available on
9 Exhibit Share.

10 This is a long doc and will take some
11 time.

12 BY MR. KONSTANTAKOPOULOS:

13 Q. I'm sorry. Do you have a printed
14 version of Exhibit 1008?

15 A. Which one is that?

16 Q. That's the IBM/390 system, principles
17 of operations reference manual. Do you have
18 that?

19 A. No, I don't.

20 Q. So let's give it some time to
21 populate. Can you refresh your web page,
22 please?

23 A. I can see it. I'm just downloading
24 it.

25 Q. Okay, great. Let me ask you a

1 question. So your CV mentions that you have
2 experience with the IBM 370 architecture; is
3 that correct?

4 A. That's correct.

5 Q. Is the 370 and 390 architectures
6 related?

7 A. 390s came up as 370.

8 Q. Do you have any experience working on
9 the IBM/390 architecture?

10 A. For Amdahl, yes.

11 Q. Okay. Can you briefly explain what
12 your experience was in connection with the IBM,
13 either the 370 or the 390 architecture.

14 A. Well, one of the jobs I had at Amdahl
15 was writing diagnostics. So I wrote and managed
16 the department that wrote programs to test the
17 product that we had produced. It was a hundred
18 percent compatible with the IBM mainframes. So
19 in that role I wrote a variety of diagnostics, I
20 managed a variety of people writing diagnostics.
21 I tested Amdahl mainframes. I also tested
22 Fujitsu mainframes because we were partially
23 owned by Fujitsu.

24 Q. And can you tell me if Exhibit 1008
25 has downloaded.

1 A. It's saying preview generation is
2 still in progress. You can retry manually or
3 exit and return at a later time.

4 Q. You're not going to download the
5 exhibit. Instead of review it in the
6 environment. Do you see you can download it and
7 open up Acrobat?

8 A. How do I download it?

9 Q. Let's go off the record and than I
10 can explain.

11 MR. KONSTANTAKOPOULOS: Is it okay to
12 take a five-minute break until we sort
13 things out?

14 MR. GRAY: Yeah, let me see if I can
15 just help real quick.

16 MR. KONSTANTAKOPOULOS: Let's go off
17 record.

18 There's no box on the left side?

19 THE WITNESS: A picture of a PDF, but
20 when you click on that you get the same
21 results. It just starts generating a
22 preview.

23 MR. KONSTANTAKOPOULOS: And the
24 preview fails to download or render?

25 THE WITNESS: I think it's taking a

1 while. It says you've got to be patient.

2 MR. KONSTANTAKOPOULOS: Okay.

3 THE WITNESS: Right now it says,
4 "Generating the preview, may take a while.
5 Unspecified."

6 Do you want to take a quick break
7 while we are waiting for this?

8 MR. GRAY: Let's go off the record
9 and take a quick break.

10 (Off the record.)

11 BY MR. KONSTANTAKOPOULOS:

12 Q. Mr. Jestice, do you have in front of
13 you, Exhibit 1008?

14 A. Yes I do.

15 Q. Have you reviewed Exhibit 1008?

16 A. Yes, I have.

17 Q. I know it's a long document. Have
18 you reviewed Exhibit 1008 in its entirety?

19 A. No, I haven't.

20 Q. In the sections of 1008 that you have
21 reviewed, do you understand those sections?

22 A. Yes.

23 Q. Exhibit 1008 is titled Principles of
24 Operation, correct?

25 A. Yes, it is.

1 Q. It describes IBM's enterprise system
2 architecture/390, correct?

3 A. That's correct.

4 Q. If I mention the term IBM/390, I will
5 refer to IBM's enterprise system architecture
6 390, is that okay?

7 A. That's okay.

8 Q. Can you please turn to page 49 of
9 Exhibit 1008.

10 A. This is the one beginning Chapter 2?

11 Q. Page 49 is where Chapter 2 starts.
12 Do you see that?

13 A. Yes.

14 Q. Now, Figure 2-1 shows the logical
15 structure of an ESA390 system with two CPUs,
16 correct?

17 A. That's correct.

18 Q. And if you go down to page -- it's on
19 page 51.

20 A. Okay.

21 Q. So page 51 discusses what you
22 mentioned before as a PSW. Do you see that?

23 A. Yes.

24 Q. Let me read from the third paragraph
25 on the left column on page 51.

1 The program-status word (PSW)
2 includes the status address, condition code, and
3 other information used to control sequencing and
4 determine the state of the CPU."

5 Did I read that correctly?

6 A. That's correct.

7 Q. In the IBM/390 system the condition
8 codes are within the PSW, correct?

9 A. The condition codes are available
10 within the PSW, yes, that is correct.

11 Q. Can you describe what is the PSW?

12 A. Program-status word. It contains a
13 variety information. Generally, the next
14 instruction address is in the PSW.

15 Q. So is it the hardware structure?

16 A. Yes.

17 Q. Now, on pages 51 and 52 of Exhibit
18 1008 also lists different types of registers.
19 Do you see them?

20 A. That's correct.

21 Q. Pages 51 lists general registers and
22 floating point registers. Do you see them?

23 A. I missed the first word you said?

24 Q. General registers and floating point
25 registers on page 51.

1 A. I see where you mean. Yes, general
2 registers and floating point registers, yes.

3 Q. And page 52 discusses floating point
4 control registers and control registers and
5 access registers, correct?

6 A. That's correct.

7 Q. How is the PSW different from the
8 different types of registers described on pages
9 51 and 52?

10 MR. GRAY: Objection, form.

11 A. Can you restate that.

12 BY MR. KONSTANTAKOPOULOS:

13 Q. So the program-status word, PSW, do
14 you have that in mind?

15 A. Yes.

16 Q. Do I have its structure in mind?

17 A. Yes.

18 Q. How is the PSW structure different
19 from the structure of a general register?

20 A. Well, there's many ways. The
21 program-status register I don't believe we can
22 store anything into. It's a read operation.
23 It's not available for arithmetic operations.
24 Or directly to compare, it has no register
25 identifier, so you can't say read, store one in

1 the PSW, it's all done indirectly. It's a
2 completely different function.

3 Q. Can you please turn to page 116 of
4 the Exhibit.

5 MR. GRAY: Did you say 116, 116?

6 MR. KONSTANTAKOPOULOS: 116, correct.

7 A. Okay.

8 BY MR. KONSTANTAKOPOULOS:

9 Q. Please go one page up to page 115.
10 Do you see on the left column, the
11 program-status word format?

12 A. Yes.

13 Q. Do you see there are different bits
14 identified in Figure 4-2?

15 A. Yes.

16 Q. Now you can turn to page 116, please.

17 A. Okay.

18 Q. On the left column do you see the
19 paragraph that starts with condition code,
20 parentheses, CC, close parentheses?

21 A. Yes.

22 Q. Let me read the first sentence.

23 "Bits 18 and 19 of the PSW are the two bits of
24 the condition code."

25 Correct?

1 A. That's correct.

2 Q. So the condition coded is set to 0,1,
3 2, or 3, depending on the result obtained in
4 executing certain instructions."

5 Correct?

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

7 Q. I know you briefly talked on it. Can
8 you explain how the condition code bits are set
9 in the PSW?

10 A. It depends on the operation. If you
11 take a compare operation, comparison will be
12 done. The results of the compare will be
13 indicated in hardware, and at some point in time
14 moved into the PSW. So you can subsequently
15 make a branch based on the setting of the
16 condition code.

17 Q. So if the value of the condition code
18 changes in response to an operation, would only
19 bits 18 and 19 change at the PSW?

20 MR. GRAY: Objection, form.

21 A. It depends if anything else changed.

22 BY MR. KONSTANTAKOPOULOS:

23 Q. Understood. So let me rephrase.

24 Thanks for the clarification. If nothing else
25 changes in the bits described in the PSW -- let

1 me rephrase that again.

2 If nothing else changes in the bits
3 included in the program-status word and the
4 result of an arithmetic operation changes the
5 value of the condition codes, would only bits 18
6 and 19 change in the program-status word?

7 MR. GRAY: Objection, form and scope.

8 A. The answer's no.

9 BY MR. KONSTANTAKOPOULOS:

10 Q. Can you explain?

11 A. One thing that will certainly change
12 is the next instruction address. Once you've
13 completed the compare, it's going to point to
14 the next instruction. And it's possible that
15 other bits in the program-status-word changed.
16 But certainly that is one of them that would
17 change. I don't see anything else obviously
18 that would change.

19 Then in respect to the instruction
20 that was -- say, the compare instruction, the
21 only thing relevant to the compare instruction
22 and, of course, the next instruction that would
23 be executed would be those two bits.

24 Q. And it says the compare instructions
25 that executed that changed the value of the

1 condition code bits, you would expect bits 18
2 and 19 to change and the instruction address
3 filled to go to the next instruction.

4 Is that a fair summary of what you
5 said?

6 A. Yes.

7 Q. Okay.

8 MR. KONSTANTAKOPOULOS: I know we've
9 taken a break, but we've been going on for
10 an hour. Do you want to continue going on
11 or do you want another break?

12 THE WITNESS: No, I'm fine.

13 MR. KONSTANTAKOPOULOS: Okay. We'll
14 continue.

15 BY MR. KONSTANTAKOPOULOS:

16 Q. So I will make available Loderer,
17 which is Exhibit 1005. I understand you have
18 that exhibit?

19 A. Okay, I have it.

20 Q. So Exhibit 1005 is actually a
21 translation of a European publication with
22 number EP 0 843 256 A2, correct?

23 A. That's correct.

24 Q. The original publication was in
25 German, if you remember, correct?

1 A. That's my understanding, yes.

2 Q. Do you understand German?

3 A. No, I don't.

4 Q. When I refer to Loderer, I will refer
5 to its translation, Exhibit 1005; is that okay?

6 A. That's fine, yes.

7 Q. Okay.

8 Have you read Loderer?

9 A. Yes.

10 Q. Have you read Loderer in its
11 entirety?

12 A. Yes.

13 Q. Is there any part of Loderer that you
14 did not read?

15 A. No.

16 Q. Do you understand Loderer?

17 A. Yes.

18 Q. Is there anything i Loderer that you
19 do not understand?

20 A. No.

21 Q. Have you read the specification of
22 the Loderer patent?

23 A. Are you talking about 1005?

24 Q. Correct.

25 A. The translation. Yes, I read 1005.

1 Q. Okay.

2 So is there any word in Exhibit 1005
3 that you do not recognize?

4 A. No.

5 Q. Is there any word in Exhibit 1005
6 that you do not understand?

7 A. No.

8 Q. Does Loderer describe technology that
9 you're familiar with?

10 A. Yes.

11 Q. Have you looked at the drawings of
12 the Loderer patent?

13 A. Yes.

14 Q. Do you understand the drawings of the
15 Loderer patent?

16 A. Yes.

17 Q. And have you read the claims of the
18 Loderer patent?

19 A. Yes.

20 Q. Do you understand the claims of the
21 Loderer patent?

22 A. Yes.

23 Q. Can you please turn to Figure 2 of
24 Loderer, which is on page 6?

25 A. Okay.

1 Q. Figure 2 shows how the condition
2 codes for the compare instruction are set in the
3 IBM/390 system, correct?

4 A. Yes.

5 Q. So what does the first column of
6 Figure 2 show?

7 A. This column indicates the condition.
8 For example, if OP1 is equal to OP2 -- I mean,
9 there's four possibilities with the compare,
10 that either they're equal, one is greater than
11 the other, or you have an overflow condition.

12 Q. And what does the second column of
13 Figure 2 show?

14 A. It shows the condition code on an IBM
15 360, 370, 390 processor.

16 Q. And CCW, the acronym, that's the
17 value for the condition code CC, correct?

18 A. Yeah. I mean, it's a misnaming,
19 because there is a CCW within the IBM
20 architecture. But what he's referring to -- or
21 she is referring to the condition code in this
22 case, not the IBM CCW.

23 Q. Okay.

24 Just to clarify for the record, can
25 you go to the abstract on page 1.

1 A. Yes.

2 Q. The second paragraph reads, "Mapping
3 is defined which uniquely associates each
4 possible value (CCW) of the condition code
5 (CC)..."

6 Did I read that correctly?

7 A. That's correct.

8 Q. So with regard to how Loderer uses
9 acronyms, CC is the condition code and CCW is
10 the value of the condition code, is that
11 correct?

12 A. That's how Loderer is using it, yes.

13 Q. Let's go back to Figure 2 on page 6.

14 A. All right.

15 Q. Column 2 shows the value for the
16 condition code for the instruction in the
17 IBM/390 system, correct?

18 MR. GRAY: Objection, form.

19 A. Yeah, that's what Loderer is saying.
20 I was just pointing out the CCW is confusing.

21 Q. I understand. I just wanted to make
22 clear that when we are referring to CCW in this
23 deposition I will refer to how Loderer uses the
24 acronym CCW; is that clear?

25 A. That's clear.

1 Q. And the third column, the title of
2 the column is "BM."

3 Do you see that?

4 A. Yes.

5 Q. And BM stands for bit pattern,
6 correct?

7 A. Yes.

8 Q. And I understand why Loderer chose
9 BM, but if you want to confirm, if you go to the
10 abstract again. The second paragraph, the
11 fourth line talks about the bit pattern (BM).

12 Do you see that?

13 A. Yeah. No, I understand.

14 Q. Now that we've cleared the acronyms
15 on Figure 2, let's look at the second row of the
16 table in Figure 2.

17 A. Okay.

18 Q. So when operand 1 is equal to operand
19 2, the condition code in the source architecture
20 is zero, correct?

21 A. When operand 1 is equal to operand 2
22 the source architecture, in this case, the IBM
23 would be zero. Yes, that's correct.

24 Q. And when operand 1 is equal to
25 operand 2, the bit pattern, BM, in the target

1 architecture is 1000, correct?

2 A. That's correct.

3 Q. So if the bit pattern 1000 in the
4 register REG in the target architecture
5 indicates that the condition code in the source
6 architecture is zero; is that correct?

7 MR. GRAY: Objection, form.

8 A. The condition code that it should
9 generate should be a zero, yes, that's correct.

10 BY MR. KONSTANTAKOPOULOS:

11 Q. I'm asking, so what does the bit
12 pattern indicate? So let me give you the
13 question again.

14 So the bit pattern, 1000, in the
15 target architecture indicates that the condition
16 code in the IBM/390 system is zero, correct?

17 A. No.

18 Q. So did you say "no"?

19 A. I said "no," yes. Sorry. No.

20 Q. What does at value of BM, 1000
21 indicate with regard to the value of the CCW?

22 A. It indicates that what the CCW should
23 be.

24 Q. Right. So the bit pattern, 100 in
25 the architecture indicates that the condition

1 code in the source architecture should be zero,
2 correct?

3 A. It should be zero, that's correct.

4 Q. Okay.

5 Let's go to the second row of the
6 table -- excuse me, the third row in Figure 2.

7 Have that?

8 A. Yes.

9 Q. When operand 1 is less than operand 2
10 the condition code in the source architecture is
11 1, correct?

12 A. I think we're having the same problem
13 with the language again. It should be 2.

14 Q. I'm pointing you to the third row,
15 where operand 1 is less than less than
16 operand 2.

17 Do you see that?

18 A. I'm sorry. Operand 1 is less than
19 operand 2. Yes, I see that.

20 Q. Let's focus on that row?

21 A. Yes.

22 Q. Ok. Now, let me give you the
23 question again.

24 When operand 1 is less than operand 2
25 the condition code in the source architecture is 1,

1 correct?

2 A. That's the problem I'm having. No.

3 Q. Let me do that again. When operand 1
4 is less than operand 2, the condition code value
5 in the source architecture should be 1, correct?

6 A. Should be 1, that's correct.

7 Q. When operand 1 is less than operand 2
8 the bit pattern, BM, in the target architecture
9 should be 1 -- excuse me, should be 0100,
10 correct?

11 A. That's correct.

12 Q. The bit pattern 0100 in the target
13 architecture indicates that the condition code
14 value in the source architecture should be 1,
15 correct?

16 MR. GRAY: Objection, form.

17 A. Correct.

18 BY MR. KONSTANTAKOPOULOS:

19 Q. Now, let's move on to the fourth row.
20 When operand 1 is greater than operand 2 the
21 condition code value in the source architecture
22 should be 2, correct?

23 A. That's correct.

24 Q. When operand 1 is greater than
25 operand 2 the bit pattern, BM, in the target

1 architecture should be 0010, correct?

2 A. That's correct.

3 Q. The bit pattern 0010 in the target
4 architecture indicates that the condition code
5 value in the source architecture should be 2,
6 correct?

7 MR. GRAY: Objection, form.

8 A. I thought we just answered that
9 question. It should be two in that condition,
10 yes.

11 BY MR. KONSTANTAKOPOULOS:

12 Q. Okay. So when the comparison
13 instruction executes in the source architecture
14 and the two operands are equal, the condition
15 code value is set to 0 in the source
16 architecture, correct?

17 A. If we are running on the -- if we do
18 the comparison on the source architecture, the
19 condition code should be 0.

20 Q. Can you please go to Loderer page 3.

21 A. Okay.

22 Q. Do you see the last paragraph on the
23 right column?

24 A. Which figure are you in?

25 Q. I am talking about page 3 of the

1 right column, last paragraph.

2 A. Okay.

3 Q. So the last paragraph on the right
4 column reads, "In the machine architecture of
5 the source hardware -- let me try again.

6 "In the machine architecture of the
7 source hardware M1, the condition code CC is
8 typically implemented as a special hardware
9 display."

10 Do you see that?

11 A. I see that, yes.

12 Q. I am having some problems
13 understanding the word "display." What is a
14 special hardware display?

15 A. I have the same problem. There isn't
16 actually a display. I suspect it's a
17 translation problem.

18 Q. So with regard to this word, you do
19 have a problem understanding what Loderer means,
20 correct?

21 A. No, I understand the source
22 architecture, but the condition code is
23 typically implemented in special hardware. I
24 think the display is the only redundant. It's
25 probably incorrect.

1 Q. I understand. Sorry. Can you finish
2 your answer?

3 A. Yes.

4 Q. Okay. So what is the special
5 hardware in the source architecture?

6 A. Well, it depends on the command, but
7 if you are doing something like a command, the
8 arithmetic logic unit of the source architecture
9 would have a flag that would say the greater,
10 equal, less than, and so on. It's not an
11 accessible program but it would typically be
12 built-in hardware.

13 Q. So when Loderer talks about the
14 condition code being implemented as a special
15 hardware, that means that that special hardware
16 is not accessible by a program?

17 A. Well, the encoding of the special
18 hardware is.

19 Q. Okay. And what is so special about
20 the hardware? Why the qualifier special?

21 A. Because it's not -- it's not
22 available to a programmer, it's internal to the
23 hardware of the machine.

24 Q. Just to understand, what would
25 actually be available to the programmer?

1 A. The condition code in the PSW.

2 Q. Even in the IBM/390 architecture the
3 condition code implemented as two bits in the
4 PSW?

5 A. That's the architecture of the 360,
6 370, 390.

7 Q. So when Loderer talks about the
8 special hardware, is he referring to the PSW as
9 an example?

10 A. I don't know.

11 Q. So let's turn to page 4 of Loderer.

12 A. After this question, I'd like a break
13 if that's okay.

14 Q. No, that's fair. Actually, there's
15 no question pending, so let's take a break now.

16 A. Thanks.

17 Q. Ten minutes, 15, Mr. Jestice, how
18 much would you like?

19 A. That's fine, yeah.

20 (Off the record.)

21 BY MR. KONSTANTAKOPOULOS:

22 Q. Welcome back, Mr. Jestice.

23 During the break, did you talk to
24 counsel?

25 A. I did, yes.

1 Q. What did you talk about?

2 A. Lunch, I think. Nothing to do with
3 the case.

4 Q. Let's go back to Exhibit 1005, that's
5 the Loderer reference.

6 Do you see on page 4, the left
7 column, column five, the first full sentence?

8 A. The first full sentence?

9 Q. Right. I will read. "The figures,
10 FIG 2, and FIG 3, and FIG 4, refer to a specific
11 exemplary embodiment in which an IBM/390
12 computer system is selected as source hardware
13 M1."

14 Do you see that?

15 A. On which column?

16 Q. On page 4, column five, the left
17 column.

18 A. Which paragraph?

19 Q. The first full paragraph.

20 A. Okay.

21 Q. Take your time to read this
22 paragraph.

23 A. Yes. Okay, I've read that.

24 Q. So in the context of the IBM/390
25 system selected as a source hardware, do you

1 have that in mind?

2 A. Yes.

3 Q. Let's go back to page 3 on column
4 four, the last sentence.

5 A. Yes.

6 Q. So when Loderer talks about the
7 condition code CC typically implemented as
8 special hardware, does it refer to the PSW in
9 the IBM/390 computer system?

10 A. Well, I don't think that Loderer
11 would care about the hardware implementation.
12 He or she would only be interested in from a
13 programming standpoint where the branch is
14 taking place. The branch would be based on the
15 condition code.

16 There is actually in the PSW, in actual
17 hardware implementation, would probably not be read
18 from the PSW itself.

19 Q. Are you saying in the PSW there's an
20 actual hardware implementation? What do you
21 mean a hardware implementation in the PSW?

22 A. If that's what I said, that was not
23 correct. The hardware of the mainframe is going
24 to have bits that indicate the various
25 conditions of the compare.

1 From a programming
2 standpoint --

3 Q. Go ahead. I'm sorry.

4 A. -- you would perform the compare
5 instructions generally followed by a branch on
6 condition which would be based on the previous
7 compare.

8 The condition code would be available in
9 the PSW. But the instruction branch on compare
10 doesn't say branch on compare on the contents of
11 the PSW, it just says branch on compare. So the
12 actual implementation may be taken from hardware or
13 conceivably from the PSW.

14 Q. So when you said that the hardware of
15 the mainframe is going to have bits that
16 indicate the various conditions of the compare,
17 those are condition code bits, correct?

18 A. We are talking hardware
19 implementation of the -- of this architecture.
20 It's likely that they are individual bits that
21 are encoded into a condition code.

22 Q. So with regard to how Loderer uses
23 the term "condition code," condition code in
24 Loderer is implemented as hardware, so that's a
25 hardware structure; is that correct?

1 A. It would be a hardware structure,
2 yes.

3 Q. And Loderer specifically calls the
4 value of the condition code the CCW, correct?

5 A. Loderer calls it the CCW.

6 Q. And if you go to Figure 5. Excuse
7 me, if you go to page 4, column five, the second
8 paragraph, let me know when you are there and
9 once you've reviewed it.

10 A. Second paragraph.

11 Q. It starts with different comparison
12 instructions.

13 A. Okay, I've reread that paragraph.

14 Q. So the second sentence that starts,
15 "In accordance with a configuration of the
16 invention, bit values BM are respectfully
17 uniquely associated with the value CCW thus
18 specified when simulating the condition code."

19 Do you see that?

20 A. No, I think I must be in the wrong
21 place. You said page 4, column five, third
22 paragraph?

23 Q. The third paragraph, the second full
24 paragraph starting with different comparison
25 instructions.

1 A. Okay. Okay.

2 Q. And it was an exercise with Figure 2.
3 But let me read the second sentence of that
4 paragraph. "In accordance with a configuration
5 of the invention, bit values BM are respectively
6 uniquely associated with the value CCW thus
7 specified when simulating the condition code on
8 a target hardware."

9 Did I read that correctly?

10 A. Yes.

11 Q. So what Loderer describes is
12 associating the values, CCW of the condition
13 code to the bit values BM, correct?

14 A. No.

15 Q. Loderer describes that bit values BM
16 are respectively uniquely associated with the
17 values CCW, correct?

18 A. That's correct.

19 Q. Isn't the inverse true that the CCW
20 values are uniquely associated with the values
21 BM?

22 A. That they are associated with, that's
23 correct.

24 Q. Let me get the question one more
25 time. In Loderer the bit values BM are uniquely

1 associated with the values CCW in the condition
2 codes, correct?

3 A. That's correct.

4 Q. Okay. Please turn to Loderer at
5 Figure 1.

6 A. Okay.

7 Q. Do you see on the target architecture
8 the register REG?

9 A. Yes.

10 Q. This is a register that is available
11 in the architecture of the target hardware,
12 correct?

13 A. Correct.

14 Q. How does the target architecture
15 select a register to store the bit pattern BM?

16 A. Which register does it select?

17 Q. Correct.

18 A. It's possibly the architecture of the
19 MIPS processor is my understanding.

20 Q. My question is that the MIPS
21 architecture has available registers; am I
22 correct?

23 A. Yes.

24 Q. One of these registers is going to be
25 selected to store the bit pattern BM, correct?

1 A. Yes.

2 Q. My question relates to the manner of
3 this selection.

4 How does the target architecture select
5 a register among the available registers to store
6 the bit pattern BM?

7 A. It would be addressed by hardware.

8 Q. Can you elaborate?

9 A. Well, I haven't designed MIPS
10 processors. But if I was designing an Amdahl
11 processor, I would have a register that
12 contains -- in this case, it would be a
13 condition code, and I would address it with
14 multiple gates.

15 I don't really understand where you
16 are going with it.

17 Q. Do you mean that would be a dedicated
18 register?

19 A. Well, it may or may not be, but it
20 likely would be.

21 Q. Let's turn to Loderer, page 2.

22 A. Okay.

23 Q. The second paragraph on the right
24 column reads, "First mapping is defined which
25 uniquely associates its possible value of the

1 condition code on the source hardware with the
2 bit pattern on the target hardware."

3 Do you see that?

4 A. Yes.

5 Q. Loderer uses the term "condition code
6 on the source hardware," correct?

7 A. Yes.

8 Q. Loderer also uses the term "a bit
9 pattern on the target hardware," correct?

10 A. Yes.

11 Q. How is the condition code on the
12 source hardware different from the bit pattern
13 on the target hardware?

14 A. The bit pattern on the target
15 hardware has a single bit for each condition.
16 The condition code on the source architecture,
17 if it were run, has a condition code. Loderer
18 is describing it in coding the bit pattern, one
19 bit for each condition, into a condition code
20 that the target architecture -- or the source
21 architecture would have recognized.

22 Q. So you're saying because the bit
23 pattern in the target architecture uses a single
24 bit for its condition, Loderer chooses to call
25 it a bit pattern instead of a condition code?

1 A. It isn't a condition code. It's a
2 bit pattern.

3 Q. So please turn to Loderer page 2,
4 first column, fifth paragraph.

5 A. This is the one, "The objection [sic]
6 of the invention is therefore to specify..." Is
7 that how it starts?

8 Q. Correct, yes. Take your time to read
9 this paragraph.

10 A. Yes, I've read it.

11 Q. So let me read the paragraph for the
12 record.

13 "The object of the invention is
14 therefore to specify a method for simulating a
15 condition code when porting hardware-specific
16 program code from a source hardware to a target
17 hardware that is not providing for condition
18 code in which the above-mentioned disadvantages
19 are avoided."

20 Did I read that correctly?

21 A. Yes, you did.

22 Q. The invention described in Loderer
23 relates to simulating a condition code, correct?

24 MR. GRAY: Objection to form.

25 A. Yes. Well, simulating a condition

1 code and avoiding branch instructions.

2 BY MR. KONSTANTAKOPOULOS:

3 Q. Understood. I'm just passing the
4 paragraph. So to the next point.

5 The invention described in Loderer
6 relates to porting hardware-specific program
7 code from a source hardware to a target
8 hardware, correct?

9 A. Yes. It does port the instructions
10 from the source hardware to a target hardware,
11 that's correct.

12 Q. Right.

13 The invention described in Loderer
14 relates to a target hardware that is not
15 providing a condition code, correct?

16 A. That is not providing the same
17 condition code.

18 Q. Where does in that paragraph Loderer
19 talk about providing the same condition code?

20 A. Yeah. You're correct. It says that
21 it's not -- it's target hardware that is not
22 providing for a condition code.

23 Q. So Loderer talks about tab -- let me
24 rephrase that.

25 Loderer relates to a target hardware --

1 sorry, I'm confusing you.

2 So this paragraph talks about the object
3 of the invention, so let me try again

4 The invention described in Loderer
5 relates to a target hardware that is not providing
6 a condition code, correct?

7 A. That's correct.

8 Q. Can you please turn to Loderer at
9 page 2, column 1, second paragraph.

10 A. Yes.

11 Q. So the second paragraph of column 1
12 reads, "In particular, on mainframe systems
13 (e.g. VAX or IBM/390 mainframes) a special
14 hardware flag, known as condition code or and
15 usually comprising several bits, is often
16 implemented in the computer architecture."

17 Did I read that correctly?

18 A. You read that correctly.

19 Q. I just want to clarify. So the
20 special hardware flag, do you think that's what
21 Loderer was talking about when he was referring
22 to a special hardware display?

23 A. I mean, he's referring to flags that
24 are comprised of several bits.

25 Q. If you're done with your answer we

1 can move on.

2 A. Okay.

3 Q. Okay.

4 Now, can you turn to Exhibit 1001,
5 the '289 patent?

6 A. Okay.

7 Q. Can you please turn to claim 1 of the
8 '289 patent?

9 A. Okay.

10 Q. So claim 1 has different limitations.
11 I want to focus you on column 9, line 28.
12 That's the generating limitation. Let me know
13 once you've seen it.

14 A. Okay. I've seen it.

15 Q. Yeah, take your time to review it.

16 A. Okay.

17 Q. So the generating reads in part:
18 "Generating a sequence webs of target machine
19 instructions which together operate to derive an
20 encoding for a target machine condition code for
21 the computer instruction..."

22 Did I read this part correctly?

23 A. Yes.

24 Q. So do you see the term "a target
25 machine condition code"?

1 A. Yes.

2 Q. Also there's an another term that is
3 the encoding, right? "An encoding for a target
4 machine condition code," correct?

5 A. Correct.

6 Q. So claim 1 both requires a target
7 machine code condition code, and an encoding for
8 the target machine condition code, correct?

9 MR. GRAY: Objection, form.

10 A. It says "...to derive an encoding for
11 a target machine condition code..."

12 BY MR. KONSTANTAKOPOULOS:

13 Q. Correct. That's one term, and the
14 other term is "the target machine condition
15 code," correct?

16 A. I think that's what I just said, "the
17 encoding for a target machine condition code."

18 Q. Is your understanding that the target
19 machine code and the encoding of the target
20 machine condition code to be the same? Or two
21 different things?

22 A. The condition code is generated
23 separately from the encoding.

24 Q. In the generating limitation, it is
25 your opinion that the target machine condition

1 code is generated and then separately an
2 encoding for a target machine condition code is
3 generated, correct?

4 MR. GRAY: Object to form.

5 A. Not necessarily.

6 Q. Can you elaborate?

7 A. Well, going into the patent, the
8 patent doesn't say that they are derived
9 separately or together. It just says it has to
10 derive an encoding for a target machine code.

11 Q. I understand. It's because you said
12 that they're derived separately. That's why I
13 wanted to confirm.

14 A. Either way.

15 Q. Okay. Let me go back to my initial
16 question. Do you see the two terms? The first
17 term is "the target machine condition code" and
18 the second term is "an encoding for a target
19 machine condition code."

20 Do you see that?

21 MR. GRAY: Objection, form.

22 A. The line that you quoted says,
23 "generating a sequence of target machine
24 instructions which together operate to derive an
25 encoding for a target machine condition code..."

1 Is that what you are talking about?

2 BY MR. KONSTANTAKOPOULOS:

3 Q. Right. So let's focus on column 9,
4 line 29 and 30.

5 The terms in these two lines is "an
6 encoding for a target machine condition code."

7 Do you see that?

8 A. Yes.

9 Q. And then column 9, line 34 talks
10 about the "target machine condition code."

11 Do you see that?

12 A. Let me just read through that.

13 Okay, I see that.

14 Q. So one term in claim 1 on column 9,
15 lines 29, 30 is "an encoding for a target
16 machine condition code." And the second term in
17 claim 1, column 9, line 34 is "the target
18 machine condition code."

19 Do you see that?

20 A. I mean, the whole sentence is
21 possible -- it's to say that the possible
22 outcomes is the target machine code.

23 Q. Right. And do you see -- on
24 continuing on line 34, column 9, "and directly
25 calculates the target machine condition code."

1 Do you see that?

2 A. Which one was that?

3 Q. Column 9, lines 34 and 35.

4 A. Yeah, I see that.

5 Q. So let me summarize.

6 Claim 1 relates to -- let me
7 rephrase.

8 Claim 1 recites deriving and encoding
9 for a target machine condition code on column 9,
10 lines 29 and 30. And also recites directly
11 calculating the target machine condition code from
12 column 9, lines 34 and 35.

13 Do you see that?

14 A. Yes.

15 Q. Do you understand the encoding for a
16 target machine condition code to be different
17 from the target machine condition code?

18 A. The encoding of it is different, yes.

19 Q. Okay.

20 But can you tell me what in the prior
21 art did you map the claimed target machine
22 condition code?

23 A. So "Loderer's Figure 1 depicts a
24 sequence of target machine instructions that
25 derive an encoding for a target machine

1 condition code in register BM for the source
2 instruction An."

3 Q. What are you reading from?

4 A. From my declaration, paragraph 98.

5 Q. I actually asked you about a target
6 machine condition code, not the encoding. So
7 let's focus first on the target machine
8 condition code and then we will go to the
9 encoding. What in the prior art did you map the
10 claimed target machine condition code into?

11 A. In my report I don't explicitly say a
12 map of the target condition code, but the
13 condition codes are generated in this case by
14 the processor.

15 Q. How does the prior art disclose a
16 target machine condition code?

17 A. The processor itself has the
18 condition code as a result of an arithmetic
19 operation.

20 Q. Can you point me in Loderer what
21 would be the condition code?

22 A. I don't think that Loderer
23 specifically says this is the condition code.
24 It's going to be in the architecture of the MIPS
25 which those still in the art would understand.

1 Q. Where in your declaration do you
2 explain how does Loderer disclose the claim term
3 target machine condition code?

4 A. I think that I just answered that is
5 that the -- it's obvious that a processor that's
6 doing a compare operation is going to have a
7 condition code. Otherwise, the compare
8 operation wouldn't work.

9 Q. Respectfully we've seen MIPS
10 implementations where operations use other
11 functions than condition codes, right, comparing
12 branch instructions; is that correct?

13 A. If you are talking about the
14 condition code in terms of an IBM architecture,
15 you're correct. The bits will be set by a MIPS
16 processor as a result of the compare operation.
17 That's the only way it can work.

18 Q. In your declaration you present to
19 grounds, correct?

20 A. For which claim?

21 Q. Let's focus on claim 1.

22 A. Okay. Which element?

23 Q. Ground 1. Under ground 1 you present
24 your opinions under which claims 1, 4, 6, 10, 11
25 and 16 are obvious in view of Loderer, correct?

1 A. Each element is either -- it
2 discloses or renders obvious.

3 Q. You haven't provided a ground under
4 anticipation by Loderer, correct?

5 A. That's correct.

6 Q. Isn't it your opinion that Loderer
7 discloses its limitation of claim 1?

8 A. It's either discloses or is obvious.
9 Or suggests, I am sorry.

10 Q. But you haven't been offered an
11 opinion that Loderer anticipates claim 1,
12 correct?

13 A. That's correct.

14 Q. Okay. Let's focus on page 56 of your
15 declaration.

16 A. Okay.

17 Q. Do you see starting with claim
18 element 1D?

19 A. Yes.

20 Q. Claim element 1D reads, "Directly
21 calculates the target machine condition code
22 without using branch instructions that directly
23 calculating, comprising."

24 Did I read that correctly?

25 A. That's correct.

1 Q. And page 56 is where you describe
2 ground 1 in your list, correct?

3 A. Yes.

4 Q. So paragraphs 109 through 112 offer
5 your opinions and support as to how Loderer
6 either discloses or renders obvious claim
7 element 1D, correct?

8 A. That's what the paragraph does, yes.

9 Q. Can you point me to Loderer?

10 Let me rephrase. Can you point me in
11 Loderer where the target machine condition code
12 is.

13 A. In the calculation that is where
14 Loderer describes the command sequence that
15 calculates the target machine condition code
16 without using a branch.

17 Q. What is the target machine condition
18 code in Loderer?

19 A. It calculates the condition code for
20 the essentially the IBM condition code.

21 Q. I am talking about the target machine
22 condition code, right, IBM in Loderer is used as
23 the source architecture. Do you have that in
24 mind?

25 A. Yes. So Loderer takes --

1 Q. Now let's focus. Go ahead.

2 A. No, go ahead.

3 Q. So focusing on the target machine,
4 can you point me what in Loderer is the target
5 machine condition code?

6 A. PPM.

7 Q. Are you pointing to a specific
8 figure?

9 A. The Table 4 is the calculation, so
10 it's up to the condition code. Ultimately it
11 ends up in BM.

12 Q. Well, is the target machine condition
13 code BM?

14 A. It's a representation of it, yes.

15 Q. What do you mean a representation?

16 A. The target machine condition code
17 will end up in BM, so that is the target
18 condition code.

19 Q. So it is your opinion that the target
20 machine condition code in Loderer is the bit
21 pattern BM, correct?

22 A. Right.

23 Q. Now, let's focus on page 51 of your
24 declaration.

25 Do you have that?

1 A. Yes, I do.

2 Q. So do you see the heading for claim
3 element 1C?

4 A. Yes.

5 Q. So paragraphs 97 through 108 provide
6 your opinions and support as to how Loderer
7 discloses or renders obvious claim element 1C,
8 correct?

9 A. That's correct.

10 Q. Let me start reading claim element
11 1C. "Generating a sequence of target machine
12 instructions which together operate to derive
13 and encoding for a target machine condition
14 code."

15 Do you see that?

16 A. Yes.

17 Q. So what is the encoding for a target
18 machine condition code in Loderer?

19 A. So in paragraph 98 I'm saying in
20 Figure 1 depicts the sequence of target
21 instructions that derive an encoding for a
22 target machine condition code in register BM.

23 Q. Target encoding? Sorry, go ahead.

24 So then coding for a target machine
25 condition code is the value of BM?

1 A. That's what I said, yes.

2 Q. And that's for the record, this is
3 encoding, not coding. So let me give you the
4 question again.

5 The encoding for a target machine
6 condition code in Loderer is the value of BM,
7 correct?

8 A. Encoding, yes, that's correct.

9 Q. So can you go to the '289 Patent.

10 A. Okay.

11 Q. This is filed as Exhibit 1001,
12 correct?

13 A. Yes.

14 Q. Have you read the '289 Patent?

15 A. Yes.

16 Q. Do you understand the specification
17 of the '289 Patent?

18 A. Yes.

19 Q. Is there any word in the
20 specification that you do not recognize?

21 A. No, I don't believe so.

22 Q. Have you looked at the drawings of
23 the '289 Patent?

24 A. Have I?

25 Q. Yes, have you?

1 A. I have looked at them, yes.

2 Q. And do you understand the drawings of
3 the '289 Patent?

4 A. Yes.

5 Q. Have you read the claims of the '289
6 Patent?

7 A. Yes.

8 Q. Do you understand the claims of the
9 '289 Patent?

10 A. Yes.

11 Q. What is the '289 Patent about?

12 A. Well, I can go back to my report and
13 read you my analysis for the '289 Patent rather
14 than reinventing that.

15 Well, the '289 Patent relates to a
16 system that emulates the generation of condition
17 codes for instructions from the computer having
18 a first architecture on a computer having a
19 different architecture without using branch
20 instruction. That's pretty much what it's
21 about.

22 Q. Can you turn to paragraph 36.

23 A. Okay.

24 Q. So you're right. "The '289 Patent
25 specification explains that when one processor

1 is emulating another but does not use the same
2 condition codes, emulating the condition codes
3 adds considerable space and performance overhead
4 to the emulated instructions."

5 Did I read that correctly?

6 A. Correct.

7 Q. In paragraph 36 is the one processor
8 the target processor?

9 A. Can you say that again. Sorry.

10 Q. In paragraph 36 you use the term "one
11 processor." Do you see that?

12 A. Yes.

13 Q. Does the one processor in
14 paragraph 36 refer to the target processor?

15 A. If the target processor is coded to
16 emulate the source architecture.

17 Q. And then for the record, in
18 paragraph 36 there another refers to the source
19 processor, correct?

20 A. Yes, that's correct.

21 Q. And in paragraph 36 you are saying
22 that the target processor uses condition codes
23 that are not the same as the condition codes of
24 the source processor, correct?

25 MR. GRAY: Objection, form.

1 A. It says does not use the same
2 condition codes in paragraph 36.

3 BY MR. KONSTANTAKOPOULOS:

4 Q. So in the '289 patent, the target
5 processor uses different condition codes than
6 the source processor, correct?

7 A. Where are you referring to in '289?

8 Q. I'm referring to what you say in
9 paragraph 36.

10 A. Oh, it's paragraph 36. Yes, that's
11 correct.

12 MR. KONSTANTAKOPOULOS: Okay. Let's
13 take a quick break. And do you want to be
14 back at 10 to 12?

15 MR. GRAY: Let's go off the record
16 real quick, if we can.

17 MR. KONSTANTAKOPOULOS: Yes, thank
18 you.

19 (Off the record.)

20 MR. KONSTANTAKOPOULOS: Back on the
21 record.

22 BY MR. KONSTANTAKOPOULOS:

23 Q. Welcome back, Mr. Jestice.

24 Do you understand you are still under
25 oath?

1 A. Yes.

2 Q. Did you talk to counsel during the
3 break?

4 A. Yes, but not about the case.

5 Q. What did you talk about?

6 A. Supreme Court, divorce.

7 Q. Anything else?

8 A. Marriages. Weather.

9 Q. Okay. Let's go back to your
10 declaration, paragraph 38.

11 A. Okay.

12 Q. My question relates to the last
13 sentence of paragraph 38. But take your time to
14 review the entirety.

15 A. Okay.

16 Q. The last sentence reads "The '289
17 patent suggests using this technique to emulate
18 condition codes of a z/Architecture system on a
19 computer whose processor uses the Intel IA32
20 architecture or the PowerPC architecture."

21 Did I read that correctly?

22 A. That's what I said.

23 Q. So in the '289 Patent the source
24 architecture is the z/Architecture system,
25 correct?

1 A. That's correct.

2 Q. And the target architecture, the '289
3 patent provides two examples. One is the
4 PowerPC architecture, correct?

5 A. That's correct.

6 Q. And if I remember correctly, the
7 PowerPC architecture is something that you had
8 worked on, correct?

9 A. That's correct.

10 Q. Does the PowerPC architecture
11 implement condition codes?

12 A. Off of the top of my head, I can't
13 tell you.

14 Q. Okay.

15 What about the Intel IA32
16 architecture? Are you familiar with Intel's
17 architecture?

18 A. I'm familiar with Intel's
19 architecture, but off the top of my head I
20 couldn't tell you that answer.

21 Q. Okay.

22 Let's go back to Loderer and
23 Figure 4. Do you see in the second row command
24 ZC1? Do you see that?

25 A. Yes.

1 Q. That command sets the bit pattern BM
2 of a value of 0100, correct?

3 A. Yes.

4 Q. Then the third command, ZC2, do you
5 see that?

6 A. Yes.

7 Q. That command performs a shift
8 operation, the contents to that BM -- let me
9 rephrase.

10 Command ZC2 in Figure 4 performs a shift
11 to the bit pattern BM, correct?

12 A. ZC2 performs a shift operation to BM,
13 that's correct.

14 Q. BM is a binary value, correct?

15 A. You can express it as binary.

16 Q. How does Loderer express BM?

17 A. Bit pattern.

18 Q. Does Loderer express BM as binary?

19 A. I'd have to search through it and
20 see.

21 MR. GRAY: 3550.

22 A. Binary doesn't appear to exist in
23 Loderer.

24 Q. Let me point you to your paragraph
25 56.

1 A. Can you say that again?

2 Q. Yes. Can you please turn to
3 paragraph 56 of your declaration?

4 A. Okay.

5 Q. All right. Can you go to page 26?

6 A. Okay.

7 Q. Let me read from the first full
8 sentence on page 26. "In the example
9 illustrated below in Loderer's Figure 4, the
10 first subsection, ZC1 operates to set a register,
11 the second and third subsections, ZC2 and ZC3
12 operate to shift the value in a register by a
13 number of bits specified by another register."

14 Did I read that correctly?

15 A. Yes.

16 Q. Has that informed your opinion as to
17 whether BM is a binary value or not?

18 A. I didn't use the word "binary."

19 Q. I understand that. I'm just asking
20 whether, based on your understanding, BM is a
21 binary value or not.

22 A. You can express it as a binary value,
23 certainly.

24 Q. What else can you express it as?

25 A. It can express as bits, octal,

1 hexadecimal, pretty much any way of expressing a
2 number you can look at it.

3 Q. If it's a number, BM corresponds to a
4 number, correct?

5 MR. GRAY: Objection, form.

6 A. BM is a bit pattern.

7 BY MR. KONSTANTAKOPOULOS:

8 Q. That can be expressed in a binary
9 form, correct?

10 A. I mean, a human can represent a bit
11 pattern as a binary number, or a hexadecimal
12 number, or an octal number.

13 Q. But the bit pattern in Loderer stays
14 as a number. It can be expressed in many
15 different ways, but the underlying nature of the
16 bit pattern is a number, correct?

17 A. It's a bit pattern.

18 Q. Can bit patterns represent numbers?

19 A. As I said, you can express a bit
20 pattern as a number. I guess it would depend on
21 how you were planning to use it.

22 Q. I 'm trying to understand what a bit
23 pattern represents. What does a bit pattern
24 represent?

25 A. Normally a bit pattern would express

1 a bit for a particular event or edition.

2 Q. Okay.

3 Let's go to your declaration. And
4 arrive at ground 2; is that okay?

5 A. Okay. Yes.

6 Q. If you can turn to page 77 of your
7 declaration.

8 A. Which page? I'm sorry.

9 Q. 77, starting on paragraph 139.

10 A. Yes.

11 Q. Starting on page 77 and
12 paragraph 139, all the way to paragraph 2 or 3,
13 you offer your opinion and support as to how
14 under ground 2, the prior art references rather
15 obvious challenged claims, correct?

16 A. Obvious in view of the principle of
17 operations in Kane and a person of skill in the
18 art.

19 Q. And Loderer, correct?

20 A. And Loderer, yes.

21 Q. Can you point me in your analysis of
22 ground 2 where you address claim limitations
23 1[c] and 1[d]?

24 A. In my report I just claimed C --
25 claim 1 in paragraph C, page 7 -- paragraph 176.

1 Q. In where do you explicitly address
2 1[c] and 1[d]?

3 A. In this section I did not explicitly
4 reference 1[c] and 1[d].

5 Q. Are you referring back to your
6 analysis in ground 1 for these two limitations?

7 A. Yeah. It says in paragraph 176, to
8 include the same is code sequence in analyzing j
9 ground 1.

10 Q. I'm asking because there might be a
11 typographical error. Section X refers to ground
12 2, did you intend to point to IX?

13 MR. GRAY: Object to the form.

14 A. That's referring back to the reasons
15 to combine on 77.

16 Are you talking about paragraph 176?

17 Q. Let me ask you. So paragraph 176,
18 you point to IX.B; is that correct?

19 A. At the end?

20 Q. Like the end of paragraph of 176.

21 A. Yeah. It does say at least for the
22 reasons in IX.B.

23 Q. Okay.

24 So you haven't specifically analyzed
25 limitations 1[c] and 1[d]. I'm just asking

1 whether you're relying on the reasons you
2 provided in connection with ground 1 for both
3 limitations, correct?

4 MR. GRAY: Objection, form.

5 A. So that sentence says, it's "obvious
6 for at least the reasons described in ground 1."
7 And it refers back to one IX.B. So it would be
8 obvious for the reasons in ground 1.

9 MR. KONSTANTAKOPOULOS: Okay. That's
10 all the questions I have for now. Thank
11 you, Mr. Jestice.

12 MR. GRAY: All right. Let's take
13 about a ten-minute break, if we can.

14 MR. KONSTANTAKOPOULOS: Sounds good.
15 (Brief recess had.)

16 CROSS-EXAMINATION

17 BY MR. GRAY:

18 Q. Good afternoon, Mr. Jestice. I just
19 have a few follow-up questions.

20 A. Okay.

21 Q. First, could you turn in your report,
22 please, to the third page, Exhibit 1003-3.

23 A. What page of my report?

24 Q. Right after the table of contents --
25 or part of the table of contents. I'm sorry.

1 A. Okay.

2 Q. Do you see claim element 1[c]? It's
3 on page ii.

4 A. Which element? Sorry.

5 Q. Previous page. Looking at claim
6 element 1[c] on the previous page.

7 A. Yes.

8 Q. Okay.

9 Claim element 1[c] reads, "Generating
10 a sequence of target machine instructions which
11 together operate to derive an encoding for a
12 target machine condition code for a computer
13 instruction, wherein the sequence of target
14 machine instructions provides distinguishing
15 information to distinguish between a plurality
16 of possible outcomes for the target machine
17 condition code."

18 Do you see that?

19 A. Yes.

20 Q. And the table of contents says that
21 you address that element in ground 1 beginning
22 on page 51, is that right?

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

24 Q. Okay.

25 And if you turn to page 56 near the

1 end of the section on claim element 1[c], I'd
2 like you to take a look at paragraph 106.

3 Please tell me when you've had a
4 chance to review that.

5 A. I've reviewed it.

6 Q. So in ground 1 what do you identify
7 as Loderer disclosing as distinguishing
8 information of the claims?

9 A. T1 and T2.

10 Q. Thank you. Now if we turn to ground
11 2 in Section 10B, that begins on page 86.
12 Please let me know when you are there.

13 A. Okay.

14 Q. Can you briefly explain how ground 2
15 modifies Loderer?

16 MR. KONSTANTAKOPOULOS: Objection,
17 scope.

18 A. Can you say that question again.

19 BY MR. GRAY:

20 Q. Just at a high level, what is
21 different between ground 1 and ground 2?

22 A. In which paragraph are you referring
23 to?

24 Q. I am turning to page 86, Section 10B.
25 I can ask this a different way.

1 In section 10B-1 on page 86, are you
2 there?

3 A. I think so. On page 86, my report.
4 Okay. 152, 153.

5 Q. Yes paragraph 153.

6 A. Okay.

7 Q. So paragraph 153 states, "As
8 explained in Section 7A and ground 1 above,
9 Loderer discloses a sequence of instructions
10 that calculate the condition code for a compare
11 instruction which principles of operation
12 discloses results in the same condition codes
13 for the non-overflow case of an ADD
14 instruction."

15 Do you see that?

16 A. I see that.

17 BY MR. GRAY:

18 Q. So in a non-overflow case does the
19 ADD instruction result in correct condition
20 codes using the sequence of instructions for
21 Loderer?

22 A. Yes.

23 Q. If we turn to the following page,
24 there's a sentence that begins, "In the event
25 that an ADD does not overflow, the Loderer

1 instructions above would correctly calculate the
2 condition codes for the ADD instruction."

3 Do you see that?

4 A. Yes.

5 Q. And that's what you just said, right?

6 A. Yes.

7 Q. And then if we turn to paragraph 154
8 you are discussing the overflow event, correct?

9 A. Correct.

10 Q. And does Loderer disclose how to
11 calculate the condition code for the ADD
12 instruction in the event of an overflow?

13 MR. KONSTANTAKOPOULOS: Objection,
14 scope of redirect.

15 A. Loderer discloses a technique for the
16 conditions in the register without branching and
17 adjusting the value of the condition code.

18 BY MR. GRAY:

19 Q. And in ground 2 are you discussing
20 how Loderer would address the ADD instruction
21 using a similar sequence?

22 A. Yes.

23 MR. KONSTANTAKOPOULOS: Objection.

24 BY MR. GRAY:

25 Q. If you look at page 101 of your

1 declaration. Tell me when you are there,
2 please.

3 A. Okay.

4 Q. In paragraph 173 you discuss the
5 overflow case, correct?

6 A. Yes.

7 Q. And about halfway down that paragraph
8 there's a sentence that begins, "It would have
9 been obvious to a person of ordinary skill in
10 the art."

11 Do you see that?

12 A. Yes.

13 Q. And so it says, "It would have been
14 obvious to a person of ordinary skill in the art
15 to employ the same approach to selectively shift
16 BM to apply the distinguishing information t3 in
17 the overflow case."

18 Do you see that?

19 A. Yes.

20 Q. Now, in this paragraph you're
21 identifying a third type of information, t3,
22 that you did not discuss in ground 1, correct?

23 A. That's correct.

24 Q. And if we look at the top of page 101
25 there appears to be a modified figure from

1 Loderer.

2 Do you see that?

3 A. Yes.

4 Q. And that's a modification of Loderer
5 Figure 4?

6 A. Yes.

7 Q. And do you have Loderer near you?

8 A. Yes.

9 Q. So on page 101 of your declaration,
10 is the top half of that modified figure directly
11 from Loderer?

12 A. It's directly from Loderer, yes, and
13 then the instructions were added onto that.

14 Q. Which instructions did you add as
15 part of ground 2?

16 MR. KONSTANTAKOPOULOS: Objection,
17 form.

18 A. So Loderer provides five
19 instructions, and then the sixth and eighth,
20 ninth instructions are added.

21 BY MR. GRAY:

22 Q. Why are those instructions added in
23 ground 2?

24 A. For the overflow case.

25 Q. If we turn to paragraph 178 of your

1 report, please read that to yourself.

2 Okay.

3 Q. What is -- what opinion are you
4 offering in 178 regarding overflow case?

5 A. This is the third distinguishing
6 information generated by that code sequence.

7 Q. And you identify claim limitations
8 1[c] and 1[d] in your opinions as to the
9 overflow case regarding that?

10 A. Yes.

11 Q. Those limitations?

12 A. Yes.

13 Q. That's at least paragraph 178?

14 A. 178, yes.

15 Q. And do you discuss the overflow case
16 in your modification to Loderer throughout your
17 analysis of ground 2?

18 A. Yes.

19 Q. If we look at Loderer Figure 4, which
20 I believe you have in front of you, does
21 Figure 4 use an actual programming language to
22 describe the sequence of instructions?

23 A. It's pseudocode.

24 Q. Okay. It's pseudocode? What is
25 pseudocode?

1 A. It's a way that program is used to
2 represent programs. It's going down to similar.

3 Q. If a programmer were to write the
4 sequence of instructions in assembly code, how
5 would registers then be assigned such as for T1
6 or T2?

7 MR. KONSTANTAKOPOULOS: Objection,
8 scope.

9 A. I don't understand what you mean, how
10 they would be assigned.

11 BY MR. GRAY:

12 Q. If the programmer is writing assembly
13 code, would the programmer be able to assign the
14 registers or would the hardware assign the
15 registers?

16 A. The program would be able to assign
17 the registers.

18 Q. Is that true for T1 and T2?

19 A. T1 and T2.

20 Q. Is that also true for BM?

21 MR. KONSTANTAKOPOULOS: Objection.

22 A. Yes.

23 BY MR. GRAY:

24 Q. So earlier you were asked questions
25 about how the architecture would assign

1 registers, but is it your testimony that if a
2 programmer were writing assembly code, the
3 programmer would be able to assign those
4 registers?

5 A. Yes.

6 Q. Now I'd like to turn to the Kane
7 Exhibit which I believe was 1009.

8 A. Okay.

9 Q. You were asking questions about
10 whether you had reviewed this Exhibit earlier,
11 correct?

12 A. That's correct.

13 Q. And you testified that you in fact
14 found this reference?

15 A. That's correct.

16 Q. And in preparation of your
17 declaration in this proceeding, did you review
18 this Kane Exhibit?

19 A. Yes.

20 Q. And in your declaration you cite this
21 Kane Exhibit, correct?

22 A. Yes.

23 Q. Will you please take a look -- you
24 can look at the electronic version if I'd like
25 at the number of times that you've cited

1 Exhibit 1009. Just to get that in mind for my
2 next question.

3 A. What was the number?

4 Q. 3550.

5 A. So are you asking me, how many times
6 I referenced Kane?

7 Q. Yes.

8 A. It looks like I can't search on that
9 one. Okay.

10 Q. About how many search hits are you
11 seeing?

12 A. 21.

13 Q. 21. Did you review all pages of Kane
14 that are cited in your declaration before you
15 signed your declaration?

16 A. Yes.

17 Q. And in turning back to your
18 declaration, I'd like to turn to page 103 in
19 paragraph 177.

20 Are you there?

21 A. Yes.

22 Q. And in paragraph 177 you say in the
23 first sentence, "The modification of Loderer
24 detailed in Section 10B above includes a third
25 example of distinguishing information, namely

1 the overflow codes stored in register t3."

2 Do you see that?

3 A. Yes.

4 Q. And we discussed that a few minutes
5 ago, right?

6 A. Yes.

7 Q. And then if you drop to the last
8 sentence of paragraph 77, it says, "For the
9 non-overflow case the remaining limitations of
10 claim 1 are also satisfied in the manner
11 described in ground 1.

12 Do you see that?

13 A. Yes.

14 Q. So is it fair to say that in the
15 non-overflow case your analysis of ground 2
16 relies on your analysis from ground 1?

17 A. Yes.

18 Q. And in the last sentence says "in the
19 overflow case additional distinguishing
20 information is used as described below."

21 Do you see that?

22 A. Yes.

23 Q. And then in paragraph 178, are you
24 providing additional opinions as to limitations
25 1[c] and 1[d] relative to ground 1?

1 A. Yes.

2 Q. And then in paragraph 178, you also
3 address element 1[e], correct?

4 A. Yes, we are ending at 1[e], obvious.

5 Q. And which limitation do you address
6 in paragraph 179 for the overflow case?

7 A. 1[f].

8 Q. Can you turn to page 38 of your
9 declaration, please? Paragraph 76.

10 A. Okay.

11 Q. About halfway down the paragraph
12 there's a sentence that begins "a person of
13 ordinary skill in the art would recognize..."

14 A. Yes.

15 Q. That sentence says, "A person of
16 ordinary skill in the art would recognize that
17 there could be different ways to encode the
18 condition code, such as a two-bit binary
19 representation, a four-bit bit map or others."

20 Do you see that statement?

21 A. Yes.

22 Q. What type of encoding does Loderer
23 disclose?

24 A. It's comparing a bit map to a
25 condition code.

1 Q. So is the encoding stored in BM a
2 four-bit bit map?

3 A. Yes. Also known as a two-bit binary.

4 Q. If we go back one more time to
5 page 101 of your declaration.

6 A. Okay.

7 Q. If we look at the figure at the top
8 of page 101 for the instructions that you've
9 added as part of your analysis of ground 2, what
10 do those instructions do?

11 A. They shift, based on t3.

12 Q. And why are there shifts based on t3?
13 What is that accomplishing?

14 A. T3 is the distinguishing information.

15 Q. So is t3 allowing the system to
16 distinguish among different outcomes?

17 A. Yes, because the shift could be
18 different depending on the content of t3.

19 MR. GRAY: Let's go off the record
20 for about two minutes. Is that okay?

21 MR. KONSTANTAKOPOULOS: Sure.

22 (Off the record.)

23 THE WITNESS: I've unmuted.

24 MR. GRAY: Okay. We can go back on.

25 BY MR. GRAY:

1 Q. Mr. Jestice, earlier I believe you
2 testified that the target machine condition code
3 in Loderer is the value stored in BM; is that
4 accurate?

5 A. Yes.

6 Q. I believe you also testified that an
7 encoding of the target machine condition code
8 was also the value stored in BM; is that right?

9 A. Yeah, if you say so, yes.

10 Q. All right.

11 Well, what kind of encoding is the
12 value stored in BM?

13 A. It's a bit map.

14 Q. And is the bit map stored in BM a
15 representation of the target machine condition
16 code?

17 A. A representation of it?

18 Q. Yes.

19 A. Meaning that they map to each other?

20 Q. What maps to each other?

21 A. The bits in BM match with the
22 condition code of the target BM's source code.
23 Are you asking about the source code, source
24 machine?

25 Q. I was asking about the target machine

1 condition code.

2 A. So the bit map contains the results
3 of the arithmetic operation.

4 Q. So the bit map stored in BM is a
5 representation of the condition code from the
6 source machine?

7 A. From the target machine.

8 Q. Target machine. Okay.

9 MR. GRAY: Thank you. I pass the
10 witness.

11 MR. KONSTANTAKOPOULOS: Just a few
12 more questions.

13 REDIRECT EXAMINATION

14 BY MR. KONSTANTAKOPOULOS:

15 Q. Mr. Jestice, during the two breaks
16 after I finished my original examination, did
17 you talk to counsel?

18 A. No.

19 Q. Can you please turn to page 38 of
20 your declaration, paragraph 76?

21 A. Okay.

22 Q. Counsel had read you a sentence on
23 page 38, halfway through the paragraph. "A POSA
24 would recognize that there could be different
25 ways to encode the condition code such as

1 two-way binary representation, a four-bit bit
2 map or others."

3 Do you see that?

4 A. Yes.

5 Q. And the last sentence of paragraph 76
6 reads, "It would have been obvious to a POSA to
7 encode the CCW in this manner..."

8 Do you see that?

9 A. Yes.

10 Q. "In this manner," refers to the
11 binary representation that you referenced
12 earlier in the paragraph?

13 A. Yes, that's true.

14 Q. And "the CCW," refers to the source
15 code condition code; is that correct?

16 A. That's correct.

17 Q. And again, on page 38, the second
18 sentence of that paragraph reads, "Loderer
19 encodes the condition codes and the values of
20 registered BM on the target machine with BM=1000
21 for CCW=0..."

22 Do you see that?

23 A. Yes.

24 Q. Loderer encodes condition codes of
25 the source architecture, correct?

1 A. That's correct.

2 MR. KONSTANTAKOPOULOS: No further
3 questions.

4 MR. GRAY: One followup on the last
5 question.

6 RECROSS-EXAMINATION

7 BY MR. GRAY:

8 Q. So Loderer is encoding in register BM
9 a representation of the condition code for the
10 program being emulated; is that right?

11 A. It's a representation of the
12 condition codes for the -- for the target
13 machine for the source code machine.

14 MR. GRAY: Thank you.

15 No further questions here.

16 Theo?

17 MR. KONSTANTAKOPOULOS: Thank you,
18 Mr. Jestice. Thank you. We appreciate
19 your time.

20 (Concluded at 2:19 p.m.)

21

22

23

24

25

CERTIFICATE OF OATH

STATE OF FLORIDA)

COUNTY OF LEE)

I, the undersigned authority, certify
that Ian Jestice personally appeared before me and
was duly sworn.

WITNESS my hand and official seal this
19th day of September, 2023.



Donna Dratwa

Notary Public - State of Florida

Commission Number HH342823

Expires December 19, 2026

REPORTER'S DEPOSITION CERTIFICATE

STATE OF FLORIDA)

COUNTY OF LEE)

I, Donna Dratwa, Certified Realtime Reporter, Registered Merit Reporter, and Notary Public in and for the State of Florida at Large, certify that I was authorized to and did stenographically report the deposition of Ian Jestice, that a review of the transcript was requested, and that the transcript is a true and complete record of my stenographic notes.

I further certify that I am not a relative, employee, attorney, or counsel of any of the parties; nor am I a relative or employee of any of the parties' attorney or counsel connected with the action; nor am I financially interested in the action.

DATED this 19th day of September, 2023.



Donna Dratwa, RMR, CRR

&	1-4 15:4,6,7	10169 2:17	154 116:7
& 25:14,18	10 44:18 96:24 104:14	1018 9:17	16 12:10 20:9 20:12 43:4 96:25
0	100 18:9 46:16 72:24	1024 39:1,9,12 39:15,17,25 43:8 44:16	1650 2:5,12
0 66:22 75:15 75:19 128:21	1000 72:1,3,14 72:20 128:20	1025 16:23	17 17:21
0,1 64:2	1001 10:21 33:11 90:4 101:11	103 122:18	173 117:4
0010 75:1,3	1002 10:21 25:2 30:2 36:13	106 114:2	176 110:25 111:7,16,17,20
0100 74:9,12 107:2	1003 10:22 12:17,18 19:6	108 100:5	177 122:19,22
1	1003-3 112:22	109 98:4	178 118:25 119:4,13,14 123:23 124:2
1 25:9 44:18,23 69:25 71:18,21 71:24 73:9,11 73:15,18,24,25 74:3,5,6,7,9,14 74:20,24 84:5 89:9,11 90:7 90:10 91:6 93:14,17 94:6 94:8,23 96:21 96:23,23,24 97:7,11 98:2 100:20 110:23 110:23,25 111:2,2,4,4,6,9 111:25,25 112:2,6,8 113:2,6,9,21 114:1,6,21 115:1,8 117:22 119:8,8 123:10 123:11,16,25 123:25,25 124:3,4,7	1005 66:17,20 67:5,23,25 68:2,5 79:4	10b 114:11,24 115:1 122:24	179 124:6
	1008 56:8,14 57:24 59:13,15 59:18,20,23 60:9 61:18	11 96:24	18 6:21 63:23 64:19 65:5 66:1
	1009 16:15 46:20 47:1,3,9 47:12,15,17,21 48:5,10,14,17 50:5 54:4 55:1 55:6,25 56:5 121:7 122:1	11/28/2022 13:21	1800s 26:15
	101 116:25 117:24 118:9 125:5,8	1102 9:11	19 63:23 64:19 65:6 66:2 130:19
	1014 9:15	112 3:4 98:4	1968 29:11
		115 63:9	1971 25:22
		116 63:3,5,5,6 63:16	1984 33:6
		117 13:9	1990 30:8
		12 104:14	1994 33:7 35:15,24 36:4 36:14
		127 3:5	1996 36:14
		129 3:6	19th 130:12 131:19
		13 1:16 35:20	1c 100:3,7,11
		131 3:9	1d 97:18,20 98:7
		139 110:9,12	
		14 15:2,4,11 25:9 30:2 31:21	
		15 78:17	
		1508 2:8	
		152 115:4	
		153 115:4,5,7	

2	28 90:11	103:21 104:2,9	43 50:6
2 38:10 54:4,5	289 9:7 11:12	104:10	45 52:7
60:10,11 64:3	11:17,19 15:12	360 16:24	45chris.ryan
68:23 69:1,6	21:10 31:18,25	37:23 69:15	2:9
69:13 70:13,15	32:5,8,20	78:5	49 48:4,13 60:8
71:15,16,19,21	33:12,16,19	370 33:1,2	60:11
71:25 73:6,9	35:17,22 90:5	37:24 44:6	5
73:13,16,19,24	90:8 101:9,14	57:2,5,7,13	5 3:3 15:9
74:4,7,20,22,25	101:17,23	69:15 78:6	17:12 82:6
75:5 79:10	102:3,5,9,11,13	38 105:10,13	51 60:19,21,25
83:2 85:21	102:15,24	124:8 127:19	61:17,21,25
87:3 89:9	104:4,7 105:16	127:23 128:17	62:9 99:23
110:4,12,14,22	105:23 106:2	390 37:24	113:22
111:12 114:11	29 93:4,15	56:16 57:5,9	512-402-3550
114:14,21	94:10	57:13 60:2,4,6	2:6,13
116:19 118:15	29975 130:15	61:7 69:3,15	52 61:17 62:3,9
118:23 119:17	131:22	70:17 72:16	56 97:14 98:1
123:15 125:9	2:19 1:17	78:2,6 79:11	107:25 108:3
2-1 60:14	129:20	79:24 80:9	113:25
2-7 40:4	3	89:13	6
20 132:22	3 36:12 64:3	390s 57:7	6 16:12,15 17:3
2000 55:11	75:20,25 79:10	4	17:6,12 68:24
2007 35:18,24	80:3 110:12	4 15:5 25:9	70:13 96:24
36:4	30 93:4,15	40:1,2 43:7	68,000 37:11,19
2010 55:11	94:10	44:16 78:11	7
2023 1:16	3010 55:11	79:6,10,16	7 16:15 17:3,6
130:12 131:19	31 20:10,12	82:7,21 96:24	110:25
2026 130:19	34 93:9,17,24	99:9 106:23	76 124:9
21 122:12,13	94:3,12	107:10 108:9	127:20 128:5
212-351-3400	35 55:16 94:3	118:5 119:19	77 110:6,9,11
2:18	94:12	119:21	111:15 123:8
230 2:17	3550 107:21	4-2 63:14	78701 2:5,9,12
256 66:22	122:4	401 2:4,11	7a 115:8
26 108:5,8	36 102:22	41 17:24	
	103:7,10,14,18		

8	accent 22:20	added 49:5	36:12 57:10,14
8,713,289 1:6	access 10:17	118:13,20,22	57:21 85:10
11:9	43:5 62:5	125:9	american 28:8
843 66:22	accessible	additional	analysis 102:13
86 114:11,24	77:11,16	18:25 28:15,15	110:21 111:6
115:1,3	accomplishing	28:18 123:19	119:17 123:15
864 9:9	125:13	123:24	123:16 125:9
9	accordance	address 6:1	analyzed
9 90:11 93:3,9	82:15 83:4	61:2,14 65:12	111:24
93:14,17,24	accurate 6:14	66:2 85:13	analyzing
94:3,9,12	18:10 23:6	110:22 111:1	111:8
9/13/2023	126:4	113:21 116:20	angeles 32:11
132:3	acknowledge	124:3,5	annotation
90 23:25 24:4	21:20	addressed 85:7	18:4
97 100:5	acrobat 58:7	adds 103:3	annotations
98 95:4 100:19	acronym 69:16	adjusting	18:1
980 9:9	70:24	116:17	answer 8:8,8
9:06 1:17	acronyms 70:9	admission	27:13 31:16
a	71:14	26:10,11	32:21 33:5
a.m. 1:17	action 131:17	adopted 26:22	36:23 46:4,11
a2 66:22	131:18	affirm 5:4	77:2 89:25
ability 24:21	actual 24:21	afternoon	106:20
able 46:19	80:16,20 81:12	112:18	answer's 65:8
120:13,16	119:21	ago 29:7 123:5	answered
121:3	actually 9:10	agreed 4:5	19:24 22:17,24
above 87:18	13:19 33:11	ahead 13:12	75:8 96:4
115:8 116:1	37:25 66:20	81:3 99:1,2	answering 7:6
122:24	76:16 77:25	100:23	anticipates
absolutely 7:16	78:14 80:16	allowed 30:14	21:9 97:11
abstract 69:25	95:5	allowing	anticipation
71:10	add 47:12 48:9	125:15	20:18,21,25
academic 50:3	48:16 49:5	alu 44:10	21:4,5,6 23:1
accelerator	115:13,19,25	amdahl 33:6	97:4
54:13	116:2,11,20	34:2,6,15	apologize 53:5
	118:14	35:12,14,21	

appeal 1:1 appear 107:22 appeared 130:8 appearing 2:2 2:15 appears 117:25 application 9:18 applied 20:14 apply 27:8 54:21 55:7 117:16 appreciate 29:8 54:24 129:18 approach 51:14 117:15 approaches 46:1 approximately 6:20 12:5 13:17 architecture 9:15 29:19 33:1,2,20 37:24 42:20 43:3 44:17 45:1,7 48:18 48:19 49:1,4 49:13,15,23 50:1,9,14,18 52:15,24 53:7 53:13,21 54:10 54:12,14,19 55:1,2,7,8,25 56:4 57:2,9,13	60:2,5 69:20 71:19,22 72:1 72:4,6,15,25 73:1,10,25 74:5,8,13,14,21 75:1,4,5,13,16 75:18 76:4,6 76:22 77:5,8 78:2,5 81:19 84:7,11,14,18 84:21 85:4 86:16,20,21,23 89:16 95:24 96:14 98:23 102:18,19 103:16 105:18 105:20,20,24 105:24 106:2,4 106:7,10,16,17 106:19 120:25 128:25 architectures 44:9,22 50:4 57:5 arithmetic 29:24 42:15,19 52:11,17 53:1 53:9,18,22 55:20 56:2 62:23 65:4 77:8 95:18 127:3 arrive 110:4 art 15:15 16:5 16:18 21:13,21	22:1,5,22 23:4 23:9,11,16 24:6 35:17 94:21 95:9,15 95:25 110:14 110:18 117:10 117:14 124:13 124:16 article 51:25 asked 15:12,19 23:2 35:10 95:5 120:24 asking 16:18 26:8,9 40:25 41:18 42:7 72:11 108:19 111:10,25 121:9 122:5 126:23,25 aspects 31:4 assembly 120:4 120:12 121:2 assign 120:13 120:14,16,25 121:3 assigned 120:5 120:10 associated 82:17 83:6,16 83:20,22 84:1 associates 70:3 85:25 associating 83:12	assume 17:6,12 attend 25:17 29:1 attended 27:6 attorney 131:14,16 austin 2:5,9,12 5:21 12:4 authored 30:6 authority 130:7 authorized 131:8 automated 30:21 automating 30:17 automator 30:9 30:11,13,20,23 30:24 31:2,6 available 46:16 46:19 56:8 61:9 62:23 66:16 77:22,25 81:8 84:10,21 85:5 avenue 2:4,11 2:17 avoided 87:19 avoiding 88:1 award 27:22 awarded 28:1 31:22 aware 7:23
---	---	--	---

b	26:15 28:21	110:1 124:18	bm's 126:22
bachelor's	45:5 46:19	124:19,19,24	board 1:1
27:22,25	50:23 53:15	125:2,2,3	book 48:3,18
back 10:16	62:21 101:21	126:13,14	52:1 54:11,20
14:3,17 21:2,3	119:20 121:7	127:2,4 128:1	55:9 56:3
28:20 35:1	126:1,6	128:1	bottom 13:1
55:16 70:13	benefits 51:22	bits 45:20,21	bought 38:7
78:22 79:4	best 33:25	50:11,15 63:13	box 37:11
80:3 92:15	34:11	63:23,23 64:8	58:18
102:12 104:14	binary 107:14	64:19,25 65:2	branch 33:21
104:20,23	107:15,18,22	65:5,15,23	34:12 42:15
105:9 106:22	108:17,18,21	66:1,1 78:3	43:14,24 44:19
111:5,14 112:7	108:22 109:8	80:24 81:15,17	44:24 45:7,9
122:17 125:4	109:11 124:18	81:20 89:15,24	45:11,17,22
125:24	125:3 128:1,11	96:15 108:13	46:5,12 64:15
based 42:16	bios 49:24	108:25 126:21	80:13,14 81:5
48:20 64:15	bit 37:22,25	bm 71:2,5,9,11	81:9,10,11
80:14 81:6	38:1 44:7	71:25 72:20	88:1 96:12
108:20 125:11	52:10,16,25	74:8,25 82:16	97:22 98:16
125:12	53:8,17,21	83:5,13,15,21	102:19
basic 29:20,22	55:19 56:1	83:25 84:15,25	branches 38:24
32:9	71:5,11,25	85:6 95:1	43:12
basis 19:19	72:3,11,14,24	99:11,13,17,21	branching
20:2	74:8,12,25	100:22,25	116:16
bay 2:8	75:3 82:16	101:6 107:1,8	break 7:9 34:21
beard 2:4,11	83:5,13,15,25	107:11,12,14	35:2 58:12
beginning	84:15,25 85:6	107:16,18	59:6,9 66:9,11
60:10 113:21	86:2,8,12,14,15	108:17,20	78:12,15,23
begins 114:11	86:18,19,22,24	109:3,6 117:16	104:13 105:3
115:24 117:8	86:25 87:2	120:20 125:1	112:13
124:12	99:20 107:1,11	126:3,8,12,14	breaks 7:8,21
behalf 2:2,15	107:17 109:6	126:21 127:4	8:2 127:15
believe 6:21	109:10,13,16	128:20,20	brief 112:15
7:16 15:1 19:7	109:17,18,19	129:8	briefly 26:11
21:5 22:17	109:22,23,25		39:10 57:11

64:7 114:14 british 32:9 34:18 broad 28:23 browser 39:6 bsw 42:13 building 37:14 built 77:12 business 1:8 132:2	canada 32:11 care 80:11 carry 50:11,16 51:18 case 10:10 18:8 18:17 69:22 71:22 79:3 85:12 95:13 105:4 115:13 115:18 117:5 117:17 118:24 119:4,9,15 123:9,15,19 124:6 132:2 causing 48:16 cc 63:20 69:17 70:5,9 76:7 80:7 ccw 69:16,19 69:22 70:4,9 70:20,22,24 72:21,22 82:4 82:5,17 83:6 83:12,17,19 84:1 128:7,14 128:21 cd 37:10 cell 8:22 certain 7:17 14:8 15:15 16:23 38:23 64:4 certainly 14:1 65:11,16 108:23	certificate 3:9 28:4,12,14,16 130:2 131:1 certificates 28:6 certified 131:5 certify 130:7 131:8,13 challenge 21:10 23:18 challenged 15:14 21:14 22:2,6,9,11,12 22:13,14,15,23 23:5 110:15 challenging 11:8 chance 114:4 change 19:2,9 64:19 65:6,11 65:17,18 66:2 132:5 changed 27:24 64:21 65:15,25 changes 18:22 19:4 64:18,25 65:2,4 chapter 60:10 60:11 check 34:8 48:21 51:17 choice 27:3 chooses 86:24 chose 27:10 71:8	chris 2:7 8:15 11:24 ciena 34:17 38:11,13,16,17 38:20,22 circulation 31:7 cite 121:20 cited 121:25 122:14 city 25:14,18 25:23 26:2,3,6 26:13,22,25 27:5,9,15,21,23 28:2,17,22 29:1,16 claim 21:10,22 22:2,6,8,9,11 22:15,23 23:18 23:22 90:7,10 91:6 93:14,17 94:6,8 96:2,20 96:21 97:7,11 97:17,20 98:6 100:2,7,10 110:22,25 113:2,5,9 114:1 119:7 123:10 claimed 94:21 95:10 110:24 claims 21:14 22:12 23:5 68:17,20 96:24 102:5,8 110:15
c			
c 2:1 5:1,9,17 110:23,24,25 111:2,4,25 113:2,6,9 114:1 119:8 123:25 calculate 115:10 116:1 116:11 calculates 93:25 97:21 98:15,19 calculating 94:11 97:23 calculation 98:13 99:9 california 32:12,14 call 8:20,25 86:24 called 28:3 37:11 calls 82:3,5			

114:8 clarification 64:24 clarify 69:24 89:19 class 28:19 29:10,18 classes 27:10 28:15,25 29:15 clear 7:4 8:3 70:22,24,25 cleared 71:14 clearly 14:21 click 58:20 close 63:20 code 24:23 33:21 35:11 38:1 40:19 42:12,16,18 43:12,23,24 44:2,4,11,23 45:16 50:2,10 50:15,19 51:24 52:3 56:5 61:2 63:19,24 64:8 64:16,17 66:1 69:14,17,21 70:4,9,10,16 71:19 72:5,8 72:16 73:1,10 73:25 74:4,13 74:21 75:4,15 75:19 76:7,22 77:14 78:1,3 80:7,15 81:8	81:17,21,23,23 82:4,18 83:7 83:13 85:13 86:1,5,11,16,17 86:19,25 87:1 87:15,16,18,23 88:1,7,15,17,19 88:22 89:6,14 90:20,25 91:4 91:7,7,8,11,15 91:17,19,20,22 92:1,2,10,17,19 92:25 93:6,10 93:16,18,22,25 94:9,11,16,17 94:22 95:1,6,8 95:10,12,16,18 95:21,23 96:3 96:7,14 97:21 98:11,15,18,19 98:20,22 99:5 99:10,13,16,18 99:20 100:14 100:18,22,25 101:6 111:8 113:12,17 115:10 116:11 116:17 119:6 120:4,13 121:2 124:18,25 126:2,7,16,22 126:22,23 127:1,5,25 128:15,15 129:9,13	coded 64:2 103:15 codes 24:10 34:5 35:25 36:2,5,22 37:2 37:18,20,22,24 38:6,18,21,24 40:5,12,16,22 41:6,14,24 42:5,9,10,21 43:2,5 44:7,10 45:3,13,18,19 46:7,14 50:24 51:4 61:8,9 65:5 69:2 84:2 95:13 96:11 102:17 103:2,2 103:22,23 104:2,5 105:18 106:11 115:12 115:20 116:2 123:1 128:19 128:24 129:12 coding 86:18 100:24 101:3 collaborative 14:16 college 25:13 colleges 27:18 column 40:3 42:22 43:8,9 60:25 63:10,18 69:5,7,12 70:15 71:1,2 75:23 76:1,4	79:7,7,15,16,17 80:3 82:7,21 85:24 87:4 89:9,11 90:11 93:3,9,14,17,24 94:3,9,12 combine 111:15 command 47:13 77:6,7 98:14 106:23 107:1,4,7,10 commission 130:18 132:25 communicate 35:3 communication 8:18 29:14 communities 29:22 company 31:2 compare 12:24 44:19,24 45:7 45:9,11,20,21 46:5,12 62:24 64:11,12 65:13 65:20,21,24 69:2,9 80:25 81:4,7,9,10,11 81:16 96:6,7 96:16 115:10 comparing 96:11 124:24 comparison 64:11 75:12,18
--	---	--	---

82:11,24 compatible 32:15,19 57:18 compiler 51:15 52:5 complete 18:11 26:4 28:19 131:12 completed 65:13 completely 6:14 63:2 comprised 89:24 comprising 89:15 97:23 computer 8:19 9:15 24:20,22 27:1 29:3,9,19 32:9,17 33:20 35:11 79:12 80:9 89:16 90:21 102:17 102:18 105:19 113:12 computers 29:20 conceivably 81:13 concept 25:24 concluded 129:20 condition 24:10 33:21 34:5 35:25 36:2,4	36:22 37:2,18 37:20,22,24 38:1,6,18,21,23 38:24 40:5,12 40:15,19,21 41:6,14,24 42:5,8,9,10,12 42:16,18,21 43:2,5,12,13,23 43:24 44:2,4,7 44:10,11,23 45:2,13,16,17 45:18,19 46:7 46:14 50:10,15 50:19,24 51:4 51:23 52:3 56:5 61:2,7,9 63:19,24 64:2 64:8,16,17 65:5 66:1 69:1 69:7,11,14,17 69:21 70:4,9 70:10,16 71:19 72:5,8,15,25 73:10,25 74:4 74:13,21 75:4 75:9,14,19 76:7,22 77:14 78:1,3 80:7,15 81:6,8,17,21,23 81:23 82:4,18 83:7,12 84:1 85:13 86:1,5 86:11,15,16,17 86:19,19,24,25	87:1,15,17,23 87:25 88:15,17 88:19,22 89:6 89:14 90:20,25 91:4,7,8,11,14 91:17,20,22,25 92:2,17,19,25 93:6,10,16,18 93:25 94:9,11 94:16,17,22 95:1,6,8,10,12 95:13,16,18,21 95:23 96:3,7 96:11,14 97:21 98:11,15,17,19 98:20,22 99:5 99:10,12,16,18 99:20 100:13 100:18,22,25 101:6 102:16 103:2,2,22,23 104:2,5 105:18 106:11 113:12 113:17 115:10 115:12,19 116:2,11,17 124:18,25 126:2,7,15,22 127:1,5,25 128:15,19,24 129:9,12 conditional 43:11,13,24 44:18 45:2,12 46:6,13	conditions 51:8 51:17 80:25 81:16 116:16 conference 9:10 31:11,13 configuration 82:15 83:4 confirm 10:17 12:17 71:9 92:13 confused 23:7 confusing 70:20 89:1 congress 2:4,11 connected 131:16 connection 57:12 112:2 consider 46:12 considerable 103:3 considered 46:3 52:6 contain 24:9,18 containing 50:10,15 contains 61:12 85:12 127:2 content 125:18 contents 35:5 81:10 107:8 112:24,25 113:20 context 20:21 20:25 49:7
---	---	---	---

79:24 continue 28:13 28:17 66:10,14 continued 38:7 continues 15:17 continuing 93:24 control 44:18 44:23 45:12 46:6,13 61:3 62:4,4 copies 10:25 11:2 copy 39:2 46:18 core 28:10 corp 132:2 corporation 1:8 32:13,14 33:6 35:12,14 35:21 38:3,11 38:14,16,21,22 correct 6:6,7,18 6:19 8:12,13 9:1 11:9,10 12:8 13:11,23 15:17,18,20 16:7 18:4,18 18:20 19:12,19 20:2,15,16,18 20:19 21:10,11 21:15,23,24 22:16 23:18,20 23:23 24:16	25:15,16,22 27:16 30:3,6,7 30:9,10 31:12 31:19,20,22,23 32:1,2 33:6,7,8 33:22,23 35:12 35:13,15,16,18 35:19,22,23 36:15,16 38:11 38:12 39:23,24 40:13 41:8,11 43:18 44:2,20 44:24 45:3,5,8 46:7,14,15,22 47:1,2,7,8 48:19,20,24 49:21,23 50:12 50:16,20 52:13 52:14,18 53:10 53:14 54:7 55:4,9,14 56:6 57:3,4 59:24 60:2,3,16,17 61:6,8,10,20 62:5,6 63:6,25 64:1,5 66:22 66:23,25 67:24 69:3,17 70:7 70:11,17 71:6 71:20,23 72:1 72:2,6,9,16 73:2,3,11 74:1 74:5,6,10,11,15 74:17,22,23 75:1,2,6,16	76:20 80:23 81:17,25 82:4 83:13,17,18,23 84:2,3,12,13,17 84:22,25 86:6 86:9 87:8,23 88:8,11,15,20 89:6,7 91:4,5,8 91:13,15 92:3 96:12,15,19,25 97:4,5,12,13,25 98:2,7 99:21 100:8,9 101:7 101:8,12 103:6 103:19,20,24 104:6,11 105:25 106:1,4 106:5,8,9 107:2,11,13,14 109:4,9,16 110:15,19 111:18 112:3 115:19 116:8,9 117:5,22,23 121:11,12,15 121:21 124:3 128:15,16,25 129:1 corrected 14:20 correctly 24:15 40:8 43:15 44:12 51:11,19 53:2 55:22,23 61:5 70:6 83:9 87:20 89:17,18	90:22 97:24 103:5 105:21 106:6 108:14 116:1 corresponds 109:3 counsel 4:5 7:22 8:1,6 11:21 12:11 13:18 16:7 35:3 39:22 54:3 78:24 105:2 127:17 127:22 131:14 131:16 counsel's 5:22 8:12 county 130:5 131:3 course 65:22 courses 27:18 28:9 court 5:3 6:10 7:2 105:6 covers 32:24 cpu 61:4 cpus 60:15 cragon 9:16 cray 44:18,23 create 30:14 42:21 created 42:10 creates 43:23 credits 28:8,10
--	--	--	--

cross 3:4 112:16 crr 1:19 131:23 cv 9:8 16:22 25:2 31:10,21 32:3,23 33:25 34:3,11 35:8 38:10 48:22 49:18 57:1	21:3,6,18 22:25 24:1 47:25 95:4 96:1,18 97:15 99:24 105:10 108:3 110:3,7 117:1 118:9 121:17,20 122:14,15,18 124:9 125:5 127:20 dedicated 85:17 deficit 26:18 defined 70:3 85:24 defines 37:24 degree 25:25 25:25 27:25 degrees 27:22 department 57:16 depend 109:20 depending 64:3 125:18 depends 36:23 64:10,21 77:6 depicts 94:23 100:20 deponent 4:6 deposed 6:17 7:14 deposition 1:15 3:9 4:7 6:5,23 7:1,3,9,18,20	10:2 11:15 12:2,13 19:3 35:6 70:23 131:1,9 132:3 derive 90:19 91:10 92:10,24 94:25 100:12 100:21 113:11 derived 92:8,12 deriving 94:8 describe 26:11 36:17 55:19 61:11 68:8 98:1 119:22 described 24:9 43:22 55:13,25 56:4 62:8 64:25 87:22 88:5,13 89:4 112:6 123:11 123:20 describes 33:25 34:3,11 48:19 51:22 54:11 60:1 83:11,15 98:14 describing 86:18 designed 85:9 designing 85:10 desmarais 2:16 desmaraisllp.... 2:18	detailed 122:24 detect 48:16 determine 61:4 developed 32:18,19 devices 8:18 37:9,10 diagnostics 32:18 57:15,19 57:20 dialogic 32:16 34:9,17 difference 37:21 different 16:17 28:5 43:2 45:9 53:24 61:18 62:7,8,18 63:2 63:13 82:11,24 86:12 90:10 91:21 94:16,18 102:19 104:5 109:15 114:21 114:25 124:17 125:16,18 127:24 difficult 40:5 digital 29:14,15 direct 3:3 5:12 directly 51:9 62:24 93:24 94:10 97:20,22 118:10,12 disadvantages 87:18
--	--	--	---

disagree 50:21 disclose 95:15 96:2 116:10 124:23 disclosed 23:22 discloses 21:13 22:1,5,22 23:4 23:17 97:2,7,8 98:6 100:7 115:9,12 116:15 disclosing 114:7 discuss 7:21 8:1 117:4,22 119:15 discussed 8:3 55:8 123:4 discusses 60:21 62:3 discussing 116:8,19 disk 37:9 dispatching 9:11 display 76:9,13 76:14,16,24 89:22 distinguish 113:15 125:16 distinguishing 113:14 114:7 117:16 119:5 122:25 123:19 125:14	divorce 105:6 doc 56:10 document 9:9 12:21,24 13:15 13:20,25 14:2 17:5,11 41:2 46:21 59:17 documents 9:2 9:4,17 10:3 49:6 doing 32:25 77:7 96:6 donna 1:19 130:16 131:5 131:23 download 58:4 58:6,8,24 downloaded 57:25 downloading 12:20 56:23 draft 14:25 dratwa 1:19 130:16 131:5 131:23 drawing 17:19 drawings 17:15 17:18 18:2 68:11,14 101:22 102:2 drive 2:8 drives 37:10,10 drop 123:7 duly 5:10 130:9	e e 2:1,1 3:1 5:1,1 5:9,9,17,17 16:2 124:3,4 e.g. 89:13 earlier 16:17 120:24 121:10 126:1 128:12 eases 51:15 52:5 editing 32:17 edition 110:1 education 25:11 26:18,23 effect 40:20,22 41:7,15 42:5 efficiently 33:20 effort 14:16 eighth 118:19 either 11:1 46:24 57:13 69:10 92:14 97:1,8 98:6 elaborate 85:8 92:6 electronic 121:24 element 96:22 97:1,18,20 98:7 100:3,7 100:10 113:2,4 113:6,9,21 114:1 124:3	elementary 29:4 ellipse 24:17 embodiment 79:11 employ 117:15 employed 36:15 49:12 employee 131:14,15 emulate 103:16 105:17 emulated 103:4 129:10 emulates 102:16 emulating 24:10 33:20 103:1,2 emulators 34:1 35:25 36:2,4 36:22 37:2,7 37:15 38:14,15 encode 37:25 124:17 127:25 128:7 encoded 81:21 encodes 128:19 128:24 encoding 77:17 90:20 91:3,3,7 91:10,17,19,23 92:2,10,18,25 93:6,15 94:8 94:15,18,25
--	--	--	---

95:6,9 100:13 100:17,21,23 101:3,5,8 113:11 124:22 125:1 126:7,11 129:8 encryption 28:21 ended 30:19 ends 99:11 engineers 27:12 enterprise 60:1 60:5 entirely 21:24 entirety 14:9 14:19 39:12,13 48:2,11 59:18 67:11 105:14 entitled 8:2 48:17 entrance 27:5 entries 49:18 entry 26:8 48:22 environment 58:6 ep 66:22 equal 69:8,10 71:18,21,24 75:14 77:10 equivalent 25:25 errata 132:1	error 111:11 esa390 60:15 esquire 2:3,7 2:10,16 essentially 98:20 estimate 12:6 18:8 et01449 9:17 european 66:21 event 110:1 115:24 116:8 116:12 exact 12:23 14:4 41:22 42:6 exactly 14:18 exam 26:8 28:20 examination 3:2,3,4,5,6 5:12 112:16 127:13 127:16 129:6 examinations 26:1 examined 5:11 example 24:22 28:21 69:8 78:9 108:8 122:25 examples 106:3 exception 48:16 excuse 73:6 74:9 82:6	execute 24:25 executed 65:23 65:25 executes 75:13 executing 33:21 64:4 exemplary 79:11 exercise 83:2 exhibit 9:11,14 9:17,21,25 10:10,18,21,21 10:22 12:16,17 12:18 13:3 16:11,11,15,16 19:6 25:1,2,3 30:2 33:10,11 33:13 36:13 38:25 39:1,3,9 39:12,15,17,22 39:25 43:8 44:16 46:16,18 46:20 47:1,3,6 47:9,15,17,18 47:21 48:5,10 48:14 50:5 54:2,4,6 55:1,6 55:13,25 56:5 56:8,9,14 57:24 58:5 59:13,15,18,23 60:9 61:17 63:4 66:17,18 66:20 67:5 68:2,5 79:4	90:4 101:11 112:22 121:7 121:10,18,21 122:1 exhibits 10:1 10:21 16:13,14 16:16,18,19,21 17:2 39:2 48:5 exist 107:22 exit 58:3 expect 66:1 experience 33:5 34:1,2,4,6,12 34:15,16,16 35:10 36:3 49:11 57:2,8 57:12 expert 41:18 expertise 33:1 expires 130:19 132:25 explain 6:25 7:19 47:16 57:11 58:10 64:8 65:10 96:2 114:14 explained 115:8 explains 21:4 102:25 explicit 41:6 explicitly 51:16 95:11 111:1,3 express 21:17 107:15,16,18
--	--	--	---

108:22,24,25 109:19,25 expressed 18:23 19:5 109:8,14 expressing 109:1	107:10 108:9 117:25 118:5 118:10 119:19 119:21 125:7 figures 79:9 file 11:19 filed 101:11 filled 27:11 66:3 financially 131:17 fine 6:3 7:13 11:13 34:22 66:12 67:6 78:19 finish 7:5 77:1 finished 127:16 first 5:10 12:22 14:25 30:8,25 40:3 43:10,10 43:12 44:8,15 50:8 52:9 53:16 55:18 61:23 63:22 69:5 79:7,8,19 85:24 87:4 92:16 95:7 102:18 108:7 108:10 112:21 122:23 five 58:12 79:7 79:16 82:7,21 118:18 flag 77:9 89:14 89:20	flags 89:23 floating 54:13 61:22,24 62:2 62:3 flores 2:10 11:24 florida 5:19 130:4,17 131:2 131:7 flow 44:19 45:2 45:12 46:7,13 focus 16:19 36:11 73:20 90:11 93:3 95:7 96:21 97:14 99:1,23 focusing 23:11 99:3 follow 112:19 followed 81:5 following 115:23 follows 5:11 followup 129:4 forget 36:24 form 14:7 17:8 17:17 18:12,19 19:20 20:3 21:16 32:6 34:14 36:6 39:19 41:25 44:21 45:4,14 46:8 47:23 52:19 62:10 64:20 65:7	70:18 72:7 74:16 75:7 87:24 91:9 92:4,21 103:25 109:5,9 111:13 112:4 118:17 format 63:11 found 16:23,25 121:14 four 69:9 80:4 124:19 125:2 128:1 fourth 71:11 74:19 free 11:1 12:19 25:2 33:12 front 6:10 11:1 25:8 59:12 119:20 fujitsu 57:22 57:23 full 43:11 44:8 44:16 79:7,8 79:19 82:23 108:7 fully 54:21 function 63:2 functions 96:11 further 24:6 129:2,15 131:13
f			
f 124:7 fact 50:18 121:13 fails 58:24 fair 17:6,12,14 18:13 66:4 78:14 123:14 familiar 16:24 48:25 49:3,7,9 49:16,22,25 68:9 106:16,18 fast 32:17 43:5 feature 21:14 22:2,6,23 23:5 23:17 feel 11:1 12:19 25:2 33:12 fifth 87:4 fig 79:10,10,10 figure 60:14 63:14 68:23 69:1,6,13 70:13 71:15,16 73:6 75:24 82:6 83:2 84:5 94:23 99:8 100:20 106:23			
			g
			g 5:1 gates 85:14

general 43:4,6 51:10,23 52:2 53:20 61:21,24 62:1,19 generally 42:17 43:25 61:13 81:5 generate 17:15 17:25 72:9 generated 51:8 91:22 92:1,3 95:13 119:6 generates 44:6 generating 58:21 59:4 90:12,17,18 91:24 92:23 100:11 113:9 generation 58:1 102:16 german 66:25 67:2 give 5:5 22:18 56:20 72:12 73:22 101:3 given 41:1 gmbh 1:3 132:2 go 10:8,11 13:12 14:3 17:21 26:25 34:23 44:14 55:16 58:9,16 59:8 60:18 63:9 66:3 69:25 70:13	71:9 73:5 75:20 79:4 80:3 81:3 82:6 82:7 92:15 95:8 99:1,2 100:23 101:9 102:12 104:15 105:9 106:22 108:5 110:3 125:4,19,24 going 14:17 26:14 34:20 58:4 65:13 66:9,10 80:23 81:15 84:24 85:16 92:7 95:24 96:6 120:2 good 5:14 112:14,18 government 26:16,20,24,24 graduated 25:22 graduation 25:24 gray 2:3 3:4,6 8:15 10:5,14 11:25 14:7 15:4 17:8,17 18:12,19 19:20 20:3 21:1,16 32:6 34:14 36:6 39:5,19 41:25 44:21	45:4,14 46:8 47:23 52:19 58:14 59:8 62:10 63:5 64:20 65:7 70:18 72:7 74:16 75:7 87:24 91:9 92:4,21 103:25 104:15 107:21 109:5 111:13 112:4,12,17 114:19 115:17 116:18,24 118:21 120:11 120:23 125:19 125:24,25 127:9 129:4,7 129:14 great 56:25 greater 69:10 74:20,24 77:9 greatly 51:14 52:4 ground 96:23 96:23 97:3 98:2 110:4,14 110:22 111:6,9 111:11 112:2,6 112:8 113:21 114:6,10,14,21 114:21 115:8 116:19 117:22 118:15,23 119:17 123:11	123:15,16,25 125:9 grounds 96:19 grubert 2:4,11 guess 22:20 109:20 guilds 25:14,18 25:23 26:2,3,7 26:13,22,25 27:5,9,15,21,23 28:2,18,22 29:1,16 h half 12:9 118:10 halfway 117:7 124:11 127:23 hand 130:11 hanging 49:16 handling 47:12 48:8 51:14 52:4 hang 34:8 hard 39:2 46:17 hardware 43:6 61:15 64:13 76:5,7,8,14,23 77:5,12,15,15 77:18,20,23 78:8 79:12,25 80:8,11,17,20 80:21,23 81:12 81:14,18,24,25 82:1 83:8
---	--	---	--

84:11 85:7 86:1,2,6,9,12 86:13,15 87:15 87:16,17 88:6 88:7,8,10,10,14 88:21,25 89:5 89:14,20,22 120:14 harvey 9:16 head 106:12,19 heading 25:11 100:2 held 37:4 help 58:15 helped 32:19 hexadecimal 109:1,11 hh342823 130:18 high 27:6 49:2 114:20 higher 54:17 highlighting 18:3,5 hill 2:8 history 11:19 15:13 32:7 hit 39:5 hits 122:10 honest 7:17 hour 12:9 34:20 66:10 hours 12:5,10 18:9	human 109:10 hundred 57:17 i ia32 105:19 106:15 ian 1:15 5:16 130:8 131:9 132:3,21 ibm 32:10,10 32:15,18,19 33:1 34:17 37:23 42:11,12 42:13,20 43:3 44:6 45:16 56:16 57:2,9 57:12,18 60:4 61:7 69:3,14 69:19,22 70:17 71:22 72:16 78:2 79:11,24 80:9 89:13 96:14 98:20,22 ibm's 60:1,5 idea 43:20 identified 17:3 63:14 identifier 62:25 identify 16:1 16:16 114:6 119:7 identifying 117:21 ieee 9:10 31:13 31:15	ii 113:3 illustrated 108:9 implement 40:5 43:11 44:18 45:2,12 46:6 46:13 106:11 implementati... 9:16 54:14,19 80:11,17,20,21 81:12,19 implementati... 96:10 implemented 76:8,23 77:14 78:3 80:7 81:24 89:16 important 18:15 19:14 include 18:16 19:15 20:17 55:3 111:8 included 19:11 65:3 includes 32:25 33:2 61:2 122:24 incorrect 76:25 indicate 52:10 52:16,25 53:8 53:18,22 55:20 56:1 72:12,21 80:24 81:16 indicated 64:13	indicates 69:7 72:5,15,22,25 74:13 75:4 indirectly 63:1 individual 81:20 individually 23:12,16 infinera 34:17 information 19:1,8 61:3,13 113:15 114:8 117:16,21 119:6 122:25 123:20 125:14 informed 108:16 inherently 23:22 24:9,18 initial 92:15 input 42:19 institute 25:14 25:18,23 26:2 26:4,7,13,22,25 27:5,9,15,21,24 28:2,18,22 29:1,16 instructed 8:7 instruction 43:23 45:20 48:9 51:15 52:4 61:14 65:12,14,19,20 65:21,22 66:2 66:3 69:2
--	---	--	---

70:16 75:13 81:9 90:21 95:2 102:20 113:13 115:11 115:14,19 116:2,12,20 instructions 24:9,12,19,22 33:22 34:13 42:12 44:19,24 45:8,9,12 46:6 46:12 51:9 64:4 65:24 81:5 82:12,25 88:1,9 90:19 92:24 94:24 96:12 97:22 100:12,21 102:17 103:4 113:10,14 115:9,20 116:1 118:13,14,19 118:20,22 119:22 120:4 125:8,10 intel 105:19 106:15 intel's 106:16 106:18 intend 18:17,22 19:4 111:12 interested 80:12 131:17 interject 10:5	internal 77:22 international 1:7 132:2 introduced 38:25 invention 82:16 83:5 87:6,13 87:22 88:5,13 89:3,4 inverse 83:19 ip 49:8 ipr 7:14,20 11:8 19:12 22:13 ipr2023-00274 1:5 irregular 40:6 40:12,16,23 issues 22:19 itel 32:13,14 34:6,17 ix 111:12 ix.b 111:18 ix.b. 111:22 112:7	132:3,21 jgray 2:6 job 27:4 36:17 36:20 jobs 57:14 jointly 14:23 joseph 2:3 8:15 11:25 journal 31:15	knowledge 28:18 known 89:14 125:3 konstantakop... 2:16 3:3,5 5:13 10:9,15 14:10 15:6,8 17:10 17:20 18:14,21 19:21 20:5 21:7,19 34:19 34:23 35:1 36:10 39:8,21 42:3 44:25 45:24 46:10 52:21 56:12 58:11,16,23 59:2,11 62:12 63:6,8 64:22 65:9 66:8,13 66:15 72:10 74:18 75:11 78:21 88:2 91:12 93:2 104:3,12,17,20 104:22 109:7 112:9,14 114:16 116:13 116:23 118:16 120:7,21 125:21 127:11 127:14 129:2 129:17
	j	k	
	j 5:9,17 111:8 jestice 1:15 5:14,16 10:16 35:2 59:12 78:17,22 104:23 112:11 112:18 126:1 127:15 129:18 130:8 131:10	k 16:2 kane 16:2,16 16:22 46:21 47:12 48:8 49:6 53:11 56:7 110:17 121:6,18,21 122:6,13 keep 24:22 key 48:21 keyword 49:17 kind 18:4 126:11 kingdom 26:17 26:19 27:6 32:11 know 6:1 7:10 8:2 14:3 16:25 26:10 30:23 31:6,8,16 33:14 53:25 59:17 64:7 66:8 78:10 82:8 90:12 114:12	

l	123:24	84:4 85:21	long 29:7 56:10
l 4:3	line 29:5 71:11	86:5,8,17,24	59:17
language 73:13	90:11 92:22	87:3,22 88:5	look 23:8 33:16
119:21	93:4,9,17,24	88:13,18,23,25	39:3 43:7
languages	132:5	89:4,8,21	46:23 71:15
30:25	lines 93:5,15	95:20,22 96:2	109:2 114:2
laptop 8:22,24	94:3,10,12	96:25 97:4,6	116:25 117:24
9:22,23,24	list 16:13,14	97:11 98:5,9	119:19 121:23
large 131:7	31:21 38:10	98:11,14,18,22	121:24 125:7
law 20:21,25	98:2	98:25 99:4,20	looked 11:17
lawyer 20:24	listed 16:6,9	100:6,18 101:6	11:17,18 39:13
lawyers 14:17	17:5,11 30:3	106:22 107:16	53:24 68:11
14:22	33:5	107:18,23	101:22 102:1
lee 130:5 131:3	listing 9:17	109:13 110:19	looking 32:22
left 35:14,21	lists 61:18,21	110:20 114:7	113:5
36:12 40:3	little 27:3	114:15 115:9	looks 12:24
42:22 58:18	live 5:18,19	115:21,25	122:8
60:25 63:10,18	llc 132:1	116:10,15,20	los 32:11
79:6,16	llp 2:16	118:1,4,7,11,12	loud 54:24
legal 14:21	loaded 24:13	118:18 119:16	lunch 79:2
20:14	24:24 51:9	119:19 122:23	lzlabs 1:3 8:6
level 29:14 49:2	located 5:20	124:22 126:3	11:8 13:18
114:20	loderer 9:8	128:18,24	132:2
levels 28:5	11:18 24:10	129:8	m
likely 31:1	66:16 67:4,8	loderer's 94:23	m 109:22
81:20 85:20	67:10,13,16,18	108:9	m1 76:7 79:13
limitation	67:22 68:8,12	logged 10:6	m2 24:14
23:22 90:12	68:15,18,21,24	logic 77:8	machine 9:13
91:24 97:7	70:8,12,19,23	logical 9:12	43:12 44:2,4,6
124:5	71:8 75:20	29:24 60:14	76:4,6 77:23
limitations	76:19 77:13	london 25:14	90:18,20,25
21:22 90:10	78:7,11 79:5	25:18 26:2,4,7	91:4,7,8,11,14
110:22 111:6	80:6,10 81:22	26:14 27:1,9	91:17,19,20,25
111:25 112:3	81:24 82:3,5	27:16,19 28:2	92:2,10,17,19
119:7,11 123:9	83:11,15,25	29:2	92:23,25 93:6

93:10,16,18,22 93:25 94:9,11 94:16,17,21,24 94:25 95:6,7 95:10,16 96:3 97:21 98:11,15 98:17,21 99:3 99:5,12,16,20 100:11,13,18 100:22,24 101:5 113:10 113:12,14,16 126:2,7,15,24 126:25 127:6,7 127:8 128:20 129:13,13 machines 1:8 54:18 132:2 made 18:11 32:15 51:3 magazine 30:9 30:11,20,23 31:4,6 mainframe 30:19 32:15,18 45:16 80:23 81:15 89:12 mainframes 32:20 57:18,21 57:22 89:13 make 18:22 19:4 32:14 45:22 46:16,18 56:8 64:15 66:16 70:21	makes 40:22 managed 57:15 57:20 manner 85:2 123:10 128:7 128:10 manual 56:17 manually 30:17 58:2 map 37:25 38:1 44:7 94:21 95:9,12 124:19 124:24 125:2 126:13,14,19 127:2,4 128:2 mapping 70:2 85:24 maps 37:20,22 126:20 marriages 105:8 match 126:21 mathematics 29:5 maths 27:7 matter 31:18 31:25 32:4 mean 9:24 14:8 24:7,17 30:24 32:24 36:1,8 36:24 39:11 40:15 41:14,20 42:1 49:9 53:3 62:1 69:8,18 80:21 85:17	89:23 93:20 99:15 109:10 120:9 meaning 126:19 means 7:20 41:1,19 43:21 76:19 77:15 meet 11:21,23 12:12 memory 24:13 24:24 mention 60:4 mentioned 12:12 35:11 41:10 60:22 87:18 mentions 57:1 merit 131:6 met 11:24 12:3 method 9:11 87:14 methodologies 30:18 methods 42:20 mind 23:13 62:14,16 80:1 98:24 122:1 mine 16:22 minute 58:12 112:13 minutes 78:17 123:4 125:20 mips 24:8 44:17,22 45:1	45:6 48:17,19 48:21,22,25 49:3,12,15 50:14,18,24 51:2 52:15,22 52:24 53:13,20 53:25 54:10,11 54:19 55:2,8 55:13,25 56:4 84:19,20 85:9 95:24 96:9,15 misnaming 69:18 missed 19:1 22:7 61:23 missing 21:21 23:10 modification 118:4 119:16 122:23 modified 117:25 118:10 modifies 114:15 monitor 39:3 months 13:25 morning 5:14 move 14:5 35:9 38:2 44:11 74:19 90:1 moved 64:14 multiple 85:14
---	---	---	--

n	121:25 122:3 130:18 numbers 13:2 109:18 numbing 54:15	97:2,8 98:6 100:7 110:15 110:16 112:5,8 117:9,14 124:4 128:6	47:20 50:7 52:8 54:8 55:17 56:25 57:11 58:11 59:2 60:6,7,20 63:7,17 66:7 66:13,19 67:5 67:7 68:1,25 69:23 71:17 73:4 75:12,21 76:2 77:4,19 78:13 79:20,23 82:13 83:1,1 84:4,6 85:22 90:2,3,6,9,14 90:16 92:15 93:13 94:19 96:22 97:14,16 101:10 102:23 104:12 105:9 105:11,15 106:14,21 108:4,6 110:2 110:4,5 111:23 112:9,20 113:1 113:8,24 114:13 115:4,6 117:3 119:2,24 121:8 122:9 124:10 125:6 125:20,24 127:8,21
n 2:1 3:1 4:3 5:1,9,17 16:2 name 5:15,16 5:17 29:21 132:2,3 naples 5:19 nature 109:15 near 113:25 118:7 necessarily 92:5 need 54:23 new 2:17,17 9:11 54:21 132:1 newest 54:18 ninth 118:20 non 24:12 115:13,18 123:9,15 normally 42:14 109:25 notary 130:17 131:6 132:25 notation 54:15 notes 11:5 131:12 number 13:3,4 13:5,7 16:11 16:12 17:22,23 25:20 66:22 108:13 109:2,3 109:4,11,12,12 109:14,16,20	o o 4:3 5:1 oath 6:6,8 104:25 130:2 object 8:6 87:13 89:2 92:4 111:13 objection 14:7 17:8,17 18:12 18:19 19:20 20:3 21:1,16 32:6 34:14 36:6 39:19 41:25 44:21 45:14 46:8 47:23 52:19 62:10 64:20 65:7 70:18 72:7 74:16 75:7 87:5,24 91:9 92:21 103:25 109:5 112:4 114:16 116:13,23 118:16 120:7 120:21 objects 41:5 obtained 64:3 obvious 23:9 24:11 96:5,25	obviously 12:23 16:21,24 21:5 65:17 octal 108:25 109:12 offer 21:8,12 23:3,15,19,21 23:24 28:23 98:4 110:13 offered 19:16 97:10 offering 119:4 office 1:1 5:22 6:11 8:12 26:21 27:11 29:13 official 130:11 oh 104:10 ok 73:22 okay 5:25 6:3 7:12,25 8:5,9 9:1 11:2,3,12 12:15,21,25 13:6,12 14:5 15:10 16:21 20:11 23:2 25:7 27:20 31:9 33:9,15 33:24 34:21 38:4 39:7,14	once 33:14 65:12 82:9 90:13

ones 7:18 online 11:2 12:3,10 46:25 op1 69:8 op2 69:8 open 9:21 58:7 operand 71:18 71:18,21,21,24 71:25 73:9,9 73:15,16,18,19 73:24,24 74:3 74:4,7,7,20,20 74:24,25 operands 75:14 operate 90:19 92:24 100:12 108:12 113:11 operates 108:10 operating 37:12 operation 42:15 45:15,16 52:11,17 53:1 53:9,18,22 55:20 56:2 59:24 62:22 64:10,11,18 65:4 95:19 96:6,8,16 107:8,12 115:11 127:3 operations 16:25 38:23 44:10,11 56:17	62:23 96:10 110:17 opinion 21:8,12 21:25 22:4,21 23:3,15,19,21 23:24 41:1 91:25 97:6,11 99:19 108:16 110:13 119:3 opinions 18:17 18:23 19:5,11 19:15,19 20:2 20:6 96:24 98:5 100:6 119:8 123:24 opposed 41:4 42:23 orbit 37:20 order 26:6 27:4 ordinary 117:9 117:14 124:13 124:16 organization 26:14 original 54:14 66:24 127:16 outcomes 93:22 113:16 125:16 output 42:19 overall 41:21 overflow 47:12 49:16 50:11,16 51:17 52:12,17 53:1,9,19,23 55:21 56:2,6	69:11 115:13 115:18,25 116:8,12 117:5 117:17 118:24 119:4,9,15 123:1,9,15,19 124:6 overhead 103:3 own 21:3 owned 57:23 owner 1:9 2:15 p p 2:1,1 4:3 5:1 p.m. 1:17 129:20 page 3:2 12:22 13:1,2,3,4,5,9 13:10 15:9 16:11,11 17:21 25:9 30:2 31:21 36:12 38:10 40:1,2 43:7 44:16 50:6 52:7 54:4 54:5,7 55:16 56:21 60:8,11 60:18,19,21,25 61:25 62:3 63:3,9,9,16 68:24 69:25 70:13 75:20,25 78:11 79:6,16 80:3 82:7,21 85:21 87:3 89:9 97:14	98:1 99:23 108:5,8 110:6 110:8,11,25 112:22,23 113:3,5,6,22,25 114:11,24 115:1,3,23 116:25 117:24 118:9 122:18 124:8 125:5,8 127:19,23 128:17 132:5 pages 16:15 17:3,5,11 48:4 48:13 61:17,21 62:8 122:13 paper 31:11,14 40:24 41:21 42:4 paragraph 15:2,11 17:24 20:12 23:25 24:4 41:4 43:11 44:9,15 44:16 50:9 51:7 54:9 60:24 63:19 70:2 71:10 75:22 76:1,3 79:18,19,22 82:8,10,13,22 82:23,24 83:4 85:23 87:4,9 87:11 88:4,18 89:2,9,11 95:4
---	--	--	---

98:8 100:19 102:22 103:7 103:10,14,18 103:21 104:2,9 104:10 105:10 105:13 107:24 108:3 110:9,12 110:12,25,25 111:7,16,17,20 114:2,22 115:5 115:7 116:7 117:4,7,20 118:25 119:13 122:19,22 123:8,23 124:2 124:6,9,11 127:20,23 128:5,12,18 paragraphs 20:9 41:16 98:4 100:5 parentheses 63:20,20 park 2:17 part 67:13 90:17,22 112:25 118:15 125:9 partially 57:22 particular 18:8 89:12 110:1 particularly 26:20 parties 4:6 131:15,16	pass 28:20 33:24 127:9 passing 88:3 patent 1:1,1,6,9 2:15 6:10 9:8,8 9:9,9 11:9,11 11:12,17,18,19 15:12,15 20:21 20:25 21:10 31:18,22,24,25 32:5,8 33:12 33:17,19 35:18 35:22 37:23 67:22 68:12,15 68:18,21 90:5 90:8 92:7,8 101:9,14,17,23 102:3,6,9,11,13 102:15,24 104:4 105:17 105:23 106:3 patient 59:1 pattern 71:5,11 71:25 72:3,12 72:14,24 74:8 74:12,25 75:3 84:15,25 85:6 86:2,9,12,14,18 86:23,25 87:2 99:21 107:1,11 107:17 109:6 109:11,13,16 109:17,20,23 109:23,25	patterns 109:18 payne 9:8 pc 2:8 pdf 54:7 58:19 pdp 44:18 pending 7:11 78:15 people 57:20 percent 57:18 perform 42:14 81:4 performance 54:17 103:3 performs 107:7 107:10,12 person 24:6 110:17 117:9 117:14 124:12 124:15 personal 14:22 personally 130:8 petition 11:8 petitioner 1:5 2:2 phone 8:23 phraseology 41:22 42:6,8 physics 27:7 pick 41:23 42:7 picture 58:19 pipeline 51:15 52:5	place 1:17 80:14 82:21 planning 10:1 109:21 platform 9:25 please 5:15 7:4 7:5,10 10:9,11 12:17 13:8 15:2 16:10 20:9 23:25 25:9 36:12 39:3,4,6,25 43:7 50:5 51:6 52:7 54:4 56:22 60:8 63:3,9,16 68:23 75:20 84:4 87:3 89:8 90:7 108:2 112:22 114:3 114:12 117:2 119:1 121:23 124:9 127:19 pllc 2:4,11 plurality 113:15 pod 37:11 pods 37:15 38:8 podware 37:16 point 5:23 7:9 17:19 19:9 29:7 30:12 32:3 37:20 51:2 53:12
--	--	--	--

54:13 61:22,24 62:2,3 64:13 65:13 88:4 95:20 98:9,10 99:4 107:24 110:21 111:12 111:18 pointing 70:20 73:14 99:7 populate 56:21 port 88:9 porting 87:15 88:6 portions 14:11 14:14 posa 127:23 128:6 position 37:4 possibilities 69:9 possible 7:5 65:14 70:4 85:25 93:21,21 113:16 possibly 84:18 post 26:21 27:11 29:13 powerpc 49:24 50:2 105:20 106:4,7,10 ppm 99:6 practice 29:4 prefer 46:5 premarked 10:20	preparation 12:2,7,13 121:16 prepare 11:14 present 18:17 19:12 96:18,23 presented 31:11 pretty 27:8 102:20 109:1 preview 58:1 58:22,24 59:4 previous 81:6 113:5,6 previously 43:22 primarily 27:11 40:6 principle 16:24 110:16 principles 56:16 59:23 115:11 printed 9:2,4 10:3,11 12:19 25:3,5 33:13 46:24 56:13 printout 9:10 prior 15:15,19 15:22 16:5,18 21:9,13,21 22:1,5,22 23:4 23:9,11,16,23 35:17 94:20 95:9,15 110:14	priority 35:21 probably 30:25 49:21 76:25 80:17 problem 73:12 74:2 76:15,17 76:19 problems 12:20 76:12 proceeding 7:15,20 49:8 51:3 121:17 proceedings 48:6 process 26:10 26:12 37:14 49:14 processes 9:12 50:24 53:25 processing 29:15 processor 24:8 24:13,18,20,21 24:24 51:2 54:12 55:13 69:15 84:19 85:11 95:14,17 96:5,16 102:25 103:7,8,11,13 103:14,15,19 103:22,24 104:5,6 105:19 processors 49:12 54:21,22 85:10	produced 31:2 31:3 37:8 57:17 product 30:14 37:9 57:17 products 29:17 professional 32:24 33:4 program 24:23 61:1,12 62:13 62:21 63:11 65:3,6,15 77:11,16 87:16 88:6 120:1,16 129:10 programmer 77:22,25 120:3 120:12,13 121:2,3 programming 29:16 80:13 81:1 119:21 programs 32:17 51:16 57:16 120:2 progress 58:2 prosecution 15:13 provide 6:14 10:1 14:25 15:13 50:25 52:10,16,25 53:8,17,21 56:1 100:5
---	---	---	--

provided 9:5 16:6 39:23 47:7,18 54:3 97:3 112:2 provides 19:18 20:1,13 50:10 50:14,19 51:4 56:5 106:3 113:14 118:18 providing 87:17 88:15,16 88:19,22 89:5 123:24 pseudocode 119:23,24,25 psw 42:13 60:22 61:1,8 61:10,11,14 62:7,13,18 63:1,23 64:9 64:14,19,25 78:1,4,8 80:8 80:16,18,19,21 81:9,11,13 public 130:17 131:7 132:25 publication 31:10 66:21,24 publications 30:3,5 31:17 published 30:8 31:14 publishes 30:22 30:23	pulled 48:8 purpose 43:4,6 51:10,23 52:2 put 47:25 q qualification 28:1 qualifications 34:1,4,12 qualified 28:9 qualifier 77:20 question 7:5 8:8 14:24 16:18 17:9 19:23,25 22:3 22:18 27:13 36:25 38:19 47:14,19 52:6 53:6 57:1 72:13 73:23 75:9 78:12,15 83:24 84:20 85:2 92:16 101:4 105:12 114:18 122:2 129:5 questions 6:15 7:11 8:7 35:8 112:10,19 120:24 121:9 127:12 129:3 129:15 quick 10:7 58:15 59:6,9 104:13,16	quite 14:8 quoted 47:5 92:22 r r 2:1 5:1 r2000 50:9 52:9 52:22 53:7,12 53:17 54:12,15 54:20 55:1,3,6 55:19 r2010 54:13,15 54:20 55:3 r3000 54:18,21 55:3,11 r3010 54:18,21 55:4 raid 37:10 ram 29:24 ran 26:21 37:12 range 28:23 rather 30:16 37:25 44:7 102:13 110:14 read 17:2 24:15 40:8,17 41:12 41:16,20,20 43:15 44:8,12 45:6 51:11,19 52:23 53:2 54:9,23 55:18 55:22,23 60:24 61:5 62:22,25 63:22 67:8,10 67:14,21,25	68:17 70:6 79:9,21,23 80:17 83:3,9 87:8,10,11,20 89:17,18 90:22 93:12 97:24 101:14 102:5 102:13 103:5 105:21 108:7 108:14 119:1 127:22 reading 4:7 53:11 95:3 100:10 reads 15:11 40:4 41:4 43:11 44:16 50:9 51:7,13 52:9 53:16 70:2 76:4 85:24 89:12 90:17 97:20 105:16 113:9 128:6,18 real 10:7 58:15 104:16 reality 27:11 realized 26:17 really 30:20 85:15 realtime 131:5 reason 6:13 19:7 132:5 reasons 111:14 111:22 112:1,6
---	--	--	--

112:8 recent 33:4 recess 112:15 recites 94:8,10 recognize 68:3 101:20 124:13 124:16 127:24 recognized 86:21 record 5:15 10:8,11,13 34:24,25 51:3 58:9,17 59:8 59:10 69:24 78:20 87:12 101:2 103:17 104:15,19,21 125:19,22 131:12 records 14:3 recross 3:6 129:6 redirect 3:5 116:14 127:13 redundant 76:24 refer 11:11 13:5 21:2,3 60:5 67:4,4 70:23 79:10 80:8 103:14 reference 21:22 22:1,5,22 23:12 44:1 48:7 50:25	56:17 79:5 111:4 121:14 referenced 122:6 128:11 references 15:16,20,23,25 16:5 21:9,13 23:4,9,16,23 41:5 54:20 55:7 110:14 referring 47:24 69:20,21 70:22 78:8 89:21,23 104:7,8 111:5 111:14 114:22 refers 55:1,2,6 55:10 103:18 111:11 112:7 128:10,14 refresh 39:5 40:18 56:21 reg 72:4 84:8 regard 21:22 54:2 70:8 72:21 76:18 81:22 regarding 34:1 34:4,12 119:4 119:9 register 43:3 50:10,19 51:10 52:3,3 62:19 62:21,24 72:4 84:8,10,15,16 85:5,11,18	95:1 100:22 108:10,12,13 116:16 123:1 129:8 registered 128:20 131:6 registers 29:24 41:4 42:23 43:1,4,6 50:15 51:23,24 61:18 61:21,22,24,25 62:2,2,4,4,5,8 84:21,24 85:5 120:5,14,15,17 121:1,4 regular 31:3 reinventing 102:14 relate 31:17,24 32:4 37:18 38:6,14,18,21 related 29:10 37:6 57:6 relates 85:2 87:23 88:6,14 88:25 89:5 94:6 102:15 105:12 relative 123:25 131:14,15 relevant 9:18 15:14 32:8,20 65:21 relies 123:16	reloading 12:21 rely 17:7,13 relying 112:1 remaining 123:9 remember 7:17 13:17,24 15:25 18:6 28:25 29:6,18,21 30:22 37:19 66:25 106:6 remote 6:22 7:1 remotely 6:5 renamed 38:8 render 58:24 renders 97:2 98:6 100:7 repeat 19:22 22:3 rephrase 37:5 45:10 51:1 64:23 65:1 88:24 94:7 98:10 107:9 replacing 52:22 report 95:11 102:12 110:24 112:21,23 115:3 119:1 131:9 reported 1:19 reporter 5:3 7:2 131:6,6
--	--	--	--

reporter's 131:1 reporting 132:1 represent 109:10,18,24 120:2 representation 99:14,15 124:19 126:15 126:17 127:5 128:1,11 129:9 129:11 representative 53:13 represents 109:23 requested 131:11 require 51:16 required 26:24 requirement 26:23 requirements 36:18,20 requires 6:9 91:6 reread 11:16 82:13 research 51:5 reserve 19:2 respect 65:19 respectfully 82:16 96:9	respective 4:6 respectively 83:5,16 response 6:15 64:18 rest 32:22 40:17 restate 14:24 17:9 38:19 62:11 result 42:11 64:3 65:4 95:18 96:16 115:19 resulted 52:11 52:17 53:1,9 53:19,23 55:21 56:2 results 58:21 64:12 115:12 127:2 retained 13:18 13:24 14:1 retry 58:2 return 58:3 review 15:12 15:15,19 49:5 58:5 90:15 105:14 114:4 121:17 122:13 131:10 reviewed 17:4 39:9,12 48:10 48:13,15 59:15 59:18,21 82:9	114:5 121:10 right 5:20,21 11:4 12:24 16:14,19 19:2 19:3 22:14 28:13 40:4 42:18 43:8,9 48:23 49:20 59:3 70:14 72:24 75:23 76:1,3 79:9 85:23 88:12 91:3 93:3,23 96:11 98:22 99:22 102:24 108:5 112:12 112:24 113:22 116:5 123:5 126:8,10 129:10 risc 48:19 49:15,17,19,22 50:1,4 54:10 54:12,19 55:2 55:8 rmr 1:19 131:23 role 57:19 roms 37:10 room 8:14,19 row 71:15 73:5 73:6,14,20 74:19 106:23 rule 7:23	rules 6:25 run 32:18 86:17 running 75:17 ryan 2:7 8:15 11:24 ryaniplaw 2:8 ryaniplaw.com 2:9
			s
			s 2:1 4:3,3 5:1,9 5:17 132:5 satisfied 123:10 saying 22:14 40:21,24 41:21 55:10 58:1 70:19 80:19 86:22 100:19 103:21 says 40:14 41:9 44:9 50:13,17 51:12,25 52:1 54:11 55:5,15 56:3,7 59:1,3 64:6 65:24 81:11 88:20 91:10 92:9,22 95:23 104:1 111:7 112:5 113:20,23 117:13 123:8 123:18 124:15 school 27:6 science 27:2 29:3,9 32:9

scope 21:1 45:14 65:7 114:17 116:14 120:8 script 30:14 scripting 30:25 scripts 30:15 seal 130:11 search 49:17 107:19 122:8 122:10 searching 15:22 second 26:15 31:10 41:3 44:14,15 50:8 51:6,7 54:7 69:12 70:2 71:10,15 73:5 82:7,10,14,23 83:3 85:23 89:9,11 92:18 93:16 106:23 108:11 128:17 section 14:21 20:17 47:4,11 48:1 51:22 111:3,11 114:1 114:11,24 115:1,8 122:24 sections 14:20 47:24 59:20,21 see 7:2 10:23 13:1,22 25:11 33:3 42:24	46:20 48:22 49:18 56:23 58:6,14 60:12 60:22 61:19,22 62:1 63:10,13 63:18 65:17 71:3,12 73:17 73:19 75:22 76:10,11 79:6 79:14 82:19 84:7 86:3 90:24 92:16,20 93:7,11,13,19 93:23 94:1,4 94:13 97:17 100:2,15 103:11 106:23 106:24 107:5 107:20 113:2 113:18 115:15 115:16 116:3 117:11,18 118:2 123:2,12 123:21 124:20 128:3,8,22 seeing 122:11 seems 43:17 seen 90:13,14 96:9 select 84:15,16 85:4 selected 79:12 79:25 84:25 selection 85:3	selectively 117:15 sentence 22:7 24:3 40:4,10 41:3,13 43:10 43:18,21 44:1 44:5,15 50:8 51:7,13 52:9 52:23 53:16 55:18 63:22 79:7,8 80:4 82:14 83:3 93:20 105:13 105:16 108:8 112:5 115:24 117:8 122:23 123:8,18 124:12,15 127:22 128:5 128:18 sentences 14:18 14:19 separate 9:23 separately 91:23 92:1,9 92:12 september 1:16 130:12 131:19 sequence 90:18 92:23 94:24 98:14 100:11 100:20 111:8 113:10,13 115:9,20 116:21 119:6	119:22 120:4 sequencing 61:3 sessions 12:9 set 10:14 42:16 42:18 43:13 44:9 45:16,20 45:21 51:8 64:2,8 69:2 75:15 96:15 108:10 sets 43:23 44:11 107:1 setting 54:10 64:15 settings 33:21 several 89:15 89:24 sgbfirm.com 2:6,13 share 9:21,25 10:18 12:16 25:1,3 33:13 38:25 56:9 sheet 132:1 shift 107:7,10 107:12 108:12 117:15 125:11 125:17 shifts 125:12 show 69:6,13 shows 60:14 69:1,14 70:15 sic 87:5
---	---	--	---

side 40:20,22 41:6,15 42:5 58:18 sign 13:15 signature 13:13 130:15 131:22 signed 19:10 122:15 signing 4:7 silence 22:10 similar 28:7 116:21 120:2 simple 45:15 simplifies 51:14 52:4 simulating 82:18 83:7 87:14,23,25 simulators 37:15 single 86:15,23 sit 19:3 six 13:25 sixth 118:19 skill 24:6 110:17 117:9 117:14 124:13 124:16 slash 25:13 slayden 2:4,11 slt 51:9 ltu 51:9 small 37:12 software 24:11 24:23 29:10	30:13,16,19,21 30:21 31:1,3,5 somewhat 28:23 sorry 53:5 56:13 72:19 73:18 77:1 81:3 89:1 97:9 100:23 103:9 110:8 112:25 113:4 sort 58:12 sound 49:20 sounds 112:14 source 71:19,22 72:5 73:1,10 73:25 74:5,14 74:21 75:5,13 75:15,18 76:5 76:7,21 77:5,8 79:12,25 86:1 86:6,12,16,20 87:16 88:7,10 95:1 98:23 103:16,18,24 104:6 105:23 126:22,23,23 127:6 128:14 128:25 129:13 space 103:3 special 76:8,14 76:23 77:4,14 77:15,17,19,20 78:8 80:8 89:13,20,22	specific 17:1 23:10 79:10 87:15 88:6 99:7 specifically 7:1 82:3 95:23 111:24 specification 67:21 101:16 101:20 102:25 specified 82:18 83:7 108:13 specify 87:6,14 spell 5:15 spend 18:7 standards 20:14 standpoint 50:3 80:13 81:2 stands 71:5 start 7:6 25:5 100:10 starting 24:5 32:8 82:24 97:17 110:9,11 starts 42:22 58:21 60:11 63:19 82:11,14 87:7 state 5:15 61:4 130:4,17 131:2 131:7 stated 8:11 16:22	statement 50:21 124:20 states 1:1 115:7 status 50:11,15 50:20 52:10,16 52:25 53:8,17 53:21 55:19 56:1 61:1,2,12 62:13,21 63:11 65:3,6,15 stays 109:13 stenographic 131:12 stenographic... 1:18 131:9 stipulated 4:4 storage 37:9 store 62:22,25 84:15,25 85:5 stored 24:12 42:12 43:5 123:1 125:1 126:3,8,12,14 127:4 structure 40:7 40:13,16,23 60:15 61:15 62:16,18,19 81:25 82:1 study 27:1 subject 9:18 29:21 31:18,25 32:4 subjects 28:10 28:11,24
--	--	---	---

submitted 11:7 48:14 54:3	37:12 56:16 60:1,5,15 61:7	114:2 121:23	92:2,10,17,18
subscribed 132:22	69:3 70:17	taken 66:9	92:23,25 93:6
subsection 108:10	72:16 79:12,25	81:12	93:10,15,17,22
subsections 108:11	80:9 102:16	takes 98:25	93:25 94:9,11
subsequent 45:22	105:18,24	talk 35:5 78:23	94:16,17,21,24
subsequently 64:14	125:15	79:1 88:19	94:25 95:5,7
substance 7:22	systems 29:23	105:2,5 127:17	95:10,12,16
substituted 53:4	32:16 34:7,9	talked 31:4	96:3 97:21
suggest 19:8	34:17 89:12	64:7	98:11,15,17,21
suggests 97:9	t	talking 29:11	99:3,4,12,16,17
105:17	t 4:3,3 5:9,17	29:23 42:11	99:19 100:11
suite 2:5,12	t1 114:9 120:5	47:16,17 48:2	100:13,17,20
summarize 94:5	120:18,19	48:4 54:5	100:22,23,24
summary 32:24	t2 114:9 120:6	67:23 75:25	101:5 103:8,14
66:4	120:18,19	81:18 89:21	103:15,22
support 11:8	t3 117:16,21	93:1 96:13	104:4 106:2
19:15 98:5	123:1 125:11	98:21 111:16	113:10,12,13
100:6 110:13	125:12,14,15	talks 22:25	113:16 126:2,7
supreme 105:6	125:18	71:11 77:13	126:15,22,25
sure 13:7 31:8	tab 88:23	78:7 80:6	127:7,8 128:20
46:2 125:21	table 40:4	88:23 89:2	129:12
suspect 76:16	71:16 73:6	93:9	tasks 51:16
swear 5:3	99:9 112:24,25	tape 37:10	52:5
sworn 5:10	113:20	target 71:25	taught 27:18
130:9 132:22	tablet 8:22	72:4,15 74:8	tces 27:7
system 24:14	take 7:8,10	74:12,25 75:3	technical 26:18
28:8 32:17	26:1 27:9	83:8 84:7,11	28:24
	28:19 34:20	84:14 85:4	technique
	45:15 56:10	86:2,9,13,14,20	105:17 116:15
	58:12 59:4,6,9	86:23 87:16	technological
	64:11 78:15	88:7,10,14,21	28:3,11,14,16
	79:21 87:8	88:25 89:5	technologies
	90:15 104:13	90:18,20,24	36:15,18,21
	105:13 112:12	91:3,6,8,11,14	37:5,8,18 38:3
		91:17,18,19,25	38:6

technology 15:14 68:8 tecuan 2:10 11:24 telecom 32:9 34:18 telecommuni... 26:21 telecommuni... 27:1 29:4 tell 6:9 14:2,18 16:8 48:3 57:24 94:20 106:13,20 114:3 117:1 ten 78:17 112:13 term 36:24 40:19 42:4 60:4 81:23 86:5,8 90:24 91:2,13,14 92:17,18 93:14 93:16 96:2 103:10 terms 37:23 92:16 93:5 96:14 test 30:16 57:16 tested 32:19 37:9 57:21,21 testified 5:11 121:13 126:2,6	testifying 6:10 testimony 5:4 6:15 7:22 121:1 testing 30:13 30:15,19,21,21 31:1,5 37:13 texas 2:5,9,12 5:21 text 54:16 tflores 2:13 th 2:17 thank 27:14 54:23 104:17 112:10 114:10 127:9 129:14 129:17,18 thanks 64:24 78:16 theo 129:16 theodoros 2:16 theory 29:5 thing 30:17 47:17 48:15 65:11,21 things 58:13 91:21 think 10:6 18:13 19:1 21:2 23:8 27:8 40:18 43:21 58:25 73:12 76:24 79:2 80:10 82:20 89:20 91:16	95:22 96:4 115:3 third 24:3 51:13 60:24 71:1 73:6,14 82:21,23 107:4 108:11 112:22 117:21 119:5 122:24 thought 19:24 22:24 75:8 three 10:20 25:19,20,21 thursday 1:16 time 1:17 16:11 18:6 19:10,13 25:24 27:2,10 27:24 29:7,7 29:23 30:12 35:20 56:11,20 58:3 64:13 79:21 83:25 87:8 90:15 105:13 125:4 129:19 times 6:20,22 12:1,3 121:25 122:5 title 33:16,19 33:24 48:20 71:1 titled 59:23 tkonstantako... 2:18	today 6:15 8:14 29:25 together 90:19 92:9,24 100:12 113:11 took 29:15 top 106:12,19 117:24 118:10 125:7 trademark 1:1 tradeoffs 45:25 transcribe 7:3 transcript 3:9 4:7 7:4 131:10 131:11 transitory 24:12 translation 66:21 67:5,25 76:17 transmission 29:3,5 trial 1:1 tribunal 6:11 true 53:25 83:19 120:18 120:20 128:13 131:11 truth 5:5,5,6 6:9 truthful 6:14 try 7:3,6 12:21 76:5 89:3 trying 109:22
--	--	--	--

turn 13:8 15:2 16:10 20:9 23:25 24:3 25:9 36:12 39:25 50:5 51:6 52:7 54:4 60:8 63:3,16 68:23 78:11 84:4 85:21 87:3 89:8 90:4 90:7 102:22 108:2 110:6 112:21 113:25 114:10 115:23 116:7 118:25 121:6 122:18 124:8 127:19 turning 114:24 122:17 twice 12:3 two 12:3,9,10 13:2 30:3 31:17 46:1 54:17 60:15 63:23 65:23 75:9,14 78:3 91:20 92:16 93:5 106:3 111:6 124:18 125:3,20 127:15 128:1 type 117:21 124:22 types 61:18 62:8	typically 76:8 76:23 77:11 80:7 typing 30:17 typo 43:17 typographical 111:11	71:8,13 76:21 77:1,24 85:15 92:11 94:15 95:25 101:16 102:2,8 104:24 108:19 109:22 120:9	unspecified 59:5 updated 12:18 40:22 41:6,15 41:24 42:2,5,9 updates 41:5 updating 43:1 43:2 upload 33:10 uploaded 10:20 12:16 25:1 33:11 use 10:1,3 11:1 12:19 16:10 21:6 25:3 33:12 36:24 46:24 96:10 103:1,10 104:1 108:18 109:21 119:21 used 36:24 37:11,12,15 38:15 43:14,25 47:11 54:15 61:3 98:22 120:1 123:20 uses 42:4 70:8 70:23 81:22 86:5,8,23 103:22 104:5 105:19 using 8:20,24 9:4 17:22 40:19 44:19,23 45:2,7,11,13,18
	u	understanding 15:13 20:13,20 20:22,24 26:16 28:22 40:25 44:5 51:21 53:20 54:25 55:24 67:1 76:13,19 84:19 91:18 108:20	
	u 4:3 u.s. 1:6 11:8 ultimately 99:10 un 29:23 under 6:6 25:13 96:23,24 97:3 104:24 110:14 underlying 109:15 undersigned 130:7 understand 6:5 6:8,12 10:25 18:15 19:14 20:23 24:7 26:9 36:7,8 39:1,14,18,20 40:10 41:13,19 41:21 46:17 47:3,4,10,15,22 47:25 49:14 50:3 59:21 66:17 67:2,16 67:19 68:6,14 68:20 70:21	understood 30:1 64:23 88:3 unique 30:18 uniquely 70:3 82:17 83:6,16 83:20,25 85:25 unit 77:8 united 1:1 26:17,18 27:6 32:10 units 29:24 universities 27:19 university 25:13 27:16,17 unmuted 125:23	

46:5,7,12,13 49:14 51:22 52:2 70:12 97:22 98:16 102:19 105:17 115:20 116:21 usually 89:15	33:13,14 46:25 46:25 56:14 121:24 versions 54:17 55:2,4,8,12 view 49:5 96:25 110:16 viewed 46:25 virtual 1:17 9:12	web 56:21 webs 90:18 weighting 9:12 welcome 10:16 35:1 78:22 104:23 went 7:18 withdraw 53:5 witness 5:7 34:22 58:19,25 59:3 66:12 125:23 127:10 130:11 witnesses' 132:3 wondering 43:20 word 21:6 22:12 48:21 61:1,12,23 62:13 63:11 65:3,6,15 68:2 68:5 76:13,18 101:19 108:18 words 23:10 work 32:7,25 36:9 37:17 38:2,5,8,11,13 38:17,20 49:12 96:8,17 worked 18:9 26:23 32:10,13 35:24 106:8 working 18:7 29:13 30:12	32:10,16 36:1 36:3 57:8 works 42:17 world 26:16 write 14:6,9,11 14:15 25:14 120:3 writing 50:2 57:15,20 120:12 121:2 written 14:21 14:22,23 wrong 82:20 wrote 14:19,20 49:24 57:15,16 57:19
v	w		x
v 1:6 2:7 132:2 value 64:17 65:5,25 69:17 70:4,10,15 72:20,21 74:4 74:14,21 75:5 75:15 82:4,17 83:6 85:25 100:25 101:6 107:2,14 108:12,17,21 108:22 116:17 126:3,8,12 values 82:16 83:5,12,13,15 83:17,20,20,25 84:1 128:19 variety 57:19 57:20 61:13 various 27:18 31:4 42:19 80:24 81:16 vax 44:10 89:13 veritext 132:1 version 11:2 12:19 25:3,4,6	wait 7:5 waiting 59:7 waived 4:8 want 7:9 10:7 19:22 59:6 66:10,11 71:9 89:19 90:11 104:13 wanted 19:12 70:21 92:13 war 26:16 way 40:18 92:14 96:17 109:1 110:12 114:25 120:1 128:1 ways 62:20 109:15 124:17 127:25 we've 34:19 66:8,9 71:14 96:9 weather 105:8	witness 5:7 34:22 58:19,25 59:3 66:12 125:23 127:10 130:11 witnesses' 132:3 wondering 43:20 word 21:6 22:12 48:21 61:1,12,23 62:13 63:11 65:3,6,15 68:2 68:5 76:13,18 101:19 108:18 words 23:10 work 32:7,25 36:9 37:17 38:2,5,8,11,13 38:17,20 49:12 96:8,17 worked 18:9 26:23 32:10,13 35:24 106:8 working 18:7 29:13 30:12	x x 3:1 111:11 xyratex 34:16
			y
			yeah 10:9,12 13:7 34:9 49:2 58:14 69:18 70:19 71:13 78:19 88:20 90:15 94:4 111:7,21 126:9 years 25:17,21 26:10 35:20 york 2:17,17 132:1

z
z 105:18,24
zadian 36:15
36:18,21 37:5
37:6,8,17 38:3
38:6,7,9
zc1 106:24
108:10
zc2 107:4,10,12
108:11
zc3 108:11
zero 71:20,23
72:6,9,16 73:1
73:3
zoom 1:17 8:20
8:24