

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

CISCO SYSTEMS, INC.,
Petitioner,
v.

ORCKIT IP, LLC,
Patent Owner.

IPR2023-00714

U.S. Patent No. 6,680,904

REMOTE VIDEOTAPED DEPOSITION OF MIGUEL GOMEZ
Thursday, April 18, 2024

Reported By: Lynne M. Ledanois, CSR 6811

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

CISCO SYSTEMS, INC.,

Petitioner,

v.

ORCKIT IP, LLC,

Patent Owner.

IPR2023-00714

U.S. Patent No. 6,680,904

Videotaped deposition of MIGUEL GOMEZ,
taken in Livermore, California, commencing at
9:08 a.m., on Thursday, April 18, 2024 before Lynne
Ledanois, Certified Shorthand Reporter No. 6811

A P P E A R A N C E S:

Counsel for the Petitioner:

DESMARAIS LLP

BY: THEODOROS KONSTANTAKOPOULOS

Attorney at Law

230 Park Avenue

New York, New York 10169

tkonstantakopoulos@desmaraisllp.com

Counsel for the Patent Owner:

KOBRE & KIM LLP

BY: GEORGE STAMATOPOULOS

Attorney at Law

800 Third Avenue

New York, New York 10022

george.stamatopoulos@kobrekim.com

I N D E X O F E X A M I N A T I O N

Examination by:	Page
Mr. Konstantakopoulos	6
Mr. Stamatopoulos	188

I N D E X O F E X H I B I T S

Deposition	Description	Page
Exhibit 2025	Declaration submitted by Miguel Gomez;	10
Exhibit 2026	Curriculum Vitae of Miguel Gomez;	19

Thursday, April 18, 2024

9:08 a.m.

MIGUEL GOMEZ,

having been duly sworn, testified as follows:

EXAMINATION

BY MR. KONSTANTAKOPOULOS:

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

A Miguel Gomez, M-I-G-U-E-L, G-O-M-E-Z.

Q Where do you live?

A Livermore, California.

Q Are you located there right now?

A Yes.

Q We're taking this deposition by remote video, but you understand you're under oath today?

A I do.

Q You understand that your oath requires to you tell the truth as if you were testifying in front of a court or the patent office?

A I do.

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

1 A No.

2 Q You've been deposed before; correct?

3 A Yes.

4 Q How many times?

5 A I don't have an accurate count in front of
6 me, but it's been in excess of 20 times.

7 Q And was any of those times a remote
8 deposition?

9 A Yes.

10 Q So let me remind you of some ground rules.

11 So there is a court reporter, even though
12 it's not in the same room with you, and she'll try
13 to transcribe this deposition. And to have as much
14 of a clean transcript as possible, please wait until
15 I finish my question before you start answering.
16 Okay?

17 A Okay.

18 Q I'll try also to let you answer before I
19 move on to my next question.

20 We will take breaks during this
21 deposition. If at any point you want to take a
22 break, please let me know and we'll take one. The
23 only thing I'm asking is that there is no question
24 pending.

25 Is that okay?

1 A Yes.

2 Q Now, this deposition is for an IPR
3 proceeding, which means that during breaks, you
4 cannot discuss with counsel the substance of your
5 testimony.

6 Are you aware of this rule?

7 A I'm aware of it.

8 Q And if you discuss with counsel during
9 breaks, I'm entitled to know what you discussed. Is
10 that clear?

11 A Yes.

12 Q Counsel may object to some of the
13 questions. Unless you are instructed not to answer,
14 you're here to answer my question. Okay?

15 A Yes.

16 Q And you stated you are at your home;
17 correct?

18 A I'm sorry, one more time.

19 Q You stated that you're located in your
20 home today?

21 A Yes.

22 Q Is there anyone else in the room or in the
23 house with you today?

24 A There is no one in the room. There are
25 other people in the house.

1 Q The door is closed in your room?

2 A Yes, the door to my room is right behind me.

3 Q Do you have any devices in the room with
4 you other than your computer that you're using for
5 this Zoom call?

6 A No, I put my cell phone outside this room.

7 Q There's not a laptop, tablet or anything
8 that you actually can use to communicate with
9 people; correct?

10 A Correct.

11 Q Do you have any printed documents with
12 you?

13 A Not on this desk. There are printed
14 documents in the shelves behind me, but they are not
15 accessible to me at this point.

16 Q And you're not planning on using them;
17 correct?

18 A Correct.

19 Q Do you have any notes with you?

20 A No.

21 Q Can you confirm that the only application
22 or program open on your laptop or desktop is the
23 Zoom application and the browser with exhibits;
24 correct?

25 A That's correct.

1 Q You submitted a declaration in support of
2 Orckit's IPR POR in connection with Patent
3 Number 6,680,904; correct?

4 A Correct.

5 Q If I refer to the patent as the '904
6 patent, would that be okay?

7 A Yes.

8 Q And you have access to Exhibit Share, so
9 can you please open Exhibit 2025?

10 A I have it open.

11 Q Can you confirm that Exhibit 2025 is the
12 declaration you submitted?

13 (Whereupon, Exhibit 2025 was marked for
14 identification.)

15 THE WITNESS: It looks like the
16 declaration I submitted.

17 BY MR. KONSTANTAKOPOULOS:

18 Q Can you turn to Page 62.

19 A I'm at Page 62.

20 Q Is this your signature that you see?

21 A Yes, it is.

22 Q Did you sign the document?

23 A That is my signature that was applied to the
24 document.

25 Q What did you do to prepare for this

1 deposition?

2 A Well, I reviewed the patent. I reviewed the
3 claims in the patent and the specifications. I
4 reviewed the file history.

5 I reviewed opposing expert's report -- I
6 reviewed a large number of documents in preparation
7 for -- in preparation of writing this report.

8 Q So I'm asking about your preparation for
9 this deposition, not --

10 A Oh. Again, I reviewed the same documents
11 and then I also met with counsel.

12 Q How many times did you meet with counsel?

13 A In preparation of this deposition, I believe
14 it was three.

15 Q Do you remember when?

16 A I believe it was Monday, Tuesday and
17 Wednesday of this week.

18 Q And approximately how many total hours did
19 you meet with counsel?

20 A I did not add up the hours precisely, but it
21 might be four hours.

22 Q In total?

23 A I would have to go back and check, but four
24 or five hours, in that neighborhood.

25 Q Thank you.

1 Who did you meet with?

2 A I met with George Stamatopoulos and also
3 with Mitch, and I've forgotten his last name now off
4 the top of my head.

5 Q Anyone else other than George and Mitch?

6 A I believe that was it.

7 Q Focusing on your declaration, did you
8 write your declaration?

9 A I wrote sections of it and in conjunction
10 with the attorneys who wrote many of the legal
11 sections.

12 Q Other than the legal sections, did
13 Mr. Stamatopoulos write any other sections of the
14 declaration?

15 A It was a collaborative effort. I
16 contributed my positions and how I felt about the
17 technology. We met several times and together we
18 wrote the declaration.

19 Q Did you generate all the drawings in your
20 declaration?

21 A Many of the drawings were excerpts from
22 various other documents.

23 There is one drawing that I suggested and
24 it was drawn by somebody else.

25 Q When you mean "drawing," you mean

1 annotated?

2 A It was actually created.

3 Q And are you referring to the drawing on
4 Page 49 of your declaration?

5 A Yes.

6 Q Some of the drawings in your declaration
7 have annotations; correct?

8 A I'm sorry, one more time.

9 Q Some drawings in your declaration have
10 annotations?

11 A That's correct.

12 Q Did you do the annotations in your
13 drawings?

14 A Many of the annotations I suggested, but
15 they were -- again, this is a collaborative effort.

16 Q Do you remember approximately how much
17 time did you spend working on your declaration?

18 A I don't have an exact count of the number of
19 hours.

20 We wrote many declarations in these
21 proceedings and I didn't differentiate between this
22 one versus the other declarations.

23 Q And did you read all the exhibits that you
24 identified in your declaration?

25 A I believe I did. Let me go back and review

1 it.

2 As I said, I read a large number of
3 documents in preparation for the development of this
4 declaration and also for this deposition.

5 Q The number of documents that you read,
6 they've all been cited in your declaration?

7 A We don't have a listing here.

8 Q Right. Let me try a different way.

9 If an exhibit or document is not listed on
10 your declaration, is it accurate to assume that you
11 did not rely on it?

12 MR. STAMATOPOULOS: Objection.

13 THE WITNESS: I'm not an attorney. I
14 don't know how to answer that directly.

15 But what I will say is that if, as an
16 example, the -- there is patents that are at issue,
17 including the '904 plus the prior art, plus the
18 responses to the opposing counsel's expert are all
19 very relevant in preparing this document, plus all
20 the other documents that I read.

21 BY MR. KONSTANTAKOPOULOS:

22 Q When you say all the other documents that
23 you read, what are you referring to?

24 A As I mentioned, the file history as an
25 example.

1 Q Are there any documents or materials that
2 you would have liked to have read if you had more
3 time in putting together your declaration?

4 A I think my declaration stands on its own.
5 It's complete and answers the questions that the
6 opposing experts presented.

7 And I stand by the declaration as it is.

8 Q Is there any research or investigation you
9 would have liked to have done before you formulated
10 your opinions?

11 MR. STAMATOPOULOS: Objection.

12 THE WITNESS: Again, I believe my
13 declaration is complete and accurate and I stand by
14 the opinions I presented.

15 BY MR. KONSTANTAKOPOULOS:

16 Q So would it be accurate to say that you've
17 made your declaration as complete as you could?

18 A I believe the declaration responds to the
19 issues presented by the opposing counsel's expert
20 accurately and completely.

21 Q And you understand that it was important
22 that you include in your declaration all the
23 opinions you intend to assert in this case; correct?

24 A I believe those opinions are in this
25 declaration.

1 Q Do you intend to make any changes to the
2 opinions you expressed in your declaration?

3 A That would depend on whether we would have
4 to respond to other -- as I said, I'm not an attorney
5 and I don't understand all the legal proceedings in
6 this case.

7 If I'm asked to, based on what's going on
8 in this proceeding, I would respond if necessary.
9 But I've not been asked at this point.

10 Q But as you speak right now for your
11 deposition, you do not intend to make any changes to
12 the opinions you expressed in your declaration;
13 correct?

14 A Again, as I said, it would depend on whether
15 I was asked to opine further. But I've not been asked
16 that yet.

17 Q Okay. That's what I'm asking.

18 As you sit right now in answering these
19 questions, you do not intend to make any changes to
20 the opinions you expressed in your declaration?

21 A I haven't been asked to make any changes and
22 I believe the declaration is complete and accurate as
23 it stands.

24 Q If you're not asked to make any changes to
25 your declaration, you do not intend to make any

1 changes to the opinions you expressed in your
2 declaration; right?

3 A I have not been asked to make any changes.

4 Q So that's not my question.

5 If you're not asked to make any changes to
6 your declaration, you do not intend to make any
7 changes to the opinions you express in your
8 declaration; right?

9 A So with regard to the declaration itself,
10 there are some errors I would like to point out.

11 Q Okay.

12 A If that's where you're going with this.

13 There are some errors that I detected
14 after the declaration was submitted. The errors
15 have to do with Section 7A and 7B, which I found on
16 Pages 28 and 42.

17 Q Let's start with Section 7A. What error
18 did you identify in --

19 A In Section 7A, the header, which reads,
20 "Vink, Patrick and AAPA do not suggest 'master
21 units... comprising a physical interface to a
22 packet-switched network," and then in parentheses it
23 says, "Claims 1, 4, 11, 14 and 19."

24 Claim 9 was omitted in error. So I would
25 like to add Claim 9 within the parentheses.

1 And I also would like to add that the
2 language of Claim -- the language of Claim 14,
3 although it's different, my analysis applies to that
4 as well because the language still falls within
5 the -- within my analysis and that would apply also
6 to Claim 19.

7 Q Understood.

8 A Then in Section 7B, again, within the
9 parentheses, I would like to add Claim 9.

10 Q Anything else?

11 A As we go through the declaration, if I
12 should discover another error, I would be willing to
13 volunteer it at that point within this deposition.

14 I don't recall off the top of my head
15 right now if there's anything else.

16 Q So other than the two sections that you're
17 identifying, you cannot think of any other place in
18 your declaration that you would like to change your
19 opinion; correct?

20 A As I said, if I should discover another
21 error as we're reviewing this declaration today, I'll
22 be sure to let you know.

23 Q Okay. That's fair enough.

24 Your understand it was important that you
25 include all support for the opinions that you offer

1 in your declaration; correct?

2 A I'm not a lawyer, but I understand that
3 substantiating my opinions is important.

4 Q And your declaration provides all the
5 bases for your opinions; correct?

6 A Can you be more specific, please?

7 Q If you express an opinion in your
8 declaration, and I ask you what is the basis for the
9 opinion, you will be able to point me to the basis
10 of your opinion in your declaration; right?

11 A I will thoroughly provide an answer that
12 supports my opinion.

13 Q And would that answer be based on
14 something that you already included in your
15 declaration?

16 A That plus my experience.

17 Q Okay. Now, can you download or access
18 Exhibit 2026?

19 (Whereupon, Exhibit 2026 was marked for
20 identification.)

21 THE WITNESS: I see Exhibit -- I've opened
22 Exhibit 2026. It has a tag Exhibit 0002 at the
23 bottom of it.

24 MR. KONSTANTAKOPOULOS: I don't see that
25 tag.

1 THE WITNESS: It's on the first page right
2 at the lower right-hand side where it says Cisco
3 Systems, it says -- it has a yellow tag,
4 Exhibit 0002.

5 BY MR. KONSTANTAKOPOULOS:

6 Q So when I introduced it, I didn't tag this
7 and I don't see a tag. There might be a glitch.

8 But is that tag on the first page?

9 A No, I know what happened, I went to the
10 wrong folder. Let me close out this other folder. I
11 don't know how I ended up in the other folder, but I
12 did.

13 Let me go back to that.

14 Okay. This time I have the document,
15 Exhibit 2026, there is no tag.

16 Q Okay. And Exhibit 2026 is your C.V.;
17 correct?

18 A Yes, it looks like my C.V.

19 Q This C.V. was filed in the proceeding on
20 February 12th, 2024; correct?

21 A I believe that sounds about right.

22 Q Is this the most recent version of your
23 C.V.?

24 A It's the most recent C.V. in which I'm
25 allowed to disclose the cases that I worked on.

1 Q My point is, is there anything since
2 February 12th, 2024 that you would like to add to
3 your C.V.?

4 A No.

5 Q There nothing you can think that you would
6 like to update; correct?

7 A There's nothing that I am allowed to
8 disclose at this point.

9 Q Okay. So can you turn to Page 1.

10 A I'm on Page 1.

11 Q You list some topics under the heading
12 "Expertise"; correct?

13 A Yes.

14 Q These are the topics that you list as
15 being qualified to offer an expert opinion on;
16 correct?

17 A I'm sorry, say that again.

18 Q These are the topics that you list as
19 being qualified to offer an opinion on; correct?

20 A This is my C.V. and the section is general
21 expertise that I have, it's not designed to provide
22 any kind of definition for my expert work.

23 This is really for employment work and to
24 show that these are generally the skills that I
25 have.

1 Q Right. And I'm saying that you're
2 qualified to offer an expert opinion on these
3 topics; correct?

4 A These are topics that I've worked
5 extensively in the industry on.

6 Q And you feel qualified to offer an expert
7 opinion in this proceeding on those topics; correct?

8 A Those topics I know a considerable amount
9 about, yes, and I can be an expert in them.

10 Q If a topic is not on the list, would it be
11 fair to assume you're not qualified to offer an
12 expert opinion on?

13 MR. STAMATOPOULOS: Objection, form.

14 THE WITNESS: These are examples of the
15 types of things that I am capable of. But if you
16 look at any one of them, there's many disciplines
17 within them and I would be qualified to discuss
18 those as well.

19 BY MR. KONSTANTAKOPOULOS:

20 Q As long as those disciplines are covered
21 by the topic, right, these are the topics that you
22 feel qualified to offer an expert opinion on;
23 correct?

24 MR. STAMATOPOULOS: Objection, form.

25 THE WITNESS: For example, computer

1 architecture is a very broad topic. I've designed
2 many systems that -- where I've been deeply involved
3 in designing architectures, but I have an
4 understanding about computer architectures.

5 I also have an understanding about various
6 other kinds of technologies that may not be listed
7 here but, you know, they weren't the kind of things
8 I was looking to actively get involved in a job
9 situation.

10 So I didn't list them, but it doesn't mean
11 that I cannot opine on them because I'm an expert in
12 them.

13 This is more of an employment document.
14 This isn't a document that says the kinds of things
15 that I am capable of. It's designed to target
16 specific types of work that I was looking to get
17 engaged in.

18 BY MR. KONSTANTAKOPOULOS:

19 Q Right. My question is relating to whether
20 you're qualified to offer an expert opinion in this
21 proceeding. So I don't think you answered exactly
22 my question.

23 So I'm not asking about your work
24 experience. I'm asking as to whether you feel
25 confident to offer an expert opinion on topics that

1 are not listed under the expertise heading.

2 MR. STAMATOPOULOS: Same objection.

3 THE WITNESS: So, for example, I list
4 telecom protocols. I've got extensive experience
5 with telecom protocols.

6 I also list digital switching technology.
7 That doesn't mean that I am not capable of
8 understanding digital switching protocols because
9 that would be something within the digital switching
10 technology.

11 I'm very versed on protocols within
12 digital switching and digital communication.

13 The fact that it might have been omitted
14 here does not necessarily mean I cannot be an expert
15 in it.

16 BY MR. KONSTANTAKOPOULOS:

17 Q I understand these topics may have
18 subtopics and they are broad.

19 I'm generally asking if there is a topic
20 that is not covered by what you list under your
21 expertise section, would it be fair to assume you're
22 not qualified to offer an expert opinion on?

23 MR. STAMATOPOULOS: Same objection.

24 THE WITNESS: If, for example, if that was
25 about pharmaceuticals, yes, I think that would be

1 fair. I'm not a doctor, I don't understand anything
2 about pharmacy.

3 But within the sphere of digital and
4 analog design domains, I have extensive experience,
5 45 years of experience designing telecom, data com,
6 programming ASICs, designing ASICs, programming
7 FPGAs, doing all of the kinds of things that one
8 would find within an expert capable of understanding
9 the technology that we're discussing today.

10 BY MR. KONSTANTAKOPOULOS:

11 Q All right. So let's assume that an analog
12 design is another topic that you would like to
13 include under your expertise.

14 Other than the topics that you list under
15 expertise in installing analog design that you just
16 mentioned.

17 Is it fair to assume that if a topic is
18 not listed under your expertise, you're not
19 qualified to offer an expert opinion?

20 MR. STAMATOPOULOS: Same objection.

21 THE WITNESS: Again, as I said, if it's
22 outside the sphere of the design work that is listed
23 in my C.V., and I can point you to many places on
24 the C.V. on which I worked on systems comparable to
25 the technology that we're discussing today such as

1 broadly outside of the sphere of digital circuit
2 design and protocols, such as pharmaceuticals, I
3 think I am an expert.

4 BY MR. KONSTANTAKOPOULOS:

5 Q Okay. So did you come up with a list of
6 expertise on Page 1 of your C.V.?

7 A Did I write this? Is that the question?

8 Q No, if you came up with a list.

9 A Oh, this list, this was developed, like I
10 said, for positioning myself for certain types of
11 employment.

12 Q And how did you come up with a list?

13 A I was very interested at the time -- at the
14 time I wrote this, I was interested in data
15 communications and design of the lower-level physical
16 interfaces for data communications, including the
17 drivers and the hardware.

18 Q So this is how you came up with the list?

19 MR. STAMATOPOULOS: Objection, form.

20 THE WITNESS: That's sort of the thought
21 process that I was looking for was just to be able
22 to position myself for certain types of employment.

23 BY MR. KONSTANTAKOPOULOS:

24 Q Because you have employment related to the
25 expertise listed on Page 1, you came up with a list

1 of topics listed on Page 1; correct?

2 MR. STAMATOPOULOS: Objection, form.

3 THE WITNESS: This list is a summary of
4 45 years of experience in industry working for a
5 fair number of telecommunications, data
6 communications and computer-aided engineering
7 companies.

8 BY MR. KONSTANTAKOPOULOS:

9 Q There has not been any formal process to
10 proclaim that you are an expert in any of the things
11 listed under the heading "Expertise" in your C.V.;
12 correct?

13 A I think we can go through the C.V. and
14 discuss specific projects I worked on that are
15 relevant. As I said, this is a summary of 45 years of
16 experience in industry.

17 Q My question was: There was not any formal
18 process to proclaim you an expert in any of the
19 things listed under the heading "Expertise" in your
20 C.V.; correct?

21 A When you say "formal process," I'm not quite
22 sure I follow exactly what you're thinking of.

23 Q For example, have any of your colleagues
24 told you that you are an expert in computer vision,
25 for example?

1 MR. STAMATOPOULOS: Objection, form.

2 THE WITNESS: Again, my industry
3 experience is what's listed in this expertise.

4 BY MR. KONSTANTAKOPOULOS:

5 Q The experience you have listed under the
6 many years of work you have performed; is that fair?

7 A I'm sorry, say it again.

8 Q This list reflects the experience you have
9 after working many years in the field -- in the
10 field; is that fair?

11 A This is a list of the areas that I've been
12 working on in the industry, yes.

13 Q Are you familiar with the IEEE?

14 A I am. I am a member.

15 Q Are you familiar with the ACM?

16 A I've heard of it.

17 Q Are you a member of the ACM?

18 A I don't believe so.

19 Q Are you a member on any other professional
20 organizations other than the IEEE?

21 A I don't believe so.

22 Q On Page 1, you also list the consulting
23 areas; correct?

24 A That's correct.

25 Q Would it be accurate to assume that you

1 provide consulting services only for the topics that
2 you perceive yourself an expert?

3 A These are consulting areas that I have been
4 involved in over the 45 years and that I feel
5 comfortable with.

6 Q Do you see a topic "Hardware Simulation
7 and Compilation"?

8 A Yes.

9 Q This topic is not listed under the heading
10 experience; correct?

11 MR. STAMATOPOULOS: Objection.

12 THE WITNESS: I'm sorry, I didn't quite
13 catch that whole question.

14 BY MR. KONSTANTAKOPOULOS:

15 Q The topic "Hardware Simulation and
16 Compilation" is not listed under the heading
17 experience; correct?

18 MR. STAMATOPOULOS: Objection, form.

19 THE WITNESS: It would be within the
20 category of ASIC and FPGA design.

21 BY MR. KONSTANTAKOPOULOS:

22 Q Also the topic network architecture is not
23 listed under the heading "Expertise"; right?

24 A It would be under the category digital
25 switching technologies or telecom protocols.

1 Q So network architecture is under the
2 digital switch or under network protocol?

3 A I'm sorry, which one are you pointing to? I
4 may have misheard you.

5 Q I'm asking generally, network architecture
6 is not an expertise that you list under your topic
7 of expertise; correct?

8 MR. STAMATOPOULOS: Object to form.

9 THE WITNESS: I list network protocols and
10 protocols are clearly part of an architecture.

11 BY MR. KONSTANTAKOPOULOS:

12 Q Are they equivalent?

13 MR. STAMATOPOULOS: Objection, form.

14 THE WITNESS: I would say that a network
15 protocol is a definition -- more precise definition
16 of what may be an architecture, although it doesn't
17 have to be. It could be.

18 BY MR. KONSTANTAKOPOULOS:

19 Q So why do you understand a network
20 architecture to be?

21 A So an architecture in general is a
22 description -- for an engineer, it's a high-level
23 description of a system or a set of systems. A
24 network architecture is an architecture designed for a
25 network.

1 Q And what do you understand a network
2 protocol to be?

3 A So the protocol definition is a means to
4 describe that architecture in more detail.

5 Q Please turn to Page 2 of your C.V.

6 A Okay.

7 Q Do you see the heading "Network
8 Protocols"?

9 A I do.

10 Q Do you see TCP/IP?

11 A I do.

12 Q TCP/IP was designed to run independent of
13 a network architecture; correct?

14 A It definitely would be part of an
15 architecture and it would describe that element of it.

16 Q Well, would TCP/IP, the protocol -- would
17 the TCP/IP protocol define the set of systems that
18 would make up the architecture?

19 MR. STAMATOPOULOS: Objection.

20 THE WITNESS: I'm sorry, say that again,
21 please.

22 BY MR. KONSTANTAKOPOULOS:

23 Q Would the TCP/IP protocol define the set
24 of systems that would make up the network
25 architecture?

1 MR. STAMATOPOULOS: Objection.

2 THE WITNESS: So TCP protocol has a
3 specific purpose and the TCP protocol would be used
4 in an architecture. But at the same time, the TCP
5 protocol has its own architecture on how it was
6 designed.

7 BY MR. KONSTANTAKOPOULOS:

8 Q Okay. I think we're getting to an
9 understanding here.

10 So a protocol can be used in a network
11 architecture; correct?

12 A A protocol has an architecture. It also can
13 be used in larger architecture.

14 Q The same protocol, for example, TCP/IP,
15 can be used in more than one network architecture;
16 correct?

17 MR. STAMATOPOULOS: Object to the form.

18 THE WITNESS: TCP/IP is a protocol within
19 a stack -- communication stack. Within the TCP/IP
20 protocol and the lower layers, it's pretty clearly
21 defined within its own architecture.

22 BY MR. KONSTANTAKOPOULOS:

23 Q Let's assume I have three nodes that make
24 up a network. Do you have that in mind?

25 A I might be in the diagram. I'm assuming

1 three nodes, but I don't understand what the
2 architecture of that would be.

3 Q Let's assume that the three nodes are
4 connected using a ring topology. Do you have that
5 in mind?

6 (Reporter clarification.)

7 THE WITNESS: That's a very --

8 MR. STAMATOPOULOS: Objection. I'm just
9 going to ask you, Miguel, let me lodge my objection.
10 I want to maybe have a second to process the
11 question before I make the objection because I don't
12 want to make extraneous objections.

13 So object to the form.

14 Sorry, Theo.

15 MR. KONSTANTAKOPOULOS: No problem.

16 THE WITNESS: There is a number of
17 different ways I can envision that and I'm not sure
18 I can be precise enough.

19 BY MR. KONSTANTAKOPOULOS:

20 Q Would the way that the nodes are connected
21 define the network architecture or the network
22 protocol?

23 MR. STAMATOPOULOS: Objection, form.

24 THE WITNESS: Do you have a diagram you
25 would like to point me to because I hate to make an

1 opinion on the fly without having a visualization of
2 what you're actually thinking of.

3 BY MR. KONSTANTAKOPOULOS:

4 Q That's fine, let's move on.

5 Page 1 of your C.V. lists the topic
6 "modems" under your expertise; correct?

7 A Correct.

8 Q I don't see the topic "modems" under the
9 areas of consulting starting on Page 1 and 2;
10 correct?

11 A That would be an omission because I've
12 consulted on modems.

13 Q Okay. How are you an expert in modems?

14 A At Philips Semiconductors in 1998, I
15 actually built a modem under a contract by Philips
16 Semiconductors. I designed it and developed the
17 architecture, I implemented it and submitted it to
18 them.

19 Q And did your design make it into a
20 product?

21 A It was a product when I gave it to them when
22 I handed the design over to them. Whether they
23 productized it and actually sent it to manufacturing,
24 I don't know.

25 Q And it was a standalone device that you

1 provided to Philips?

2 A That's correct.

3 Q The modem is a device that was connected
4 to a computer; correct?

5 A Yes, it was connected to a computer, it was
6 also connected to a telephone line.

7 Q So let me ask you more general question.
8 What are modems?

9 MR. STAMATOPOULOS: Objection, form.

10 THE WITNESS: At the time of the modem
11 that I designed, it was a communication method using
12 various types of audible signals to transport data
13 over a telephone line.

14 BY MR. KONSTANTAKOPOULOS:

15 Q So the device would implement the
16 communication method; right, using the various types
17 of signals to transport data. But the modem itself
18 was a peripheral device that would be connected to a
19 computer; correct?

20 MR. STAMATOPOULOS: Object to form.

21 THE WITNESS: In this case, it was a card
22 that could be inserted into a computer.

23 BY MR. KONSTANTAKOPOULOS:

24 Q And how would the modem card be connected
25 to the computer?

1 A I'm sorry, I didn't quite catch it.

2 Q Right. How would the modem card be
3 connected to the computer?

4 MR. STAMATOPOULOS: Object to form.

5 THE WITNESS: It was inserted into the
6 computer into one of the computer expansion buses.

7 BY MR. KONSTANTAKOPOULOS:

8 Q Okay. So it was connected through an
9 expansion bus on the computer; correct?

10 A Correct.

11 Q What other forms of modems are you aware
12 of?

13 A "Modem" is a very broad term that is used to
14 communicate the concept of transporting data through
15 various types of signaling.

16 Q My point is that modems nowadays are
17 included in computers or laptops; correct?

18 MR. STAMATOPOULOS: Object to form.

19 THE WITNESS: That depends on the type of
20 modem you're thinking about. The acoustical modems
21 no longer are included in computers, but there are
22 other types of things that are called modems that
23 transport data, yes.

24 BY MR. KONSTANTAKOPOULOS:

25 Q Let's go back to the modem that you

1 created. What kind of modem was that?

2 A That was an acoustical modem.

3 Q What is an acoustical modem?

4 A A modem that transports data across
5 signaling that was within the voice ranges that
6 telephone providers would provide.

7 Q So was it a dial-up modem back in the
8 days?

9 A It was a form of a dial-up modem.

10 Q And architectural modems were DSL modems;
11 correct?

12 (Reporter clarification.)

13 THE WITNESS: Those are also called
14 modems.

15 BY MR. KONSTANTAKOPOULOS:

16 Q Have you worked on any DSL modems?

17 A I haven't worked specifically, but I have
18 opined in legal cases on DSL modems.

19 Q And what DSL modems used to look like
20 around the time you were -- let me rephrase that.

21 Around the time that you were working on
22 modems, what did DSL modems look like?

23 MR. STAMATOPOULOS: Object to the form.

24 THE WITNESS: That's a broad question.

25 And DSL modems, I would have to go back and look at

1 the state of the art at the time of 1997 and I
2 haven't formed an opinion or -- you know, at the
3 time I would have to go back and look at what the
4 state of the art was.

5 I would be happy to do that for you, but
6 sitting here right now, I didn't work on DSL in
7 1997, but I did work on a number of cases related to
8 that in the 2000s.

9 BY MR. KONSTANTAKOPOULOS:

10 Q Let me give you another question.

11 Did DSL -- let me rephrase that.

12 Could DSL modems be inserted into a
13 computer like the modem that you designed?

14 MR. STAMATOPOULOS: Objection to form.

15 THE WITNESS: When you say "inserted into
16 the computer," do you mean through an expansion bus?

17 BY MR. KONSTANTAKOPOULOS:

18 Q That would be one way, correct.

19 A What else do you have in mind?

20 Q I remember that modems I used to use back
21 in the day around that time were external devices
22 that would connect maybe it used before in my
23 computer and also to a telephone jack.

24 Does that ring a bell?

25 A There were those kind of modems too.

1 Q Okay. So there were types of DSL modems
2 that could be connected to an expansion bus of the
3 computer and the other types of modems were
4 peripheral devices that would be hooked into the
5 computer via a cable; correct?

6 MR. STAMATOPOULOS: Object to the form.

7 THE WITNESS: There are also wireless
8 modems. There are a wide range of different kinds
9 of modems.

10 BY MR. KONSTANTAKOPOULOS:

11 Q So what kind of modems you can think of?
12 Can you list them?

13 MR. STAMATOPOULOS: Objection to form.

14 THE WITNESS: I haven't come with a list
15 today. But I think I just listed a number of them.

16 BY MR. KONSTANTAKOPOULOS:

17 Q Let me summarize the list and then I can
18 move on.

19 So would it be fair to say that back
20 around 1997 to 1998, there were DSL modems that
21 could be inserted into a computer through an
22 expansion bus, there were other peripheral devices
23 and there were also wireless modems; correct?

24 A Can you restate that? I did not catch all
25 the list there.

1 Q I listed three types. One type was the
2 type of DSL modem that would be inserted into a
3 computer through an expansion bus.

4 The second type would be a DSL modem as a
5 peripheral device to a computer. And the third type
6 would be a wireless DSL modem.

7 Is that accurate?

8 A Well, we were talking about modems. I did
9 not realize you were specifically limiting it to DSL.

10 DSL is a technology that's used for
11 transporting across existing telecommunications
12 wires, twisted pair, that the DSL would transmit
13 data between the central office and the -- and a
14 home or vice versa.

15 With regard to modems, I think that in
16 general, outside of DSL, I think your list is
17 accurate, but within DSL, there is a -- DSL modems
18 are specifically designed between -- to operate
19 between central offices and the subscribers.

20 Q So these DSL modems would be peripheral
21 devices in two offices connected to each other?

22 MR. STAMATOPOULOS: Object to the form.

23 THE WITNESS: Well, at the subscriber
24 location, they could come in a variety different
25 packages, however it's packaged.

1 Within the central office, they have
2 different packaging mechanisms to consolidate those
3 modems.

4 BY MR. KONSTANTAKOPOULOS:

5 Q So let's take each case. Let's focus on
6 the subscriber side.

7 You said there were a variety of different
8 packages. Do you remember -- again, I understand
9 it's been some time.

10 What kind of packages can you list?

11 MR. STAMATOPOULOS: Object to the form.

12 THE WITNESS: I don't have a listing from
13 25 years ago here with me today.

14 The requirement for a DSL modem is to be
15 able to transport data across twisted pair wiring
16 that exists between the central office and the
17 subscriber. The physical implementation, I'm sure
18 there are many, many of them, both at the subscriber
19 level as well as at the central office.

20 And they -- like I said, the physical
21 implementation is not the important thing that
22 describes what DSL does or how it operates.

23 BY MR. KONSTANTAKOPOULOS:

24 Q If I am a subscriber at my home, I would
25 share the DSL modem and I would connect it to my

1 computer and to a twisted pair line and that modem
2 would allow connectivity to a central location.

3 Is that a fair description of the
4 technology patented today?

5 MR. STAMATOPOULOS: Objection, form.

6 THE WITNESS: Well, that would have been
7 probably handled by technology support personal from
8 the telephone companies. It wouldn't have been done
9 by the individuals.

10 The actual physical implementation comes
11 in a variety of different packages and -- but the
12 primary important part is to provide high band with
13 signaling for data transport between a central
14 office and the subscriber.

15 BY MR. KONSTANTAKOPOULOS:

16 Q I do remember getting, for example, a
17 Netgear modem and connecting it myself to my
18 computer and to the wall and that would be enough to
19 connect; right?

20 Isn't that an accurate description of how
21 things used to work around 1999?

22 MR. STAMATOPOULOS: Objection to form.

23 THE WITNESS: Your Netgear modem was a
24 modem, was it a -- you didn't say it was a DSL
25 modem. And so I'm a little confused as to how to

1 answer that.

2 BY MR. KONSTANTAKOPOULOS:

3 Q Let's move on. I think I understand your
4 answers.

5 (Discussion off the record.)

6 MR. KONSTANTAKOPOULOS: Let's go off the
7 record.

8 (Recess taken.)

9 BY MR. KONSTANTAKOPOULOS:

10 Q Welcome back, Mr. Gomez. You do
11 understand that you're still under oath; correct?

12 A I do.

13 Q Did you communicate with anyone during the
14 break?

15 A No.

16 Q Can you please turn to Page 2 of your
17 C.V.?

18 A I'm there.

19 Q We've talked about the topic networking
20 protocols before. You list TCP/IP and Ethernet;
21 correct?

22 A Those are on the list.

23 Q Both protocols connect users to the
24 Internet; correct?

25 A Those protocols are at different layers

1 within the OSI model, protocol model or protocol stack
2 model. They can be used in conjunction and they both
3 would connect users to the Internet through their
4 particular layer of the OSI model.

5 Q You mentioned before the TCP/IP protocol
6 stack. This is what you're referring to?

7 A Yes, it's the protocol -- it's the
8 communication stack defined by the OSI.

9 Q So the TCP/IP protocol essentially works
10 together with the Internet protocol and allows the
11 user to connect to the Internet; is that correct?

12 A It can.

13 Q Can you explain how it can?

14 A Well, TCP is a Layer 4, IP is Layer 3 and
15 there would be a MAC layer and then there would be a
16 physical layer, which might be the Ethernet.

17 Q Now, can the TCP/IP protocol work without
18 the Ethernet protocol?

19 A It could work with a different protocol
20 other than Ethernet.

21 Q What other protocols can the TCP/IP
22 protocol work with?

23 A There is a large number of them. You know,
24 there's a wide variety of them. Frame relay comes to
25 mind.

1 You know, there's -- over the years there
2 has been a number of different physical interfaces
3 that were defined.

4 Q Is ATM one of them?

5 A That TCP/IP would work with, is that the
6 question?

7 Q No. If ATM is another protocol at the
8 physical layer?

9 A ATM is another protocol that's defined
10 separately from TCP/IP, although ATM I guess in theory
11 could use Ethernet. It's a different protocol other
12 than TCP/IP.

13 Q Can the Ethernet protocol work without a
14 TCP/IP protocol to connect a user to the Internet?

15 A When you say the Internet, you're talking
16 about the Internet as we know it today as opposed to
17 what was available in 1998, or are you just talking
18 about a local area network?

19 Q Let's talk about the Internet in 1998.
20 Let me state the question again.

21 Can the Ethernet protocol work without the
22 TCP/IP protocol to connect a user to the Internet in
23 1998?

24 A The Internet protocol would communicate with
25 a Layer 2 protocol such as the -- that would be a

1 switched protocol. And switching within local area
2 networks or within networks was doable in 1998.

3 Connecting to the Internet requires -- is
4 often done through routing, although Cisco had
5 implementations in which they used the MAC address
6 to provide routing.

7 So it's a complicated question because of
8 the variations that people were experimenting with
9 back in those days.

10 Q And let me clarify something for the
11 record.

12 You said the Ethernet protocol would
13 communicate with the Layer 2 protocol; right, not
14 the Internet protocol?

15 A That's the next layer up in the protocol
16 stack that it would communicate with.

17 Q I'm just clarifying for the record. I see
18 in the transcription: The Ethernet protocol would
19 communicate with a Layer 2 protocol.

20 I think you said the Ethernet protocol;
21 correct?

22 A I would have to go look at what I actually
23 said. But the physical layer needs to have a MAC
24 layer addressing mechanism on top of it.

25 Q On top of what?

1 A That it would connect to. So the OSI
2 protocol stack has two layers. The lowest layer is
3 the physical interface.

4 In order to operate the physical
5 interface, you need a layer above that which would
6 manage the physical interface. And that's usually
7 the MAC layer interface or the Layer 2.

8 Q Are you familiar with the network
9 interface layer of the TCP/IP protocol stack?

10 A I'm sorry, the question again? Am I
11 familiar with the --

12 Q Network interface layer of the TCP/IP
13 protocol stack?

14 A I'm familiar with the layers within the OSI
15 model. I'm not quite sure where your question is
16 going.

17 Q So the TCP/IP protocol is not part of the
18 OSI model; right?

19 A It's part of the protocol stack that's used
20 for communicating packets across the Internet.

21 Q Right. So the OSI model that we're
22 referring to is the application layer, the
23 presentation layer, the session layer, the transport
24 layer, the network layer, the data link layer and
25 the physical layer; correct?

1 A I would have to go back and look at the OSI
2 model. But the protocol model that we're talking
3 about here for TCP/IP has several layers that are both
4 above and below it.

5 The TCP/IP layer, it consists of Layers 4
6 and Layer 3 and then the MAC layer underneath that
7 is Layer 2. And the physical interface, that would
8 be Ethernet or some other physical layer protocol.

9 So that's what we're communicating here.

10 Q Okay. Thanks for the explanation.

11 You mentioned the Ethernet protocol.
12 Ethernet protocol, that can be used to connect nodes
13 in a local area network?

14 (Reporter clarification.)

15 MR. STAMATOPOULOS: Objection to form.

16 THE WITNESS: It's one of many different
17 protocols that could be used in a local area
18 network.

19 BY MR. KONSTANTAKOPOULOS:

20 Q Is token ring the protocol that can be
21 used to connect nodes in a local area network?

22 MR. STAMATOPOULOS: Objection, form.

23 THE WITNESS: There are many different
24 types of token ring protocols. Token ring is a
25 concept more than a protocol.

1 It's a concept of sending data across a
2 network in which a token is also passed and the
3 token represents the permission to communicate over
4 that link.

5 BY MR. KONSTANTAKOPOULOS:

6 Q But you can think a protocol that was a
7 type of a token ring protocol that can be used to
8 connect nodes in a local area network; correct?

9 A I'm sorry, I did not quite catch the whole
10 question.

11 Q But you can think of a protocol that was a
12 type of a token ring protocol that can be used to
13 connect nodes in a local area network; correct?

14 A Are you asking me if I can think of a
15 specific one?

16 Q Yes, any token ring protocols.

17 MR. STAMATOPOULOS: Objection.

18 THE WITNESS: Back in 1983, I used one
19 from IBM that was a token passing.

20 BY MR. KONSTANTAKOPOULOS:

21 Q Token passing, thank you. I didn't want
22 to cut you off, I'm sorry.

23 (Reporter clarification.)

24 BY MR. KONSTANTAKOPOULOS:

25 Q I think I asked you before, but let me

1 clarify. The TCP/IP protocol was designed to be
2 independent of the underlying layer technology;
3 correct?

4 MR. STAMATOPOULOS: Object to form.

5 THE WITNESS: The purpose of the different
6 layers is to abstract one layer away from the other.

7 BY MR. KONSTANTAKOPOULOS:

8 Q How does the TCP/IP protocol achieve this
9 goal?

10 A Which goal is that?

11 Q How does the TCP/IP protocol can work
12 independent of the underlying layer, for example,
13 Ethernet versus token passing?

14 MR. STAMATOPOULOS: Object to form.

15 THE WITNESS: It would do that through the
16 concept of abstraction.

17 BY MR. KONSTANTAKOPOULOS:

18 Q Can you explain what this means?

19 MR. STAMATOPOULOS: Objection.

20 THE WITNESS: Abstraction is the concept
21 of providing a method to allow one layer to
22 operate -- in order to interoperate with various
23 different types of -- other implementations of a
24 different layer.

25

1 BY MR. KONSTANTAKOPOULOS:

2 Q Let's assume you have a local area network
3 that implements the Ethernet protocol. Do you have
4 that in mind?

5 A Okay.

6 Q Is the Ethernet protocol a packet-based
7 protocol?

8 MR. STAMATOPOULOS: Objection.

9 THE WITNESS: The Ethernet protocol
10 transports data and that data is -- that data has
11 headers which would be part of a packet.

12 BY MR. KONSTANTAKOPOULOS:

13 Q Now, two nodes on a local area network
14 that implement the Ethernet protocol communicate by
15 sending these packets; correct?

16 MR. STAMATOPOULOS: Objection, form.

17 THE WITNESS: I'm not sure I understand
18 the question. Can you repeat it, please?

19 BY MR. KONSTANTAKOPOULOS:

20 Q Two nodes on a local area network that
21 implement the Ethernet protocol communicate by
22 sending data in the form of packets; correct?

23 MR. STAMATOPOULOS: Objection.

24 THE WITNESS: So two nodes that
25 communicate are sending information between them and

1 it depends on -- the structure of the information
2 depends on where you look at it in the protocol
3 stack.

4 BY MR. KONSTANTAKOPOULOS:

5 Q So you mentioned before that the Ethernet
6 protocol transports data and that data is header,
7 which would be part of a packet; correct?

8 MR. STAMATOPOULOS: Objection, form.

9 THE WITNESS: So your question was about
10 the nodes. And you asked whether the nodes send --
11 how the nodes send data.

12 And I said that depends on the type -- the
13 structure of the data depends on -- where you're
14 looking at it in the protocol stack.

15 BY MR. KONSTANTAKOPOULOS:

16 Q The first node on the local area network
17 can send a packet to a second node; correct?

18 A Again, it depends on where you look at it.
19 The structure of the data is depending on where you
20 look at it in the protocol stack.

21 Q What layer in the protocol stack would
22 include the packets sent from the node?

23 A I'm not sure I can answer that. Because it
24 depends on the physical interface that you've
25 implemented.

1 Q We're talking about the Ethernet protocol.

2 A Is that one -- that's just one example or
3 one type of transmission protocol.

4 Q And for purposes of this hypothetical,
5 I've asked you to assume that there is a local area
6 network that implements the Ethernet protocol; is
7 that okay?

8 A Hypothetical?

9 Q Hypothetical, correct.
10 So two nodes in the local area network
11 implement the Ethernet protocol. Do you have that
12 in mind?

13 A So they are directly connected through the
14 Ethernet, but they would have to go to some kind of a
15 switch box. So it's a little bit more complicated
16 than that, because two nodes cannot communicate
17 directly together.

18 Q It's fine to assume whatever structure you
19 need to connect the two nodes.

20 So under this assumption, how would the
21 first node send data to the second node?

22 MR. STAMATOPOULOS: Object to form.

23 THE WITNESS: Well, the first node would
24 send data to the second node through the protocol
25 stack.

1 BY MR. KONSTANTAKOPOULOS:

2 Q How would the data from the first node
3 know how to reach the second node?

4 MR. STAMATOPOULOS: Object to form.

5 THE WITNESS: How would it know to reach
6 the second node?

7 BY MR. KONSTANTAKOPOULOS:

8 Q Correct.

9 A It would have to have the address of the
10 second node.

11 Q What would the address look like?

12 MR. STAMATOPOULOS: Object to form.

13 THE WITNESS: Again, it depends on -- you
14 know, it depends on which addressing mechanism
15 you're using in the protocol stack. You know,
16 there's IP addressing, there's MAC addressing, so
17 there's various different types.

18 BY MR. KONSTANTAKOPOULOS:

19 Q I'm talking about a local area network
20 that does not connect to the Internet. Do you have
21 that in mind?

22 A So you're just talking about the simplest
23 addressing mechanism available?

24 Q Correct.

25 A Which would be at the lowest layer of the

1 stack. That may not be the simplest, but it's the one
2 at the lowest layer of the stack. So like a MAC
3 address.

4 Q So that MAC address would be included in
5 the -- in a header sent by the first node to the
6 second node?

7 MR. STAMATOPOULOS: Object to form.

8 THE WITNESS: Again, it depends on the
9 physical interface and how that's organized.

10 But -- and generally, it would go through
11 a switching, so there's some discovery on what the
12 address would be. But the addressing is required
13 for being able to direct it to the correct place.
14 BY MR. KONSTANTAKOPOULOS:

15 Q So the addressing is required for being
16 able to direct the data to its intended recipient;
17 correct?

18 A There has to be an addressing -- one more
19 time on the question. I didn't quite --

20 Q So the addressing is required for being
21 able to direct the data to each intended recipient;
22 correct?

23 Let me rephrase that.

24 You mentioned MAC addressing. So MAC
25 addressing is one way to address the data such that

1 the data reaches its intended recipient; correct?

2 MR. STAMATOPOULOS: Object to form.

3 THE WITNESS: That's one -- there's many
4 ways to do this. The MAC addressing is one example
5 of that.

6 BY MR. KONSTANTAKOPOULOS:

7 Q Okay. So now, let's assume you have a
8 local area network that implements the token ring
9 protocol. Another example, let's use the token
10 passing protocol.

11 Do you have that in mind?

12 MR. STAMATOPOULOS: Object to form.

13 THE WITNESS: No, I don't. Can you
14 describe that a little bit, or a picture would
15 actually be more helpful.

16 BY MR. KONSTANTAKOPOULOS:

17 Q Can the token passing protocol be
18 implemented to form a local area network?

19 MR. STAMATOPOULOS: Object to form.

20 THE WITNESS: Again, it's difficult for me
21 to answer that without concrete visualizations.
22 Because I'm not sure I'm thinking of the same thing
23 you are.

24 One more time on the question.

25

1 BY MR. KONSTANTAKOPOULOS:

2 Q Yes. Can the token passing protocol be
3 implemented to form a local area network?

4 MR. STAMATOPOULOS: Same objection.

5 THE WITNESS: So the term "local area
6 network" is very broad. It just simply means that
7 it's a system that's designed to work within a local
8 area.

9 So given that you have a very specific
10 implementation of a token passing mechanism and
11 you're trying to have me discuss whether it can fit
12 within a very broad term, I mean, local area network
13 that's -- the question is not well balanced.

14 BY MR. KONSTANTAKOPOULOS:

15 Q Let's assume I have a system designed to
16 work within a local area. Do you have that in mind?

17 MR. STAMATOPOULOS: Objection to form.

18 THE WITNESS: Okay. General system
19 working within a local area.

20 BY MR. KONSTANTAKOPOULOS:

21 Q And let's assume that system has different
22 nodes. Do you have that in mind?

23 MR. STAMATOPOULOS: Objection to form.

24 THE WITNESS: Okay. Again, this is a
25 hypothetical?

1 BY MR. KONSTANTAKOPOULOS:

2 Q Correct.

3 A I'm visualizing something. I'm not entirely
4 sure that we're visualizing the same thing.

5 But go ahead and ask your question.

6 Q Can the token passing protocol be used so
7 that the nodes can exchange data among each other?

8 MR. STAMATOPOULOS: Object to form.

9 THE WITNESS: Again, it's very specific
10 concept and a very broad term, "local area
11 networks." I'd have to think about that a little
12 bit more.

13 But I'm sure that -- well, you know, if
14 you have -- what you're describing here as a
15 physical interface with the token passing and that's
16 different than the Ethernet one that we discussed
17 before.

18 BY MR. KONSTANTAKOPOULOS:

19 Q Correct.

20 A Correct.

21 And you're wondering whether or not they
22 perform the same function basically.

23 Q I'm trying to understand how in this
24 particular instance where we have a token passing
25 protocol, how would the nodes communicate versus the

1 case when we had the Ethernet protocol?

2 A So just because of the concept of the token
3 doesn't necessarily change the physical interface.

4 Q Is there any kind of addressing scheme
5 required in the token passing protocol
6 implementation such that a node can send data to a
7 different node?

8 A Not necessarily.

9 MR. STAMATOPOULOS: Objection to form.

10 THE WITNESS: You know, token passing
11 is -- could be constructed such that it would always
12 just connect to its next neighbor and doesn't
13 require addressing.

14 But addressing often is implemented, but I
15 don't think it's necessary if you understand who
16 your next neighbor is.

17 BY MR. KONSTANTAKOPOULOS:

18 Q Now, let's assume in the hypothetical we
19 had the local area network that implements the
20 Ethernet protocol and the second local area network
21 that we just discussed that implements the token
22 passing protocol.

23 Do you have that in mind?

24 A Say that again, I'm sorry. I just missed
25 it.

1 Q No problem.

2 So we discussed about two different local
3 area networks, one implementing the Ethernet
4 protocol and the second implementing the token
5 passing protocol.

6 Do you have that in mind?

7 A Well, as I said before, token passing is
8 more of a concept and it can work with different
9 physical interfaces.

10 Q If one node in the first local area
11 network with an Ethernet protocol was to send data
12 to the second local area network in a node in the
13 second area -- local area network, can someone
14 connect the two local area networks to allow this
15 communication?

16 MR. STAMATOPOULOS: Object to form.

17 THE WITNESS: So let me understand this.
18 You have a -- you said within the token passing
19 network? I'm sorry, maybe you could break that
20 down.

21 BY MR. KONSTANTAKOPOULOS:

22 Q I have a node in the Ethernet local area
23 network and I have a different local area network
24 and I have a node in the second local area network
25 that implements the concept of token passing.

1 I'm just wondering how someone would
2 connect these two different local area networks such
3 that a node in the first local area network can send
4 data to a node in the second local area network?

5 MR. STAMATOPOULOS: Object to form.

6 THE WITNESS: So it really depends on the
7 implementation. You know, token passing, as I've
8 been saying, is a concept that could be applied to
9 the different layers.

10 Token could be -- you know, depending on
11 whatever Layer 2 you designed or whatever Layer 3 or
12 whatever Layer 4, a token could exist in any --
13 could emanate from any one of those layers.

14 The one I worked on in 1983 emanated at
15 the Layer 2, so it was a token that was passed
16 between different nodes.

17 The hypothetical you're giving me is -- I
18 know you're trying to constrain it, but it's a
19 fairly broad topic and it really depends on the
20 implementation.

21 BY MR. KONSTANTAKOPOULOS:

22 Q Let's assume, because you have that
23 knowledge, that we're talking about an
24 implementation of a token passing at the Layer 2, so
25 it is a token that's passed between the different

1 nodes.

2 Do you have that in mind?

3 MR. STAMATOPOULOS: Object to form.

4 THE WITNESS: Okay. So we have a token
5 that's further low level and then as I said before,
6 tokens are used to implement communication
7 strategies where the node that possesses the token
8 can communicate.

9 BY MR. KONSTANTAKOPOULOS:

10 Q How would a node in the local area network
11 that implements the Ethernet protocol send data to a
12 node in the second local area network that
13 implements the lower -- the low level token passing?

14 MR. STAMATOPOULOS: Object to form.

15 THE WITNESS: Well, if it's the next
16 neighbor and it was daisy chain, for example, they
17 could just send it.

18 If it wasn't, if it was something more --
19 if it was an internetwork protocol, so they're
20 communicating across a -- using a hierarchical
21 addressing, for example, then it would be requiring
22 some kind of mechanism to target that data.

23 BY MR. KONSTANTAKOPOULOS:

24 Q What do you mean by a mechanism to target
25 that data?

1 A So if it's a next neighbor, they can just --
2 on a daisy chain, they can just communicate to that
3 the next neighbor.

4 If it's out-of-band addressing, or it
5 would be a selection rather, they could select that
6 node.

7 If it's in-band addressing, they would
8 have to be able to specify where it's targeted to.

9 There's lots of different ways you can
10 implement this.

11 Q Let's focus on the last two ways you
12 mentioned, the out-of-band addressing and then
13 the -- you said in-band addressing?

14 A In-band.

15 Q In-band, okay.

16 So focus on the out-of-band addressing,
17 how would addressing be specified in that instance?

18 MR. STAMATOPOULOS: Object to form.

19 THE WITNESS: It might be done through a
20 selection process.

21 BY MR. KONSTANTAKOPOULOS:

22 Q What is the selection process?

23 A It could be just simply a set of signals
24 that select it.

25 Q Can you elaborate a little more? What

1 kind of signals would that be?

2 A You know, it could be traces on the report.
3 It could be extra wires. It depends on the system.

4 Q You said traces on the port?

5 A We were talking about the local area
6 network, so if it's within one of the switching
7 mechanisms, it would just be additional traces.

8 If it's outside of that, it might require
9 additional wires, or it could be out-of-band
10 signaling within the -- as separate from the data.

11 Q What do you mean by out -- separate
12 signaling from the data?

13 MR. STAMATOPOULOS: Object to form.

14 THE WITNESS: Just what I mean, it would
15 be data that's -- a signaling mechanism separate
16 from the data, how the data is sent.

17 BY MR. KONSTANTAKOPOULOS:

18 Q So would it be like an additional header?

19 MR. STAMATOPOULOS: Object to form.

20 THE WITNESS: I haven't really described
21 exactly what it is. It could be some other kind of
22 transmission mechanism.

23 BY MR. KONSTANTAKOPOULOS:

24 Q Would that transmission mechanism include
25 a header that would identify a node in the second

1 local area network?

2 MR. STAMATOPOULOS: Object to form.

3 THE WITNESS: You know, that's a
4 hypothetical. I don't know. I would have to think
5 about it.

6 I haven't created an opinion as to how
7 that would work. We're just doing hypotheticals
8 here.

9 BY MR. KONSTANTAKOPOULOS:

10 Q So you mentioned before that the local
11 area network that implements the Ethernet protocol
12 can use MAC addresses as the addressing mechanism;
13 correct?

14 MR. STAMATOPOULOS: Object to form.

15 THE WITNESS: I think we had that
16 conversation, yes.

17 BY MR. KONSTANTAKOPOULOS:

18 Q So the nodes within that particular LAN
19 would insert the MAC address over the destination in
20 the header of the packet?

21 MR. STAMATOPOULOS: Object to form.

22 THE WITNESS: I'm sorry, one more time on
23 the question.

24 BY MR. KONSTANTAKOPOULOS:

25 Q The nodes within the particular LAN would

1 insert the MAC address of the recipients in the
2 header of the packet?

3 MR. STAMATOPOULOS: Object to form.

4 THE WITNESS: This was with regard to the
5 Ethernet?

6 BY MR. KONSTANTAKOPOULOS:

7 Q Correct.

8 A So, again, the Layer 2 addressing is used to
9 route the data.

10 Q And using MAC addressing to route the data
11 is not a hierarchical addressing scheme; correct?

12 MR. STAMATOPOULOS: Object to form.

13 THE WITNESS: Well, it's definitely part
14 of a hierarchical addressing system. It can be then
15 utilized with IP addressing, which then could be
16 utilized with TCP flows.

17 So it definitely fits within the
18 hierarchy.

19 BY MR. KONSTANTAKOPOULOS:

20 Q Right. Let me define the bounds of my
21 hypothetical. Because my hypothetical, I have the
22 simplest LAN implementation, not connected to the
23 Internet.

24 When, in that instance, nodes use MAC
25 addresses to send data to other nodes, that

1 addressing scheme is not a hierarchical addressing
2 scheme; correct?

3 MR. STAMATOPOULOS: Object to form.

4 THE WITNESS: The MAC address is designed
5 so that you can interconnect multiple local area
6 networks.

7 And as such, in order -- so that data that
8 was intended for transmission within one local area
9 network would stay within one local area network and
10 yet the MAC address has the ability to identify
11 other areas -- other local area networks and then be
12 able to transport only select data to the other
13 local area networks.

14 Whether it's within one local area network
15 standing in isolation or whether it's using other
16 local area networks or connected to other local area
17 networks, it's designed to work in systems where
18 hierarchy is important.

19 BY MR. KONSTANTAKOPOULOS:

20 Q I understand that it can be used. But
21 that's outside the bounds of my hypothetical, using
22 other local area network.

23 I just want you to think in the
24 hypothetical when there is an isolated local area
25 network, one node connects -- let me rephrase it.

1 One node can address another node using
2 the MAC address of the second node; correct?

3 A I'm sorry, I did not quite catch where the
4 question was going. Say it again.

5 Q In an isolated local area network, one
6 node can send data to a different node in the local
7 area network by using the MAC address of the
8 different node in the header; correct?

9 MR. STAMATOPOULOS: Object to form.

10 THE WITNESS: Just because the specific
11 hypothetical description is limited to a local area
12 network in isolation does not change the
13 characteristics of the communication protocol that
14 are being employed.

15 You know, it's still a -- it's still a
16 hierarchical addressing mechanism that can be used
17 with greater hierarchy or multiple levels -- it can
18 still be used with in a system that has multiple
19 levels of hierarchy.

20 That's the whole point of hierarchy, even
21 if you just had one level -- I'm trying to think of
22 a good analogy.

23 But if you had a staircase and you had 15
24 stairs on that staircase, just because you only have
25 the first stair does not make it not a stair.

1 BY MR. KONSTANTAKOPOULOS:

2 Q But I don't think that's an equivalent
3 analogy because in my case, there are different
4 steps of the same level. So let's get the answer to
5 my question. I understand your answer but again,
6 please answer a different question.

7 I just want you to answer the hypothetical
8 that I am giving you.

9 In an isolated local area network, one
10 node can send data to a different node in the local
11 area network by using the MAC address of a different
12 node in the header of a packet; correct?

13 MR. STAMATOPOULOS: Object to the form and
14 to the scope of the question.

15 THE WITNESS: I'm not sure how that's any
16 different than what I've already answered, which is
17 that the addressing mechanism used is capable of --
18 is a hierarchical addressing mechanism.

19 BY MR. KONSTANTAKOPOULOS:

20 Q Again, I'm not talking about any
21 hierarchy, I'm just asking a simple question.

22 If one node is an isolated local area
23 network wants to send data to a different node in
24 that local area network, can the first node use the
25 MAC address of the second node in the header of the

1 packet?

2 MR. STAMATOPOULOS: Objection, same
3 objections.

4 THE WITNESS: Again, a MAC address is
5 used -- it means to locate the other -- that's
6 assuming we have a very hypothetical network, that
7 it's used in internetworking.

8 This is a network that is designed for the
9 Internet to be able to be used as a local area
10 network or to be used in internetworking.

11 BY MR. KONSTANTAKOPOULOS:

12 Q So if I understand correctly, the MAC
13 address either means locate the other node in my
14 hypothetical; correct?

15 A I said locate, but what I really mean is
16 that the address resolution protocol, which is a whole
17 different thing, would be doing the locating.

18 But the addressing mechanism would be one
19 hypothetical example of reaching another node.

20 Q And by the addressing mechanism, you mean
21 the addressing mechanism that uses MAC addresses;
22 correct?

23 MR. STAMATOPOULOS: Same objections.

24 THE WITNESS: So as we talked about
25 before, outside of your hypothetical, there's many,

1 many ways to do this. And the limitation of just
2 this one is not -- I haven't really opined on this
3 and it's not consistent with the descriptions in the
4 patents.

5 So I am a little confused as to where
6 you're going with this.

7 BY MR. KONSTANTAKOPOULOS:

8 Q I'm just trying to understand the
9 hypothetical. It's a simple hypothetical. I don't
10 understand where the confusion is. Let me try
11 again.

12 You said using MAC addresses is a way to
13 locate a node within a local area network; correct?

14 A Well, again, I said that address resolution
15 is the way that locating actually occurs.

16 Q So the MAC addressing, though; correct?

17 A I'm sorry?

18 Q Through the MAC addressing included in the
19 headers of a packet, for example; correct?

20 A Address resolution is a whole other thing on
21 how you locate where -- where a different node exists.

22 But through that process, you can identify
23 the address on which you need to access the other
24 node.

25 Q Through the process that uses MAC

1 addresses, you can identify the address on which you
2 need to access the other node; correct?

3 MR. STAMATOPOULOS: Objection, same
4 objections.

5 THE WITNESS: Can you break that question
6 down? Because I think you used MAC at addresses
7 twice there. I'm not quite sure, in two different
8 ways.

9 BY MR. KONSTANTAKOPOULOS:

10 Q Let me give back your answer. I was
11 following up on your answer.

12 You said that address resolution is a
13 whole other thing on how you locate where a
14 different node exists, but through that process you
15 can identify the address on which you need to access
16 the other node.

17 That was your answer and I followed up and
18 said: Through the process that uses MAC addresses,
19 you can identify the address on which you need to
20 access the other node; correct?

21 MR. STAMATOPOULOS: Same objections.

22 BY MR. KONSTANTAKOPOULOS:

23 Q Mr. Gomez, there is an outstanding
24 question. I'm not sure if you're confused.

25 Would you like me to repeat the question?

1 A If you could restructure it.

2 Q Let me try again.

3 A A MAC address is an address that can
4 uniquely identify a node in a local area network;
5 correct?

6 A MAC addresses are used to identify the MAC
7 layer of a node.

8 Q MAC addresses are used to identify the MAC
9 layer of a node assigned to that MAC address;
10 correct?

11 MR. STAMATOPOULOS: Objection, form.

12 THE WITNESS: A MAC address would be
13 assigned to that node's MAC layer.

14 BY MR. KONSTANTAKOPOULOS:

15 Q And using the MAC address, a packet with a
16 header that includes a particular MAC address can
17 reach the node which has been assigned to that
18 particular MAC address; correct?

19 MR. STAMATOPOULOS: Objection, form.

20 THE WITNESS: In this hypothetical in this
21 very one example, MAC addresses are used for data
22 transmission.

23 BY MR. KONSTANTAKOPOULOS:

24 Q So that's not the data, it's the
25 particular node who has -- who has been assigned

1 that particular MAC address; correct?

2 MR. STAMATOPOULOS: Same objections.

3 THE WITNESS: This is just within the one
4 local area network, not with any bridging or any
5 kind of -- this is your hypothetical where there's
6 just one local area network.

7 BY MR. KONSTANTAKOPOULOS:

8 Q Correct.

9 A MAC address is a hierarchical address that
10 is used in a very constrained way; is that correct?

11 Q You mentioned a hierarchical address. So
12 the MAC addresses define one level of another
13 system; correct?

14 MR. STAMATOPOULOS: Object to form.

15 THE WITNESS: Yeah, it's one level within
16 the protocol stack.

17 BY MR. KONSTANTAKOPOULOS:

18 Q Sorry. I didn't mean to cut you off.

19 A No, go ahead.

20 Q Let me try again so hopefully we can move
21 on.

22 So using -- let me rephrase again.

23 MAC addresses are used to identify the MAC
24 layer of the node assigned to that MAC address; is
25 that correct?

1 MR. STAMATOPOULOS: Object to form.

2 THE WITNESS: Can you say that again? I
3 want to parse it properly.

4 BY MR. KONSTANTAKOPOULOS:

5 Q Yes. MAC addresses are used to identify
6 the MAC layer of a node assigned to that MAC
7 address; correct?

8 MR. STAMATOPOULOS: Object to form.

9 THE WITNESS: MAC addresses are assigned
10 to -- the MAC layer uses MAC addresses.

11 BY MR. KONSTANTAKOPOULOS:

12 Q So the MAC layer of each node would be
13 assigned to a unique MAC address; correct?

14 MR. STAMATOPOULOS: Object to form.

15 THE WITNESS: I think a MAC address would
16 be assigned to a MAC layer of a node.

17 BY MR. KONSTANTAKOPOULOS:

18 Q By identifying the MAC layer of a node
19 using the MAC address, you can identify the node
20 itself; correct?

21 MR. STAMATOPOULOS: Object to form.

22 THE WITNESS: The node may have more than
23 one MAC address that they are assigned to.

24 BY MR. KONSTANTAKOPOULOS:

25 Q But identifying any of the MAC addresses

1 assigned to a node, you can uniquely identify the
2 node; correct?

3 MR. STAMATOPOULOS: Object to form.

4 THE WITNESS: Like I said, the MAC
5 addresses are assigned to a MAC layer of a node.

6 BY MR. KONSTANTAKOPOULOS:

7 Q And you can identify that node using the
8 MAC address assigned to the MAC layer of that node;
9 correct?

10 MR. STAMATOPOULOS: Object to form.

11 THE WITNESS: The MAC address that's
12 assigned to that MAC layer is a unique MAC address.

13 BY MR. KONSTANTAKOPOULOS:

14 Q The MAC address that's assigned to that
15 MAC layer is a unique MAC address for the particular
16 node; correct?

17 A For that node.

18 Q And using the MAC address is a way to
19 uniquely identify that particular node; correct?

20 MR. STAMATOPOULOS: Object to form.

21 THE WITNESS: So it's a unique address
22 that's been assigned to that node. And it's part of
23 the addressing mechanism.

24 BY MR. KONSTANTAKOPOULOS:

25 Q It's part of an addressing mechanism to

1 identify the particular node; correct?

2 MR. STAMATOPOULOS: Same objection.

3 THE WITNESS: Again, it's a unique address
4 that's been assigned. There are other addresses
5 that are assigned.

6 But if we're just in your hypothetical,
7 it's just the lowest layer, it's just the one,
8 that's the address that's assigned to it.

9 BY MR. KONSTANTAKOPOULOS:

10 Q Is it fair to assume that the TCP/IP
11 protocol can only be implemented on a
12 packet-switched network?

13 A Again, that's two layers there, that's
14 Layer 4 and Layer 3.

15 Q Right.

16 A So combined TCP/IP, or are you referring to
17 one particular layer?

18 Q Let's take each layer separately. Let me
19 give you the question.

20 The TCP protocol can only be implemented
21 on a packet-switched network; correct?

22 MR. STAMATOPOULOS: Objection.

23 THE WITNESS: TCP has to do with flows.
24 That doesn't necessarily pertain to packets.

25 But there are certainly flows and it's

1 interoperable with IP.

2 BY MR. KONSTANTAKOPOULOS:

3 Q Are you familiar with a TCP/IP packet?

4 A At the IP layer, there are packets.

5 Q So the IP protocol can only be implemented
6 on a packet-switched network; correct?

7 MR. STAMATOPOULOS: Object to form.

8 THE WITNESS: So at the IP layer, it's
9 designed to interpret data with headers, otherwise
10 known as packets.

11 But through encapsulation at the lower
12 layers doesn't necessarily have to be sending them
13 through a packet-switched network. It could be done
14 through a circuit-switched network.

15 BY MR. KONSTANTAKOPOULOS:

16 Q And what is circuit-switched network?

17 A A circuit-switched network would be
18 something that was more akin to sending switching
19 mechanisms that don't use packets.

20 Q So a lower level -- let me rephrase.

21 So a lower layer of the TCP/IP protocol
22 stack can use a circuit switch network but then at
23 the IP layer level, data with headers would be
24 formed and sent on that layer; correct?

25 MR. STAMATOPOULOS: Object to form.

1 THE WITNESS: So through encapsulation --
2 through abstraction rather, let's start with that,
3 every layer is designed to operate independently of
4 the others.

5 And through encapsulation, the lower
6 layers would take the IP packet and wrap around some
7 other transport mechanism.

8 BY MR. KONSTANTAKOPOULOS:

9 Q So is implementation of the token passing
10 protocol a circuit switch implementation?

11 A Say that again. Maybe you could define that
12 a bit more.

13 Q Again, I might not be remembering
14 correctly, but I thought you said that the token
15 passing protocol can be a circuit switch
16 implementation. Am I remembering correctly?

17 A Token passing is a concept in which a token
18 is passed from node to node and gives them permission
19 to access the communication system, in other words, to
20 transmit.

21 The physical implementation can vary, in
22 other words, the token is just simply a mechanism
23 that's being passed from node to node.

24 Q But the physical implementation can be a
25 circuit switch implementation that passes the token

1 from node to node; correct?

2 A That's a hypothetical. I haven't offered an
3 opinion on that, but it's entirely possible.

4 MR. KONSTANTAKOPOULOS: For the record,
5 it's the physical implementation, not the official.
6 It should be the physical implementation in the
7 previous question.

8 Q What is a packet-switched network then?

9 A So a packet-switched network is a broad term
10 that refers to the network that utilizes packets.

11 Q And in the TCP/IP protocol stack, some
12 layers can use packets like the IP protocol layer
13 but lower layers need not use packets; correct?

14 A Typically in the TCP/IP protocol stack, we
15 have a TCP layer, an IP layer, a MAC layer and a
16 physical layer that uses packets.

17 But there is no hard and fast requirement
18 that for a specific implementation or an ad hoc
19 implementation, that it couldn't be done
20 differently.

21 MR. KONSTANTAKOPOULOS: Is it okay to go
22 forward 20 more minutes and then break for lunch?

23 MR. STAMATOPOULOS: Miguel, does that
24 sound good to you?

25 THE WITNESS: I'm good.

1 BY MR. KONSTANTAKOPOULOS:

2 Q You mentioned the ARP; right, address
3 resolution protocol before? Am I correct?

4 A I did mention it before.

5 Q And the address resolution protocol sits
6 below the IP protocol in the protocol stack; is that
7 correct?

8 A Well, that's a separate thing all together.
9 That's a different specification.

10 Q Let me give you a more general question.
11 Where does the address resolution protocol
12 reside within the TCP/IP protocol stack?

13 A So the address resolution protocol utilizes
14 the TCP/IP protocol stack to transport data.

15 So it would -- I haven't provided an
16 opinion on this. I haven't studied it for this
17 particular question. But it is a protocol that's
18 utilized to resolve addresses within a network.

19 Q And what do you mean by resolving
20 addresses?

21 A Discover them.

22 Q Through what process?

23 A Through the protocol defined by the address
24 resolution protocol.

25 Q And I know we've mentioned the MAC

1 addressing scheme in connection with ARP. Can you
2 explain how an ARP process would discover a MAC
3 address?

4 A You know, as I said, I haven't formed an
5 opinion, I haven't come prepared to answer this
6 question.

7 But there is a discovery process in which
8 various types of discovery packets or requests are
9 sent out.

10 Q Can the ARP be used to resolve an IP
11 address to a MAC address?

12 A I'm sorry, say that again.

13 Q Can the address resolution protocol be
14 used to resolve an IP address to a MAC address?

15 MR. STAMATOPOULOS: Object to form.

16 THE WITNESS: Well, MAC address is a
17 switching protocol, IP is a routing protocol.

18 They use different mechanisms to be --

19 BY MR. KONSTANTAKOPOULOS:

20 Q So a MAC address can be resolved only to a
21 different MAC address?

22 MR. STAMATOPOULOS: Object to form.

23 THE WITNESS: As I've said before,
24 there's -- over the years, there has been many,
25 many, many different implementations and ways that

1 people have created routing protocols versus
2 switching protocols.

3 I would have to go back and study that. I
4 wouldn't want to be -- I wouldn't want to
5 incorrectly answer it. Because like I said, there's
6 many ways to implement these things.

7 MR. KONSTANTAKOPOULOS: Okay. Let's move
8 on then to the '904 patent. I have uploaded
9 Exhibit 1001 on Exhibit Share.

10 THE WITNESS: There it is, it's just slow.
11 Which one was it, which document?

12 BY MR. KONSTANTAKOPOULOS:

13 Q Exhibit 1001.

14 A Okay.

15 Q That's the '904 patent; correct?

16 A Correct.

17 Q Have you read the '904 patent?

18 A I have read the '904 patent.

19 Q And have you read the specification of the
20 '904 patent?

21 A I have read the specification.

22 Q Do you understand the specification of the
23 '904 patent?

24 A I believe I do understand it.

25 Q Is there any word in the specification of

1 the '904 patent that you do not recognize?

2 MR. STAMATOPOULOS: Object to form.

3 THE WITNESS: Do you want me to review the
4 whole patent again?

5 BY MR. KONSTANTAKOPOULOS:

6 Q From memory, when you were reviewing the
7 specification of the '904 patent, do you remember if
8 there was any word that you did not recognize?

9 A So there are a number of different
10 references to different specifications that are --
11 there's ATM. There is Internet protocol network IP.
12 There's digital subscriber line access multiplexer,
13 DSLAMs. There's references to VPI/VCI translation.
14 Many of these I have had experience with,
15 most of them in fact.

16 But with regard to ATM, I would need to
17 refresh myself on the VPI/VCI translations and I
18 haven't looked at that in 20 years.

19 Q Understood. Have you looked at the
20 drawings of the '904 patent?

21 A I have looked at the drawings.

22 Q Do you understand the drawings of the '904
23 patent?

24 A I believe I do understand the drawings of
25 the '904 patent.

1 Q And have you read the claims of the '904
2 patent?

3 A I've read the claims of the '904 patent.

4 Q Do you understand the claims of the '904
5 patent?

6 A With regard to my responses in my
7 declaration, I understand those claims.

8 Q Now, can I direct you to the abstract of
9 the '904 patent that's on Page 1?

10 A Give me a second.

11 Q The abstract refers to a physical
12 interface to a packet-switched network.

13 Do you see that?

14 A It says that "Network access apparatus
15 includes first and second master units, each having a
16 physical interface to a packet-switched network."

17 Q Right. So what is a physical interface?

18 A We've discussed physical interfaces in the
19 context of the protocol stack. Physical interfaces
20 would mean something that's concrete and may actually
21 embody some specific types of hardware but has a
22 physical definition.

23 Q Can the physical interface be a port to
24 the packet-switched network?

25 MR. STAMATOPOULOS: Objection to the form.

1 THE WITNESS: Ports are often associated
2 with physical interfaces.

3 BY MR. KONSTANTAKOPOULOS:

4 Q Let me give you the question again because
5 there was a problem with the transcription.

6 Can the physical interface be a port to
7 the packet-switched network?

8 A So in the Internet working protocol, there's
9 physical ports and there's logical ports. They are
10 different.

11 They both have the word "port."

12 Q I think you just answered that ports are
13 typically associated with physical interfaces. Was
14 that something that you said?

15 A That's not correct. I just said that
16 there's logical ports and there's physical ports.
17 They both have the word "port."

18 Q So is a physical port a physical interface
19 for a packet-switched network?

20 A Physical interface is just that, it's an
21 interface. I have not opined on whether a physical
22 port would be the same as a physical interface.

23 Q Can you look at Figure 5 of the '904
24 patent?

25 A You said Figure 5?

1 Q Correct.

2 A Okay.

3 Q Do you see the top chain of slaves with
4 the reference number 39?

5 A I'm sorry, I didn't catch that. 30 what?

6 Q Do you see the top chain of slaves with
7 the reference number 39?

8 A Yes.

9 Q So in the context of the '904 patent, can
10 you explain how a subscriber connected to a port on
11 the first slave of chain 39 would send the packet to
12 a subscriber connected to a port of the second slave
13 on chain 39?

14 MR. STAMATOPOULOS: Object to form.

15 THE WITNESS: So you're asking how data
16 would be transported from the first -- to the first
17 slave and then to the second slave?

18 BY MR. KONSTANTAKOPOULOS:

19 Q Correct.

20 A And is there something -- you're asking this
21 just within the context of the patent or something
22 that I opined on?

23 Q In the context of the patent.

24 A I think it's well described in Column 2
25 starting at Line 4 all the way through the -- through

1 56, there's many elements of how that works comprising
2 several different components.

3 Q How -- go ahead.

4 A I'm sorry, go ahead.

5 Q How would slave 2 be identified such that
6 the data from slave 1 can reach the proper port?

7 MR. STAMATOPOULOS: Object to form.

8 THE WITNESS: It says here that one of the
9 masters serves as an active master, through which
10 the slaves normally receive data packets from a core
11 network and transmit packets back up to the --
12 upstream to the network. The master is termed as
13 standby.

14 The slaves are connected in one or more
15 daisy chains between the active and standby masters,
16 and are configured so that both downstream and
17 upstream packets can be transmitted in either
18 direction among each of the chains.

19 So the data is transmitted from the whole
20 daisy chain.

21 BY MR. KONSTANTAKOPOULOS:

22 Q Right. But my question involved data
23 originating from a subscriber that appears as a
24 recipient and another subscriber.

25 What you described was a situation with a

1 downstream message from the network through the
2 active master to the slaves and the opposite packet
3 from a subscriber on a slave to the network.

4 My question was slightly different. Do
5 you see the distinction?

6 A No, I missed it because I thought you asked
7 me about how data gets transmitted from a first slave
8 to a second slave.

9 Q From a subscriber connected to a port on
10 the first slave to a second subscriber connected to
11 a port of the second slave, so it's communication
12 between subscribers from different slaves.

13 A The claims embody the description of the
14 invention and the Claim 1, Element 3 describes a
15 plurality of physical interface lines, which link the
16 slave units in one or more daisy chains, in which the
17 slave units are mutually connected in series by the
18 physical interfaces -- interface lines there between,
19 each daisy chain comprising at least the first slave
20 unit connected to one of the physical interface lines
21 to the first master.

22 A second slave unit connected to the first
23 slave unit but not to the first or second masters
24 and the last slave unit connected by one of the
25 other physical interface lines to the second master.

1 That's the third element. The first
2 element says that -- I should say the second element
3 says a plurality of slave units, each slave unit
4 comprising one or more ports to the respective
5 subscriber lines.

6 Then the first element is the first and
7 second master unit, each comprising a physical
8 interface to a packet-switched network.

9 So it's describing the invention of the --
10 it's describing the construction of the invention.

11 Q That describes the apparatus that is, for
12 example, embodied in Figure 5. My question relates
13 to the method of communicating between two
14 subscribers.

15 Let me give you a more specific question.

16 How would each slave in the daisy chain be
17 uniquely identified?

18 MR. STAMATOPOULOS: Object to the form.

19 THE WITNESS: Perhaps if you could point
20 me to where I opined on that. I don't really want
21 to be making opinions on the fly here.

22 But if I said that in my report, perhaps
23 you could point me to where I opined on that in my
24 report.

25

1 BY MR. KONSTANTAKOPOULOS:

2 Q Based on your understanding of the '904
3 patent, would each slave, for example, as we see
4 them on Figure 5, have a unique address?

5 A Each subscriber, is that what you said?

6 Q Each slave?

7 A Each slave. Well, they are daisy chained,
8 which means they may or may not have unique addresses.
9 It doesn't really specify and that's not part of the
10 invention.

11 Q If they don't have unique addresses, how
12 would they be addressed?

13 MR. STAMATOPOULOS: Object to the form.

14 THE WITNESS: Well, that's like me and you
15 talking right now. I don't need to know your
16 address, you're just in front of me.

17 BY MR. KONSTANTAKOPOULOS:

18 Q So would the second slave know that there
19 is a slave after it in the daisy chain because it's
20 the next neighbor?

21 MR. STAMATOPOULOS: Object to the form.

22 THE WITNESS: It says here in Column 2,
23 34 -- 33, and this is just one embodiment.

24 It says, "Preferably," although it's not a
25 requirement, "every packet passed between the

1 masters and the slaves has a pre-switch address. If
2 the packet is addressed to a particular slave, the
3 pre-switch on that slave conveys the packet to a
4 switch or switching fabric of the slave, which
5 routes the packet to the appropriate port."

6 BY MR. KONSTANTAKOPOULOS:

7 Q And so is the pre-switch address a unique
8 address that uniquely identifies a particular slave?

9 A If further says that "The pre-switch
10 similarly accepts packets carrying a 'next' address,
11 i.e., packets that are sent from one slave to its
12 immediate neighbor for topology detection and
13 diagnostics." So that's another capability.

14 And I believe also it's capable of --
15 another embodiment which is possible, on Line --
16 well, it starts at Line 34.

17 "If the packet is addressed to a
18 particular slave, the pre-switch on that slave
19 conveys the packet to a switch or switching fabric
20 of the slave, which routes it to the appropriate
21 port."

22 This is the element I was looking for:
23 "If the packet is a multicast packet with an
24 appropriate pre-switch address, the pre-switch both
25 conveys a copy of the packet to the switch or

1 switching fabric of the slave and passes the packet
2 on down the chain."

3 So as you can see here, there's many
4 different ways in which addressing can occur. These
5 are just embodiments. These are -- you know, these
6 are not a required but they are possible
7 embodiments.

8 Q Let me focus on an embodiment and then we
9 can break.

10 Let's focus on the embodiment discussed in
11 Column 2 starting on Line 34. And let me read that.

12 "If the packet is addressed to a
13 particular slave, the pre-switch on that slave
14 conveys the packet to a switch or switching fabric
15 of the slave, which routes the packet to the
16 appropriate port."

17 Let's have that in mind. And this is not
18 a multicast packet, okay? Do you have that in mind?

19 A Okay.

20 Q The sentence starts with, "If the packet
21 is addressed to a particular slave," and that
22 slave -- that address is the pre-switch address;
23 correct?

24 That's on Column 2, Line 33. "Preferably,
25 every packet passed between the masters and slaves

1 has a pre-switch address."

2 A It says the pre-switch on that slave conveys
3 the packet to a switch or switching fabric.

4 Q Correct. So is it fair to assume that in
5 this particular embodiment, each slave has a unique
6 address that can be used to address it?

7 A So I think the key part is the pre-switch on
8 that slave conveys the packet to a switch or switching
9 fabric.

10 Q How would the pre-switch from that slave
11 knows to convey the packet to the switch or the
12 switching fabric of the slave?

13 A Well, again, it could be done in a number of
14 different ways. And all of these are possible.

15 Either it has inherent knowledge about the
16 ports or it has a routing table which is
17 configurable or it's just in a daisy chain itself.

18 There is a number of different ways you
19 can implement this.

20 Q When the spec says "If the packet is
21 addressed to a particular slave," would you
22 understand this to mean that in one embodiment, the
23 slave shares a particular address?

24 A What I read it to mean is that the
25 pre-switch on that slave by some mechanism conveys the

1 packet to a switch or switching fabric of the slave.

2 I just discussed several different
3 mechanisms that could be used but they are not --
4 this embodiment doesn't limit you in any -- or limit
5 the claims in any way.

6 Q Is one embodiment -- let me rephrase.

7 Is one mechanism that can be used to
8 convey the packet within a particular slave matching
9 the pre-switch address with the address that the
10 packet holds in each header?

11 A I'm sorry, I missed that last part. Can you
12 repeat that?

13 Q Yes. Is one mechanism that can be used to
14 convey the packet within the particular slave
15 matching the pre-switch address of the slave with
16 the address of the packet header?

17 MR. STAMATOPOULOS: Object to form.

18 THE WITNESS: I don't think that's a
19 necessary requirement, as we just discussed.
20 There's many ways to implement this.

21 The key part in the embodiment is that the
22 pre-switch on that slave conveys the packet to its
23 switch or switching fabric of the slave which routes
24 the packet to the appropriate port.

25 That's the only requirement that's

1 described in this particular embodiment.

2 BY MR. KONSTANTAKOPOULOS:

3 Q I understand it's not necessary. I'm just
4 trying to find one way, and that's why my question
5 was: It was one mechanism that can be used?

6 A I don't think that's a complete mechanism.

7 Q Okay.

8 A Because it requires that the pre-switch on
9 that slave conveys the packet to a switch or switching
10 fabric of the slave, which then routes the packet to
11 the appropriate port.

12 So there's lots of different elements here
13 that would be required.

14 MR. KONSTANTAKOPOULOS: Okay. I think
15 it's time for a break. Let's go off the record.

16 (Recess taken.)

17 BY MR. KONSTANTAKOPOULOS:

18 Q Welcome back, Mr. Gomez. Do you
19 understand you're still under oath?

20 A I do.

21 Q Did you communicate in any way with
22 counsel during the break?

23 A No.

24 Q Let's continue our discussion on the '904
25 patent on Column 2 around Line 28.

1 So there is a paragraph that starts on
2 Column 2, Line 28 and goes, "In some different
3 embodiments of the present invention."

4 So this paragraph discusses different
5 embodiments of the invention; correct?

6 A Yes, there's several different embodiments
7 that are presented here.

8 Q Okay. Now, let's see what the paragraph
9 also says.

10 So according to the '904 invention, "each
11 slave comprises a pre-switch, which examines each
12 packet passed down its respective chain to determine
13 whether the packet is destined for any of the ports
14 on that slave."

15 Did I read that correctly?

16 A I'm still trying to find out where you're
17 starting from.

18 Q Okay. Column 2, Line 28.

19 A Starting with "each slave comprises a
20 pre-switch"?

21 Q Right. I'll let you read that sentence.

22 So there is a pre-switch within each
23 slave. So far so good?

24 A Each slave comprises a pre-switch.

25 Q The second sentence in that paragraph

1 reads, "Preferably, each packet passed between the
2 masters and slaves has a pre-switch address."

3 Do you see that?

4 A I do.

5 Q So the packet says a pre-switch address.

6 And the next sentence says, "If the packet
7 is addressed to a particular slave, the pre-switch
8 on that slave conveys the packet to a switch or
9 switching fabric of the slave, which routes the
10 packet to the appropriate port."

11 Do you have that in mind?

12 A I see that sentence.

13 Q And we've discussed how the '904 patent
14 describes different embodiments with regard to the
15 pre-switch address and how a particular slave is
16 identified.

17 Do you remember before our break?

18 A We did have a discussion about that. I
19 don't remember all the details.

20 Q Okay. So let's summarize.

21 Is it accurate to say that one embodiment
22 described in the '904 patent involves matching the
23 pre-switch address that is within every packet with
24 the pre-switch within each slave?

25 A Well, it says, "which examines each packet

1 passed down" to the respective chain -- "down its
2 respective chain to determine whether the packet is
3 destined for any of the ports on that slave."

4 Q So the -- go ahead, sorry.

5 A So there is an examination of the packet.

6 Q And if the pre-switch address included in
7 the packet matches the pre-switch of the slave, then
8 the pre-switch on that slave conveys the packet to a
9 switch or switching fabric of the slave; correct?

10 A So when you say "matching," matches has lots
11 of different -- matching has lots of different ways
12 that it can be implemented.

13 And so it doesn't say that it has to match
14 in here, it just has to determine whether the packet
15 is destined for any of the ports on that slave.

16 Q The determination of whether the packet is
17 destined for any of the ports on the slave is done
18 based on the pre-switch address; correct?

19 MR. STAMATOPOULOS: Object to form.

20 THE WITNESS: So, again, the sentence is
21 simply that each slave comprises a pre-switch which
22 examines each packet passed down to the respective
23 chain to determine whether the packet is destined
24 for any of the ports on that slave.

25 This first sentence doesn't say that it

1 requires an address.

2 However, it goes on to say that
3 preferably, but not required, a packet passed
4 between the masters and the slave has a pre-switch
5 address.

6 And it doesn't say that it's using that
7 address, it just simply says that preferably there
8 is an address.

9 BY MR. KONSTANTAKOPOULOS:

10 Q How would the slave use the pre-switch
11 address, if it uses it at all?

12 A So the next few sentences say that if the
13 packet is addressed to a particular slave, the
14 pre-switch on that slave -- so if the packet is
15 addressed to a particular slave, and the addressing
16 might be either through an address or it could be some
17 other means that may not -- isn't defined here, the
18 packet is addressed -- I lost my spot.

19 The pre-switch on that slave conveys the
20 packet to a switch or switching fabric of the slave,
21 which routes the packet to an appropriate port.

22 And then it goes on to say about other
23 kind of packets or -- other kinds of packets such as
24 multicast packets.

25 So the mechanism in which it makes the

1 determination may or may not be an address.

2 The language is pretty clear here that
3 it's flexible enough to use an address or it could
4 be using some other mechanism.

5 Q I understand that. But using an address
6 is one way that the slave can determine that a
7 packet should be routed to the appropriate port
8 within the slave; correct?

9 MR. STAMATOPOULOS: Object to form.

10 THE WITNESS: It's not even that precise.

11 It simply says that preferably, each
12 packet passed between the masters and slaves has a
13 pre-switch address. If the packet is addressed to a
14 particular slave, then the pre-switch on that slave
15 conveys the packet to a switch or switching fabric
16 of the slave, which routes the packet to the
17 appropriate port.

18 It doesn't say that it uses the address,
19 it just simply says that then the pre-switch would
20 perform that function.

21 BY MR. KONSTANTAKOPOULOS:

22 Q So based on your understanding of the '904
23 patent, when the specification says, if the packet
24 is addressed to a particular slave, how do you
25 understand that this determination happens?

1 A So, the '904 patent is flexible on that
2 point.

3 Q I'm happy to discuss the different
4 flexibilities that the '904 patent offers. So let
5 me ask you a question.

6 Is one flexible way that the '904 patent
7 offers with regard to determining that the packet is
8 addressed to a particular slave by using an address?

9 MR. STAMATOPOULOS: Object to form.

10 THE WITNESS: It merely says that in one
11 embodiment, preferably, a packet passed between the
12 masters and slaves has a pre-switch address.

13 So it's discussing how it actually gets to
14 the slave, but it doesn't discuss how it actually
15 routes to a port.

16 BY MR. KONSTANTAKOPOULOS:

17 Q I'm not interested at this point as to how
18 it is routed to a port, I'm interested in whether
19 you have an understanding as to how the '904 patent
20 determines that a packet is addressed to a
21 particular slave.

22 Do you understand what I'm asking?

23 A Your question is limited to routing it to a
24 slave.

25 Q So the third sentence in the paragraph

1 that starts at Column 2, Line 38, that says, "If the
2 packet is addressed to a particular slave."

3 Correct?

4 You understand that there is a
5 determination as to whether a particular packet is
6 addressed to a particular slave.

7 Do you understand that?

8 MR. STAMATOPOULOS: Object to form.

9 THE WITNESS: Further -- within the same
10 paragraph, the -- it says, "the pre-switch similarly
11 accepts packets carrying a next address."

12 So it's not addressed to a particular
13 slave, it just simply has the next address, it would
14 continue on to the next one.

15 Then we also have the case of multicast
16 packets in which the pre-switch determines if that
17 multicast is within its range or not.

18 BY MR. KONSTANTAKOPOULOS:

19 Q Right. So these are three different
20 embodiments that you discussed. I'm interested in
21 the embodiment where a packet is addressed to a
22 particular slave.

23 Do you see that?

24 A Yes.

25 Q So there is a sentence that says, "If the

1 packet is addressed to a particular slave."

2 My question is: How does the '904 patent
3 determine that a packet is addressed to a particular
4 slave?

5 Not the next slave. We'll get to that.

6 How does the '904 patent determine that a
7 packet is addressed to a particular slave?

8 MR. STAMATOPOULOS: Object to form.

9 THE WITNESS: So I think the sentence just
10 simply says it, it's preferably every packet passed
11 between -- and this is just one embodiment. So the
12 preferable embodiment is every packet passed between
13 the masters and the slave has a pre-switch address.

14 If the packet is addressed to a particular
15 slave, the pre-switch on that slave conveys the
16 packet to a switch or switching fabric of the slave.

17 I think that answers it.

18 BY MR. KONSTANTAKOPOULOS:

19 Q Okay. I think that's the answer. I'm
20 just trying to confirm that it is this -- the
21 pre-switch address that is used for determining
22 whether a packet is addressed to a particular slave;
23 correct?

24 MR. STAMATOPOULOS: Objection.

25 THE WITNESS: One embodiment.

1 BY MR. KONSTANTAKOPOULOS:

2 Q One embodiment. Okay. Thank you. Let's
3 move on.

4 Let's move on to the next sentence,
5 different embodiment.

6 "If the packet is a multicast packet with
7 an appropriate pre-switch address."

8 Okay. First, what is a multicast packet,
9 can you explain?

10 A It's a packet that would be targeted to more
11 than one node or location.

12 Q By node, do you mean slaves or --

13 A Slaves.

14 Q Okay.

15 A In this case it would be a slave, although
16 the multicast concept is applied to lots of different
17 addressing mechanisms -- or different systems.

18 Q Understood. So thank you for the
19 clarification.

20 So again, the sentence continues and says
21 that the multicast packet with an appropriate
22 pre-switch address.

23 Is it fair to assume that this pre-switch
24 address corresponds to more than one slave or can
25 correspond to more than one slave?

1 MR. STAMATOPOULOS: Object to form.

2 THE WITNESS: If it's a multicast packet,
3 the pre-switch both conveys a copy of the packet to
4 the switch or switching fabric and passes the packet
5 on down the chain.

6 So it just simply recognizes that it needs
7 to interpret this particular packet, each slave does
8 that individually.

9 BY MR. KONSTANTAKOPOULOS:

10 Q Right. But the multicast packet and a
11 broadcast packet are different things; right?

12 A The addressing mechanism is different,
13 that's correct.

14 Q So a multicast packet can have as a
15 destination one particular slave but may have not as
16 a destination another slave; correct?

17 MR. STAMATOPOULOS: Object to form.

18 THE WITNESS: In this case, the preferred
19 embodiment states that a multicast packet with an
20 appropriate pre-switch address, the pre-switch both
21 conveys a copy of the packet to the switch or
22 switching fabric of the slave and passes the packet
23 down the chain.

24 BY MR. KONSTANTAKOPOULOS:

25 Q Right. If the appropriate pre-switch

1 address corresponds to the particular slave; would
2 you agree with that?

3 MR. STAMATOPOULOS: Object to form.

4 THE WITNESS: If the slave interprets that
5 the packet is correct -- is destined for it in
6 whatever mechanism it uses in the multicast system,
7 and the slave then passes it down the chain. It --

8 BY MR. KONSTANTAKOPOULOS:

9 Q Okay.

10 A -- makes the interpretation itself.

11 Q Understood.

12 Let's move on to the second embodiment
13 that you discussed, the pre-switch similarly accepts
14 packet carrying a next address.

15 Can you explain how, under this embodiment
16 of the '904 patent, addressing works with regard to
17 a slave in a particular packet?

18 A In this case, the pre-switch accepts the
19 packets with the next address and then passes it down
20 to its immediate neighbor, which is different than the
21 multicast.

22 Q But the multicast also passes -- excuse
23 me. Let me rephrase.

24 But in the case of a multicast packet, the
25 slave also passes the packet down the chain;

1 correct?

2 MR. STAMATOPOULOS: Objection to form.

3 THE WITNESS: The chain and nearest
4 neighbor appear to me to be two different things and
5 you'd have to look at the diagram, but they are not
6 the same.

7 BY MR. KONSTANTAKOPOULOS:

8 Q I know what you're getting at.

9 So in the case of a multicast packet, one
10 particular slave in this series implementation of
11 the chain would pass the packet to its neighbor
12 slave, though; correct?

13 MR. STAMATOPOULOS: Object to form.

14 THE WITNESS: We would need to go look at
15 the diagrams and perhaps you can point me to where
16 you're thinking of to show that there is a
17 difference between the chain and the nearest
18 neighbor, next neighbor rather.

19 BY MR. KONSTANTAKOPOULOS:

20 Q Thank you. We'll come back to that.

21 Now, one final point on this paragraph.
22 So let's go back to the preferred embodiment.

23 So if the packet is addressed to a
24 particular slave, the paragraph says, reading from
25 Column 2, Line 34, "The pre-switch on that slave

1 conveys the packet to a switch or switching fabric
2 of the slave, which routes the packet to the
3 appropriate port."

4 So my question is: How does the switch or
5 the switching fabric of the slave know which is the
6 appropriate port to route the packet to?

7 A In Column 3, Line 60, again, an embodiment
8 that's -- that's one more embodiment.

9 It says, "Preferably each of the slave
10 units is coupled to receive packets transferred
11 thereto from the first and second master units over
12 first and second ones of the physical interface
13 lines, respectively, and the pre-switch passes the
14 packets received through the first and second
15 physical interface line and addressed to any of the
16 ports on the slave unit to respective first and
17 second addresses in the switch fabric."

18 Q So I'm sorry, are you done with your
19 answer?

20 A Yes.

21 Q So if I understand correctly what you're
22 saying, combining the two, so there is the
23 pre-switch address that identifies a particular
24 slave but in the packet there's also additional
25 address information that also identifies the port

1 within that slave?

2 MR. STAMATOPOULOS: Object to form.

3 THE WITNESS: It simply says that "and
4 addressed to any of the ports on the slave." It
5 does not say how the address is obtained.

6 BY MR. KONSTANTAKOPOULOS:

7 Q So the pre-switch address that was
8 discussed in Column 2 is addressed to a particular
9 slave; correct?

10 A If the packet is addressed to a particular
11 slave, the pre-switch on that slave conveys the packet
12 to a switch or switching fabric of its slave.

13 Q Now the question is: How does the switch
14 or switching fabric, after the determination has
15 been made that the packet is addressed to a
16 particular slave, knows what is the address for the
17 appropriate port?

18 A In Column 5, Line 26, "Preferably, conveying
19 the initial downstream data packets along the daisy
20 chain includes pre-switching the packets at each of
21 the slave units, so that packets not addressed to any
22 of the ports on the slave unit are passed to the next
23 slave unit in the daisy chain, while packets that are
24 addressed to one or more of the ports on the slave
25 unit are passed to a switch fabric that directs the

1 packets to the ports to which they are addressed."

2 Q That's exactly my question. How is that
3 addressing of the port is facilitated?

4 A It says it right there, they are passed to a
5 switch fabric that directs the packets to the ports to
6 which they are addressed.

7 Q The switch fabric needs information to
8 determine which of its N number of ports the
9 particular packet is addressed to; correct?

10 A Maybe could you break that up because there
11 is a piece I'm missing here.

12 Q That's fine. So my understanding is that
13 there's two levels of determination.

14 First, the packet header includes a
15 pre-switch address that is used to address a
16 particular slave in the chain; correct?

17 A So you were pointing to the text that we
18 looked at in Column 2?

19 Q Right.

20 A Yes.

21 Q And then after the determination has been
22 made that the pre-switch address corresponds to the
23 particular switch, then the packet is conveyed to
24 the switch or switching fabric which routes the
25 packet to the appropriate port.

1 So my question is: There is some
2 additional information required so that the switch
3 or switching fabric can determine which of the ports
4 of the slave the particular packet needs to be
5 routing to; correct?

6 MR. STAMATOPOULOS: Object to form.

7 THE WITNESS: I think the sentence is
8 pretty clear, "while packets that are addressed to
9 one or more of the ports on the slave unit are
10 passed to the switch fabric that directs the packets
11 to the ports to which they are addressed."

12 BY MR. KONSTANTAKOPOULOS:

13 Q So there is a port address involved in the
14 determination of which port the switching fabric
15 should direct the packets; correct?

16 A Again, it simply says that the port -- to
17 the port to which they are addressed, however that
18 addressing mechanism is generated, you know, there
19 could be multiple different ways to do that.

20 Q Right. One way that the address mechanism
21 can generate it is by using an address for the port;
22 correct?

23 MR. STAMATOPOULOS: Object to form.

24 THE WITNESS: I'm at Column 7, Lines 27 --
25 28 maybe, it refers to Figure 4 and it says,

1 "Referring back to Figure 4, downstream data packets
2 from active master 30 on line 38 are received by a
3 first physical layer interface 40 and passed to a
4 first demultiplexer 42 in pre-switch 60. The
5 demultiplexer examines the PSA of the packets and,
6 depending on this examination, takes the following
7 actions:"

8 "If the PSA corresponds to this slave 34,
9 a port number (Port 0) is appended to the packet.
10 This port is identified schematically in Figure 4 by
11 a block 48 in a switch or switching fabric 46 of the
12 slave. A demultiplexer 42 passes the packet to an
13 input FIFO 44, from which it is conveyed to
14 switching fabric 46, which then routes the packet to
15 the appropriate port."

16 And there's other variations on that.

17 BY MR. KONSTANTAKOPOULOS:

18 Q Have you concluded?

19 A Do you want me to read the rest of it?

20 Q No. I mean have you concluded your
21 answer? I don't want to cut you off if you're --

22 A No.

23 Q Okay. Are you thinking about the answer
24 or is it completed?

25 A I thought I said I completed my answer.

1 Q Okay. And PSA is pre-switch address;
2 correct?

3 A Correct.

4 Q If you look at Column 7, Line 3, I'm
5 reading from the '904 specification, "A PSA need not
6 be unique over the entire multi-shelf system 31.
7 Uniqueness is required, however, within any single
8 chain 36, 37 or 39."

9 This corresponds to Figure 5; correct?

10 MR. STAMATOPOULOS: Object to form.

11 THE WITNESS: The numbers 36, 37 and 39
12 correspond to Figure 5.

13 BY MR. KONSTANTAKOPOULOS:

14 Q So under one embodiment of the '904
15 patent, the pre-switch address within a single chain
16 must uniquely identify a slave; correct?

17 MR. STAMATOPOULOS: Object to form.

18 THE WITNESS: It says, "Uniqueness is
19 required, however, within any single chain," and
20 then it lists 36, 37 and 39.

21 BY MR. KONSTANTAKOPOULOS:

22 Q So within, let's say, for example,
23 chain 39, the pre-switch addresses need to be
24 unique; correct?

25 MR. STAMATOPOULOS: Object to form.

1 THE WITNESS: It goes on to say that "If
2 PSA is not unique at the entire multi-shelf" --

3 BY MR. KONSTANTAKOPOULOS:

4 Q Right. I'm not talking about the -- let
5 me give you the question again.

6 Uniqueness is required, however, within
7 every single chain; right, such as let's take as an
8 example a single chain 39.

9 Do you have that in mind?

10 A Sure.

11 Q Under one embodiment of the '904 patent,
12 the pre-switch address, PSA, within a single chain,
13 for example, chain 39, need to be unique; correct?

14 MR. STAMATOPOULOS: Object to form.

15 THE WITNESS: It says the uniqueness is
16 required within any single chain and it lists 36,
17 37, 39.

18 BY MR. KONSTANTAKOPOULOS:

19 Q Do you understand this uniqueness to
20 correspond to the PSA based on the previous
21 sentence?

22 A Well, it would correspond within any single
23 chain, not to any -- yes.

24 Q So your answer is yes?

25 A It would have to be unique within that

1 chain.

2 Q So within that chain, any of the 36, 37,
3 39 chains, the PSA needs to be unique; correct?

4 A It does say that "Uniqueness is required,
5 however, within any single chain." That's what it
6 says.

7 Q And uniqueness corresponds to the PSA;
8 correct?

9 MR. STAMATOPOULOS: Object to form.

10 THE WITNESS: The previous sentence says,
11 "A PSA need not be unique over the entire
12 multi-shelf system."

13 BY MR. KONSTANTAKOPOULOS:

14 Q Right. We're going in circles.

15 A I'm not done yet.

16 Q Go ahead. I apologize.

17 A So, "A PSA need not be unique over the
18 entire multi-shelf system 31. Uniqueness is required,
19 however, within any single chain 36, 37 or 39."

20 Q All right. Let me simplify things.

21 Let's assume that the system only shows a
22 single chain. Do you have that in mind?

23 A I don't think that's one of the embodiments,
24 but if it's a hypothetical? I don't think there's any
25 limitation to that. Let me read this again.

1 Okay. So the claims could say that it's
2 one or more daisy chains.

3 Q I was about to point you to Column 11,
4 Line 46.

5 So there is an embodiment of the '904
6 patent where there is a single chain; correct?

7 A Did you say Column 11, Line --

8 Q I'm reading from Claim 1, correct.

9 A Oh, Claim 1. Okay. Yes, there is a
10 plurality of --

11 Q I can read Column 11, Line 46. "A
12 plurality of physical interface lines which link the
13 slave units in one or more daisy chains."

14 Do you see that?

15 A Yes.

16 Q Okay. Now, heading into -- let me
17 rephrase that.

18 Assuming the embodiment of the '904 patent
19 where there is only a single chain of slaves and an
20 active and a passive master.

21 Do you have that in mind?

22 A So Figure 5 with just one of those chains?

23 Q Correct.

24 A Okay.

25 Q So if you go to Column 7, and I'm reading

1 from Line 4, "Uniqueness is required, however,
2 within any single chain."

3 Do you see that?

4 A Yes.

5 Q So in the instance where there is a single
6 chain, the PSA need to be unique; correct?

7 A So within this embodiment, and there's also
8 the issues of the other addressing mechanisms, it does
9 say that uniqueness is required within any single
10 chain.

11 Q So for only a single chain, the PSA need
12 to be unique for that particular chain; correct?

13 MR. STAMATOPOULOS: Object to form.

14 THE WITNESS: I think the language stands
15 on its own. Uniqueness is required within any
16 single chain.

17 There are further conditions applied to
18 this same paragraph wherein the PSA is not unique,
19 but I haven't analyzed that for -- in any part of my
20 report. So I'm not -- I don't think I can discuss
21 this further without more analysis.

22 So I'm just concerned about these other
23 conditions that Paragraph 7 -- that Column 7
24 discusses.

25

1 BY MR. KONSTANTAKOPOULOS:

2 Q Okay. So if you go to Column 7, Line 34,
3 it says, "If the PSA corresponds to this slave, a
4 port number (Port 0) is appended to the packet."

5 Do you see that?

6 A I do.

7 Q So in that instance, the packet header
8 would include the PSA and the port number would be
9 appended to the packet; correct?

10 A Say that again. I'm sorry, I missed that.

11 Q Yes. In the embodiment that is discussed
12 starting on Column 7, Line 34, the packet header
13 would include the PSA and a port number, emphasis
14 Port 0, would be appended to the packet header;
15 correct?

16 A So it says if -- again, I haven't opined on
17 this in my report and I would need some time to
18 analyze this properly.

19 But it says, "If the PSA corresponds to
20 the slave 34, a port number (Port 0) is appended to
21 the packet." It doesn't say when, only if.

22 Q Okay. Understood. That's fair enough.

23 So going to Column 7, Line 41, I'm
24 reading, "If the packet is a broadcast packet, sent
25 to slave 34, as well as to other slaves, the

1 demultiplexer passes a copy of the packet, with the
2 appropriate port number, to input FIFO 44, and
3 switching fabric 46 routes the packet to the
4 appropriate port, as described above."

5 Did I read that correctly?

6 A Yes.

7 Q So the appropriate port number is used to
8 route the packet to the appropriate port; correct?

9 A It says that the switching fabric routes the
10 packet to the appropriate port and that the
11 demultiplexer passes a copy of the packet with the
12 appropriate port number to the input FIFO and the
13 switching fabric then routes the packet to the
14 appropriate port.

15 Q Right. Is it your understanding that the
16 port number which is part of the packet is used by
17 the switching fabric to route the packets to the
18 appropriate port?

19 A That may be one embodiment, but that's not
20 necessarily a requirement by reading this language.

21 It simply says that the port number is
22 part of it -- a part of the packet.

23 Q Okay. Now let's move on to Column 7,
24 Line 55 -- excuse me, Line 53.

25 "If the packet carries a 'Next' neighbor

1 address, the demultiplexer passes the packet to
2 input FIFO 44 and from there to switching fabric
3 46."

4 Did I read that correctly?

5 A Yes.

6 Q How does the particular slave -- let me
7 rephrase that.

8 How does the particular demultiplexer in
9 the slave know to pass the packet to the FIFO 44?

10 A Because of the next neighbor address.

11 Q So can you elaborate on that? How is that
12 possible?

13 MR. STAMATOPOULOS: Object to form.

14 THE WITNESS: There is an interpretation
15 of the next -- the next neighbor address and then
16 the demultiplexer makes that determination to pass
17 the packet to the input FIFO from there to the
18 switching fabric.

19 BY MR. KONSTANTAKOPOULOS:

20 Q Let's assume slave -- that said slave on
21 the chain. Do you have that in mind?

22 A I'm sorry, say that again.

23 Q Let's assume in Figure 5, right, let's
24 assume the said slave on the top chain receives a
25 next address packet.

1 How would that slave know that this packet
2 is addressed to a port on that slave?

3 A In Column 5, Lines 26, "Preferably,
4 conveying the initial downstream data packets along
5 the daisy chain includes pre-switching the packets at
6 each of the slave units, so that packets not addressed
7 to any of the ports on the slave units are passed to
8 the next slave unit in the daisy chain."

9 This may not pertain specifically to the
10 next address, though. Let me look this up a little
11 further.

12 So in Column 7, Line 23 -- 22, "The 'Next'
13 (neighbor) address is used for various topology
14 detection and diagnostic procedures. Typically,
15 each shelf sends control packets with the 'Next'
16 address, carrying the identity of the sending shelf
17 identity, as well as the identity of the next
18 neighbor as received over the link and, optionally,
19 additional information."

20 Q That doesn't say identity of the next
21 neighbor, it says "the identity of the neighbor";
22 right? I just want to clarify that.

23 A Yes, that's correct. Yes, you're right.

24 Q So by virtue of the position of the slave
25 in the chain, that slave receives the next -- let me

1 rephrase that.

2 So by virtue of the position of the slave
3 in the chain, the slave would receive a packet with
4 a next address and understand it is addressed to
5 that particular slave?

6 MR. STAMATOPOULOS: Object to form.

7 THE WITNESS: It says, "Typically, each
8 shelf" -- which is now different than the masters.

9 "Typically, each shelf sends control
10 packets with the next address, carrying the identity
11 of the sending shelf identity, as well as the
12 identity of the neighbor as received over the link
13 and, optionally, additional information."

14 BY MR. KONSTANTAKOPOULOS:

15 Q Okay. Unless you have anything else, we
16 can move on.

17 All done with your answer, Mr. Gomez?

18 A Yes.

19 Q Okay. Now, I understand in your
20 declaration, you make a distinction between
21 hierarchical addressing and nonhierarchical
22 addressing; correct?

23 A Where in my declaration are you pointing me
24 to?

25 Q Let's go to Paragraph 62.

1 A Okay.

2 Q So on Paragraph 62 that's on Page 32, you
3 write, "A hierarchical address is an address having
4 multiple levels (a hierarchy), with each level
5 identifying a specific subnetwork in the hierarchy."

6 Did I read that correctly?

7 A Yes.

8 Q So I understand that hierarchical
9 addressing requires two or more levels of addresses;
10 is that fair?

11 A As we discussed earlier, a hierarchical
12 address would allow you to interface to two or more
13 subnets, or multiple subnets.

14 And in this discussion I do provide
15 examples of hierarchical addresses that have both a
16 network address and a subnet address.

17 Q I'd like you to stay to the examples in
18 the '904 patent.

19 So I understand that it is your position,
20 correct me if I'm wrong, that the master and slave
21 system of the '904 patent implements hierarchical
22 addressing; is that correct?

23 MR. STAMATOPOULOS: Objection.

24 THE WITNESS: The '904 patent has the
25 ability to interface with networks outside of the

1 invention that may or may not be hierarchical.

2 But the examples given are often
3 designed -- the examples of the networks are often
4 hierarchical.

5 BY MR. KONSTANTAKOPOULOS:

6 Q Let's go specifically to Figure 5.

7 Do you see Figure 5 of the '904 patent?

8 A I closed that accidentally. Let me open
9 that up again.

10 Q Sure.

11 A Figure 5?

12 Q Correct.

13 A Yes, I'm there.

14 Q So do you see the active master and
15 standby master in the three chains of slaves;
16 correct?

17 A Correct.

18 Q Let's assume for simplicity the embodiment
19 of a single chain of slaves.

20 Do you have that in mind?

21 A Yes.

22 Q Is the system of a mapping master and a
23 standby master with a single chain of slaves a
24 system that uses hierarchical addressing?

25 MR. STAMATOPOULOS: Object to form.

1 THE WITNESS: So the slaves connect to
2 subscribers and the subscribers in this invention
3 are -- have the objective of connecting to a
4 network.

5 In as much as those subscribers wish to
6 connect to a network, hierarchical addressing
7 mechanism would be an appropriate embodiment.

8 BY MR. KONSTANTAKOPOULOS:

9 Q Right. So what I don't understand is that
10 where do you see the multiple levels in the system
11 of Figure 5?

12 I only see one level, the slaves. And the
13 active master that we saw in one embodiment, the
14 pre-switch address has an address to address the
15 particular slave on the chain; correct?

16 MR. STAMATOPOULOS: Object to form.

17 THE WITNESS: So we've discussed the
18 addressing mechanism on the slave chain, and we've
19 discussed hierarchical addressing.

20 The network that's in Figure 5, Item 22,
21 is a core network that's external to the '904 patent
22 or -- it's a network that would require some
23 routing.

24 And so it would be -- and the best kind of
25 addressing mechanism would be a hierarchical

1 addressing mechanism in order to address other
2 devices on that network.

3 BY MR. KONSTANTAKOPOULOS:

4 Q Okay. I understand that the network 22
5 can be, for example, the Internet. It mentioned
6 like hierarchical addressing. I'm talking about the
7 system of an active master, standby master and the
8 single chain of slaves.

9 Do you have that in mind? I'm talking
10 about that system.

11 MR. STAMATOPOULOS: Object to form.

12 BY MR. KONSTANTAKOPOULOS:

13 Q Correct? Is the system that I just
14 described a hierarchical addressing system or not?

15 MR. STAMATOPOULOS: Object to form.

16 THE WITNESS: The subscribers on that
17 network are wishing to connect to a network, to
18 external networks.

19 And they would be using -- they possibly
20 could be using a hierarchical network address
21 system.

22 It's -- nothing prevents them from doing
23 that. And the addressing mechanisms within these
24 slaves could be hierarchical as well.

25

1 BY MR. KONSTANTAKOPOULOS:

2 Q So are you saying to a pre-switch address,
3 the pre-switch address can be hierarchical?

4 A As we just saw with your previous
5 questioning, there was a preferred embodiment, or at
6 least an embodiment that consisted of a -- of a
7 pre-switch address and also consisted of a port
8 address.

9 It's an example of a hierarchical
10 addressing system.

11 Q Okay. So one level of the hierarchy would
12 be the pre-switch address and the second level would
13 be the port address?

14 A That's one possible embodiment.

15 I would also like to point out that in the
16 claims -- sorry, in the specification, there is a
17 discussion of not just a pre-switch but also a
18 switch.

19 And that would be another level that may
20 require hierarchy.

21 Q Unless you have anything more, let's go
22 off the record.

23 MR. STAMATOPOULOS: Okay.

24 (Recess taken.)

25 BY MR. KONSTANTAKOPOULOS:

1 Q Welcome back, Mr. Gomez. Did you
2 communicate with counsel during the break?

3 A No.

4 Q Okay. My next questions will relate to
5 Vink, that's Exhibit 1005.

6 (Reporter clarification.)

7 BY MR. KONSTANTAKOPOULOS:

8 Q Can you please turn to Paragraph 45 of
9 your declaration?

10 A Of my declaration, sure. Thirty-five.

11 Q You reproduced Figure 2 of Vink and right
12 after Figure 2 you write, "The master 1 and the
13 slaves 2, 3, 4, 5 are mutually connected via a
14 double-ring transmission system composed of
15 transmitting/receiving units 6 and transmission
16 lines 7, 8. The transmission lines 7, 8 may, for
17 example, consist of coaxial cable, optical fiber
18 cable and the like."

19 Did I read that correctly?

20 A That's a quote from Exhibit 5.

21 Q And Vink discloses a double-ring
22 transmission system that includes transmitting and
23 receiving units and transmission lines; correct?

24 A It says, via a double-ring transmission
25 system composed of transmitting/receiving units and

1 transmission lines, correct.

2 Q So Vink on Page 15, Line 34, 35 reads,
3 "The transmission lines 7, 8 may, for example,
4 consist of coaxial cable, optical fiber cable and
5 the like," which is again from Vink; correct?

6 A Is that the same quote that you just --

7 Q Yes, I'm just referring to the cite.

8 A Uh-huh.

9 Q I've read from your declaration that you
10 are familiar with optical fibers; is that fair?

11 A I'm familiar with optical fibers.

12 Q Now, let's assume that the transmission
13 lines 7, 8 are optical fiber cables. Okay?

14 A Okay.

15 Q In that case, would the double-ring
16 transmission system of Vink be a connection in
17 series or a bus system?

18 (Reporter clarification.)

19 MR. STAMATOPOULOS: Object to form.

20 THE WITNESS: I don't understand the last
21 word, a what system?

22 BY MR. KONSTANTAKOPOULOS:

23 Q A bus.

24 A Oh, a bus. Well, there's different kinds of
25 buses, bus systems. There's serial bus systems and

1 there's parallel bus systems. So the question, I'm
2 not sure how to answer it.

3 Q Can you have an optical fiber system with
4 a parallel bus system?

5 MR. STAMATOPOULOS: Object to form.

6 THE WITNESS: It's not typically done.
7 But I don't see -- there's nothing technically that
8 would prevent you from doing it. It's just cost
9 really more than anything else.

10 BY MR. KONSTANTAKOPOULOS:

11 Q Understood.

12 Now, the transmission ring 7 and 8, the
13 transmission ring 7 and 8 are bidirectional;
14 correct?

15 MR. STAMATOPOULOS: Object to form.

16 THE WITNESS: It does not say that and --

17 BY MR. KONSTANTAKOPOULOS:

18 Q I'll point you to Figure 3 of Vink.

19 A Figure 3?

20 Q Yes.

21 A All right.

22 Q Do you see on the left side of Figure 3,
23 transmission ring 7 and 8?

24 A I do.

25 Q Does Figure 3 inform your opinion as to

1 whether transmission ring 7 and 8 are bidirectional
2 or not?

3 A It has arrows in both directions. It
4 doesn't mean that it's employing them. Give me a
5 minute to go look through the text to understand how
6 they are being used.

7 Q Okay.

8 A Well, okay. It's going to take a little
9 longer, this is not searchable text.

10 Q Can I direct you to Claim 14? Maybe that
11 would help.

12 A In Vink?

13 Q In Vink, yes.

14 A So this says, "Communication system
15 according to Claim 13." Is that the correct spot?

16 Q Yes.

17 A "Wherein the at least one master and the
18 slaves (2, 3, 4 and 5) are arranged to transmit or
19 receive data bits via transmission ring (7, 8) in one
20 and/or the other direction."

21 Q So Vink teaches that the active master can
22 receive data packets by the slaves in each
23 direction; correct?

24 MR. STAMATOPOULOS: Object to form.

25 THE WITNESS: It clearly implies that it's

1 unidirectional in both directions.

2 It doesn't say that it's bidirectional in
3 both directions. So one could be turned on and then
4 the other could be turned on. And I'd need to go
5 back through the text to really understand how it's
6 being used.

7 This particular claim says "in one and/or
8 the other direction." It doesn't say that -- how
9 they are being used, whether they are using a
10 bidirectional means or whether they are two
11 unidirectional links.

12 BY MR. KONSTANTAKOPOULOS:

13 Q I see what the confusion is.

14 Let me say, so I think you're saying that
15 transmission ring 7 and 8 are two unidirectional
16 links; correct?

17 MR. STAMATOPOULOS: Objection.

18 THE WITNESS: That's one way to read this.
19 And unless I was able to go back and look -- I
20 haven't memorized things, so I would have to go back
21 and look at the text to be sure.

22 But this particular section of Vink
23 doesn't describe bi-directionality necessarily.

24 BY MR. KONSTANTAKOPOULOS:

25 Q But it does describe receiving packets in

1 either direction?

2 A Like I said, it could be two unidirectional
3 paths.

4 Q Correct. By using two unidirectional
5 paths, the active master can receive data packets;
6 right, in each direction?

7 A Yes, and then it gets into -- we would have
8 to explore how they are being used and under what
9 conditions.

10 Q Understood. Okay. Now, can you turn to
11 Vink at Page 6 at Lines 16 to 18?

12 A Where it starts -- the bullets where it
13 starts, as supplying the data bits?

14 Q The first one, correct.

15 So if you read that first bullet, let me
16 know, I have a question.

17 A Okay. I read the first bullet.

18 Q This first bullet refers to data intended
19 for the slaves; correct?

20 A Supplying the data bits for the I/O modules
21 to the slaves via the transmission system, yes.

22 Q Now, looking at Figure 2 of Vink, if the
23 active master in Vink wants to send data to the
24 third I/O module of slave 3, how does Vink supply
25 the data bits to the transmission line rate?

1 A I'm sorry, I lost you on that question.
2 State that again.

3 Q Let me have you look at Figure 2.

4 A I'm looking at Figure 2.

5 Q The active master in Vink that's on the
6 left side at the top wants to send data to the third
7 I/O module of slave 3.

8 Do you have that in mind?

9 A Okay.

10 Q How would Vink supply the data to the
11 transmission line rate?

12 MR. STAMATOPOULOS: Object to form.

13 THE WITNESS: The master would do it --
14 would supply that data corresponding to the sequence
15 of the connected I/O modules.

16 BY MR. KONSTANTAKOPOULOS:

17 Q So is it accurate to say that Vink
18 addresses the data for the I/O modules in a way that
19 corresponds to the sequence of the connected slaves?

20 A This particular bullet that you pointed to
21 me says that supplying the data bits of the I/O
22 modules, the sequence of the data bits corresponding
23 to the sequence of the connected I/O modules.

24 So there's a specific sequence in which
25 they would be delivered.

1 Q Would that mean that Vink knows how to
2 send data to the fourth I/O module in slave 2, for
3 example, because the fourth I/O module is the
4 immediate neighbor to the third I/O module?

5 A I haven't opined on Vink and I haven't
6 memorized the Vink patent. To answer that, I would
7 need to go do an analysis of the patent and that may
8 take me a little while because this is not a
9 searchable document.

10 Q Okay. Let's move on then.

11 Let's look at Figure 2 of Vink again.
12 Let's assume that the active master wants to send
13 data to an I/O module on slave number 4.

14 Do you have that mind?

15 A The active master wants to sends data to --
16 I'm sorry, one more time.

17 Q To an I/O module for slave number 4.

18 A Okay.

19 Q Do you know what path will the data
20 travel?

21 A Well, the path would be among a serial path
22 to the I/O module and...

23 Q Do you have an idea which serial path that
24 would be?

25 A I'm looking at it right now. Again, this

1 isn't a searchable document, so it's hard to find the
2 information. But give me a few minutes and I may
3 locate it.

4 Q Sure.

5 A It would be -- I think the easy answer is
6 that it would be the active serial link, but let me go
7 look for that here.

8 Q Yes.

9 A Perhaps you might want to point me somewhere
10 in the patent that discusses this because I'm looking
11 through the patent, it's 24 pages, it's going to take
12 me awhile with this non-searchable document.

13 Q I was just looking at Figure 2. What
14 available path do you see for the data to travel
15 from active master to an I/O of slave 4?

16 A From the active master, there's two separate
17 paths, 7 and 8. But that doesn't mean that those are
18 being employed.

19 Often in these systems you will have one
20 path that's active and the other one that's standby.

21 So those are not bidirectional, they are
22 unidirectional used at different times. And that's
23 what I was trying to discover in the patent.

24 Q Let's talk about only one single piece of
25 data needs to be sent from active master to the I/O

1 slave 4.

2 A I'm sorry, I didn't quite catch the
3 question.

4 Q Let me try it a different way.

5 Is a possible path for the data from
6 active master 1 to an I/O module for slave 4, slave
7 2, 3 and then 4 using any of the transmission rings
8 7 or 8?

9 A It could be down to 7. It could be down to
10 8. But again, it depends on how the alternate link
11 was used, whether it's in the same direction, which is
12 possible.

13 So it could be going through 7 to 2 and
14 then 3 and then 4, or it could be going through 8 as
15 an alternate path through to 2, then 3, then 4.

16 They could be both in the same direction
17 or they could be running in opposite directions at
18 different times. It would depend on the
19 implementation.

20 Q Let's assume that there is a fault in both
21 transmission rings 7 and 8 between slaves 3 and 4.
22 Do you have that in mind?

23 A Okay.

24 Q What path will the packet travel from
25 active master to reach an I/O module on slave

1 number 4?

2 A Again, I haven't opined on this
3 particular -- on Vink but -- and I haven't had the
4 opportunity to go back and find the particular
5 sections in the patent that discusses this.

6 But there are -- there is an alternate
7 path in this diagram which would allow data to be
8 transmitted in the opposite direction. In fact,
9 there's either on 7 or on 8.

10 Q And what is the alternate path?

11 A Seven or 8 in the opposite direction.

12 Q Through passive master and slave 5?

13 A Yes, through the alternate master in the
14 dotted lines and then slave 5 would be one way to do
15 it.

16 Q Now I'm going to ask you some questions
17 related to Patrick, which is Exhibit 1006. And can
18 you please turn to Patrick at Figure 1?

19 A I'm there.

20 Q Do you see communication media 115 and 116
21 connect to the secondary station?

22 A Yes.

23 Q Column 3, Lines 17 through 20 of Patrick
24 read, "The communication media may be coaxial cable,
25 fiber optic cable, twisted pair wires, and so on."

1 Do you see that on Patrick?

2 A Column 3, what line?

3 Q Starting on Line 17.

4 A Okay.

5 Q Now, when the communication media 115 and
6 116 is a fiber optic cable, is it fair to assume
7 that the secondary stations can be connected in
8 series?

9 A So you mean that the fiber would connect
10 from a first secondary station directly to the
11 secondary station?

12 Q Correct. So if we take, for example, the
13 115 portion, from the primary station we have a
14 series connection to secondary station 110A and then
15 there would be a second series connection between
16 secondary station 110A and 110B and so on and so
17 forth?

18 A Again, I haven't opined on Patrick regarding
19 how these are implemented.

20 Q You said you read Patrick in its entirety?

21 A I'm sorry?

22 Q Have you read Patrick in its entirety?

23 A Yes, I have.

24 Q Do you understand Patrick?

25 A I believe I do to the extent that I needed

1 to for my declaration. But with specific questions
2 such as fiberoptics being used in series versus these
3 other forms of communication, I didn't look at that.

4 Q Can you turn to Column 6 at Line 53?

5 A All right.

6 Q Now, let me read what Patrick says.

7 "Different routing protocols use different
8 mechanisms to determine the MAC address. A common
9 mechanism is the address resolution protocol (ARP)
10 used as part of the common TCP/IP internetworking
11 protocol in widespread use. If the destination
12 network address 213 is not to a directly connected
13 internetwork network address, then the router must
14 consults its routing table."

15 Do you see that?

16 A I do.

17 Q How does the ARP in Patrick determine the
18 MAC address?

19 A One more time on the question. How does
20 Patrick utilize the MAC address? Is that what the
21 question was?

22 Q No. How does the ARP determine the MAC
23 address?

24 A Oh, Patrick describes the use of ARP to
25 determine the MAC address and the ARP is a common

1 TCP/IP internetworking protocol.

2 So Patrick does not actually say or define
3 how the ARP protocol works. It's using the ARP
4 protocol.

5 Q But is the ARP something that someone
6 skilled in the art would understand how to use to
7 determine the MAC address?

8 A With regard to the question that you asked,
9 which was how does Patrick use it, Patrick uses it as
10 part of the address resolution process for determining
11 the MAC addresses.

12 And it says just above it, "Different
13 routing protocols use different mechanisms to
14 determine the MAC address."

15 "A common mechanism," and it's an example,
16 "is the address resolution protocol (ARP) used as
17 part of the common TCP/IP internetworking protocol
18 in widespread use."

19 It goes on to say, "If the destination
20 network address 213 is not to a directly connected,"
21 not indirectly connected, "internetwork network
22 address, then the router must consult its routing
23 table."

24 So in other words, this is a means of
25 which an address can be forwarded by looking at a

1 table.

2 Q And that table would be at the router;
3 correct?

4 A It does not say that it's at a router; it
5 could be a switch.

6 Q It says, "the router must consult its
7 routing table." I think it's --

8 A In this case, yes.

9 Q So looking back again at Figure 1 of
10 Patrick, its secondary station is a MAC address;
11 correct?

12 A In the diagram?

13 Q Figure 1 I mean.

14 A Figure 10 shows a flow diagram that forms a
15 secondary MAC network packet from the first packet.

16 It's not clear that that is used. I would
17 have to go back through the text to make sure that
18 it's used in the context of your question.

19 Q Wouldn't the MAC layer of the secondary
20 station be assigned a MAC address for the secondary
21 stations of Figure 1?

22 (Reporter clarification.)

23 MR. STAMATOPOULOS: Object to form.

24 THE WITNESS: So a description of
25 Figure 10 for the Patrick patent, which I haven't

1 analyzed in context of its claims, "Figure 10 is a
2 flow diagram for the method of the present invention
3 for transmission of data packets to a terminal.
4 Beginning with start step 400, a first data packet
5 is received as having its destination address an
6 internetwork address of a first terminal, step 405."

7 "Next, a secondary MAC network packet is
8 formed from the first data packet, step 410" -- I
9 believe that should be "is formed" -- "from the
10 first data packet, step 410. The secondary MAC
11 network packet is encapsulated in an intermediate
12 network packet having, as its destination address,
13 an intermediate network address of a secondary node
14 corresponding to the terminal."

15 Then it goes on to say, "The intermediate
16 network packet is transmitted to the secondary node,
17 step 420. The secondary MAC network packet
18 (previously encapsulated) is retransmitted to the
19 terminal."

20 BY MR. KONSTANTAKOPOULOS:

21 Q Let's assume that the primary station and
22 secondary station for Figure 1 of Patrick used one
23 routing protocol and the network 105 uses a
24 different routing protocol.

25 Do you have that in mind?

1 A That's an assumption; correct?

2 Q Correct.

3 A So one more time on that, Figure 1 of -- I'm
4 sorry.

5 Q Let's assume that the primary station 101
6 and the secondary station of Figure 1 use one
7 routing protocol and the network 105 uses a
8 different routing protocol.

9 Do you have that in mind?

10 MR. STAMATOPOULOS: Object to form.

11 THE WITNESS: That's a hypothetical, it's
12 an assumption, but I don't believe that's
13 substantiated here in the patent.

14 BY MR. KONSTANTAKOPOULOS:

15 Q Right. It's a hypothetical and that's
16 based on Patrick at Column 6 at Lines 53 where
17 Patrick says that different routing protocols use
18 different mechanisms to determine the MAC address?

19 A Is that 55 you said?

20 MR. STAMATOPOULOS: Objection, form.

21 MR. KONSTANTAKOPOULOS: Fifty-three.

22 MR. STAMATOPOULOS: Is there a question?

23 MR. KONSTANTAKOPOULOS: Yes.

24 MR. STAMATOPOULOS: Object to form.

25

1 BY MR. KONSTANTAKOPOULOS:

2 Q So according to Patrick, the common
3 mechanism to determine the MAC addresses is through
4 the address resolution protocol even in this
5 hypothetical; correct?

6 MR. STAMATOPOULOS: Object to form.

7 THE WITNESS: That was just one common
8 widespread -- ARP is one common widespread method,
9 although Patrick admits that there are others.

10 BY MR. KONSTANTAKOPOULOS:

11 Q All right. Let's move on.

12 Can you please turn to the '904 patent at
13 Column 4, Lines 39 to 44?

14 A That's the '904 patent. What were the lines
15 again?

16 Q Thirty-four, Lines 39 to 44.

17 A Okay. I'm there.

18 Q Do you see the paragraph starting with,
19 "Further, preferably"? Can you please read this
20 paragraph?

21 A "Further, preferably" --

22 Q You can read it to yourself.

23 A All right.

24 Q So this paragraph refers to multiple
25 packets; correct?

1 A It says that when one of the packets
2 received by the pre-switch includes a multicast
3 packet.

4 Q Right. So let's focus on that multicast
5 packet, okay?

6 Is a multicast packet a downstream packet
7 or an upstream packet?

8 (Reporter clarification.)

9 THE WITNESS: Well, it says that when one
10 of the packets received by the pre-switch includes a
11 multicast packet addressed to one or more of the
12 ports on the slave unit.

13 So it doesn't really limit one way or the
14 other; it just has to be received by the pre-switch.
15 BY MR. KONSTANTAKOPOULOS:

16 Q So is it your opinion that a multicast
17 packet can be either a downstream packet or an
18 upstream packet?

19 A In Column 2, Line 37, if the -- 36, "If the
20 packet is a multicast packet with an appropriate
21 pre-switch address, the pre-switch both conveys a copy
22 of the packet to the switch or switching fabric of the
23 slave and passes the packet on down the chain."

24 It doesn't say -- it doesn't limit it to
25 having to be -- it doesn't impose a limitation in

1 these paragraphs. However...

2 I believe you asked me a question about my
3 opinion; is that correct?

4 Q Correct. Is it your opinion that the
5 multicast packet can be either a downstream packet
6 or an upstream packet?

7 A Ask me another question and --

8 Q Let me ask you another question and maybe
9 simply things.

10 Since you pointed to Column 2, let's go to
11 Column 2 and read from Line 36.

12 "If the packet is a multicast packet with
13 an appropriate pre-switch address," so let's focus
14 on that multicast packet that shares a pre-switch
15 address that corresponds to a slave.

16 Do you have that in mind?

17 A One moment, please.

18 Q Yes.

19 A Where were you pointing me to there?

20 Q Column 2, Line 37. "If the packet is a
21 multicast packet with an appropriate pre-switch
22 address."

23 Do you see that?

24 A Yes.

25 Q All right. Now, let's go to Figure 5.

1 So you agree that this packet is a
2 downstream packet listed here has a destination of a
3 port on a slave; correct?

4 A It says, "If the packet is a multicast
5 packet with an appropriate pre-switch address, the
6 pre-switch both conveys the copy of the packet to the
7 switch or switching fabric."

8 So it is receiving a multicast -- the
9 slave is receiving a multicast packet.

10 Q And let's make it my hypothetical that
11 this multicast packet comes from a network; is that
12 fair?

13 A That's a hypothetical, sure.

14 Q All right. Let's assume that the
15 pre-switch address of that multicast packet
16 corresponds to the second slave of chain 39.

17 Do you see that?

18 A Second slave from the left?

19 Q From the left, correct.

20 A Okay.

21 Q So that multicast packet would be received
22 by the active masters from the network and will be
23 conveyed to the first slave on chain 39; correct?

24 A It would, and the language of the claim
25 reflects where you're going with this.

1 If the packet is a multicast packet with
2 an appropriate pre-switch address, the pre-switch
3 both conveys a copy of the packet to the switch or
4 switching fabric of the slave and passes the packet
5 on down the chain.

6 Q And let's assume that the pre-switch
7 address of this multicast packet corresponds to the
8 second slave on chain 39. Do you have that in mind?

9 A Okay.

10 Q Then the slave on chain 39 will convey a
11 copy of the packet to the switch or switching fabric
12 and also pass the multicast packet to the same slave
13 on the chain; correct?

14 A It would -- I believe that's what the
15 language I read reflects.

16 Q And the multicast packet will bypass the
17 first slave on the chain; correct?

18 A The first chain -- the first slave on the
19 chain had to interpret whether or not that multicast
20 packet was intended for it or not.

21 Q And in my hypothetical, the second slave
22 is what the pre-switch address of the multicast
23 packet corresponds to, in my hypothetical?

24 THE REPORTER: Can you repeat that
25 question, please?

1 BY MR. KONSTANTAKOPOULOS:

2 Q In my hypothetical, the pre-switch address
3 of the multicast packet corresponds to the second
4 slave of chain 39.

5 Do you have that in mind?

6 A So the second slave -- the packet had the
7 appropriate address for the -- appropriate pre-switch
8 address for that slave, the second slave.

9 Q Correct.

10 A And a pre-switch both conveyed a copy of the
11 packet and passes the packet on down the chain.

12 Q And the first slave would process again
13 the multicast packet, but we would just pass it to
14 the second slave without retaining a copy in my
15 hypothetical; correct?

16 MR. STAMATOPOULOS: Object to form.

17 THE WITNESS: I believe the language
18 here -- and I'm trying to make sure it's the correct
19 language -- is "Otherwise, the pre-switch rejects
20 the packet and passes it on to the next slave along
21 the chain," which is at 44 of the same column.

22 BY MR. KONSTANTAKOPOULOS:

23 Q So I guess let me help you.

24 So I've introduced in Exhibit Share a new
25 premarked exhibit, Exhibit 1012. Can you open the

1 exhibit?

2 A Which exhibit?

3 Q Exhibit 1012.

4 A Okay. I see this.

5 Q I hope it facilitates the discussion.

6 So, again, in my hypothetical, a multicast
7 packet with a pre-switch address corresponding to
8 the second slave of chain 39, what I'm showing in
9 Exhibit 1012 is the path of the multicast packet.

10 MR. STAMATOPOULOS: Object to form.

11 One thing for the record, this is an
12 exhibit that you have annotated, Theo?

13 MR. KONSTANTAKOPOULOS: Correct. It's a
14 new exhibit I've annotated with red arrows and the
15 red text and the blue arrows pointing.

16 MR. STAMATOPOULOS: I'm sorry, there are
17 also blue arrows? Maybe I'm color blind, but I
18 can't see the blue arrows.

19 MR. KONSTANTAKOPOULOS: There is a blue
20 arrow on the right pointing to the one red arrow and
21 there is a "passed copy" with an arrow pointing
22 down, so it's a light blue.

23 MR. STAMATOPOULOS: I see it now. All
24 right. I apologize. It looked black to me
25 initially.

1 THE WITNESS: And I just want to confirm
2 that that blue arrow that is pointing to -- that
3 blue arrow on the bottom connects the retained copy
4 to the red bar pointing down?

5 BY MR. KONSTANTAKOPOULOS:

6 Q Correct. It's an illustration that I
7 think is consistent with the language.

8 And I want you to confirm or not that the
9 first slave would process the multicast packet and
10 will reject it and pass it on to the second slave
11 and the second slave, because the multicast packet
12 has a pre-switch address that corresponds to that
13 slave, will retain a copy -- that's what I'm showing
14 with a red arrow pointing down -- that also passes a
15 copy to slave number 3.

16 Is this consistent with your understanding
17 of a multicast packet according to the '904 patent?

18 A I think that's consistent with the
19 description embodiment that's described in the '904
20 patent.

21 When we looked at the language earlier, it
22 did discuss retaining -- for the slave that the
23 multicast packet was appropriate for retaining a
24 copy and then passing it down the line and for the
25 slaves that were not appropriate for, the slave

1 rejected that packet and passed it on down the line.

2 Q Okay. Then we can move on. We won't need
3 Exhibit 1012 again.

4 We can move on to your declaration in
5 Paragraph 80. If we can power through, we may not
6 need a break, if that's fine with you.

7 A I'm good with that. How much longer do you
8 think?

9 Q Hopefully 20 minutes. If you want a
10 break, it's fine. We've been going for an hour.

11 A I'm good.

12 Q Okay. So can you go to Paragraph 80 of
13 your declaration?

14 A All right.

15 Q You write in the third sentence, "Vink
16 discloses a local area network having fixed
17 addresses for its slaves."

18 Did I read that correctly?

19 A You said Paragraph 80?

20 Q Eighty, correct.

21 A Yes.

22 Q And you point to Vink that's Exhibit 1005
23 at Page 17, Line 38 to Page 18, Line 14; correct?

24 A Correct.

25 Q Can you point me where on those lines Vink

1 uses the word "fixed"?

2 A So the paragraph that we're pointing to
3 discusses that every slave can be provided with an
4 unambiguous address and the addressing of the separate
5 I/O modules can take place on the basis of their
6 sequence in the cascade arrangement.

7 So the sequence is fixed, it's connected
8 up and we're talking about systems which are in
9 Figure 5 connected in series.

10 The sequence is the fixed addressing
11 mechanism that Vink is discussing.

12 Q Right. You're talking about different
13 things. I'm talking about the slaves, not the I/O
14 modules.

15 (Reporter clarification.)

16 BY MR. KONSTANTAKOPOULOS:

17 Q Your Paragraph 80, Line -- the third
18 sentence says, "Vink discloses a local area network
19 having fixed addresses for its slaves."

20 So focusing on this sentence, does Vink
21 disclose that the slaves in Vink have fixed
22 addresses?

23 A So this paragraph says that every slave can
24 be provided with an unambiguous address.

25 Q Okay.

1 A If I look at the diagrams, the slaves are
2 connected in series, they have a specific order.

3 Q Well, that's another embodiment. I'm just
4 focusing on what Vink said in this paragraph.

5 Vink says unambiguous address, it doesn't
6 say fixed address correct?

7 Would you like me to restate the question,
8 Mr. Gomez?

9 A No, I'm just rereading this section here
10 and --

11 Q If it helps, the word "fixed" in Vink only
12 appears once at Page 21, Line 34.

13 A I think my analysis still holds.

14 The point I was trying to make is that
15 Vink doesn't disclose a hierarchical address system,
16 it describes a flat one. And the word I used was
17 "fixed," but flat is an appropriate alternative for
18 fixed.

19 Q Where does Vink use the word "flat" in
20 connection to how the slaves in Vink are addressed?

21 A So my experience with these systems and
22 reading the text of Vink carefully was that my
23 understanding is that they are trying to solve a
24 particular problem which has to do with what they call
25 the cause and effect.

1 The cause and effect is the response that
2 they get back from the system. And the whole
3 purpose of Vink is to ensure that the
4 cause-and-effect issues, particularly the amount of
5 time it takes for a response, isn't violated.

6 Vink's system of an addressing mechanism
7 that is not hierarchical, it is an appropriate
8 system because it does speed up the response times.

9 And if you look at the context of Vink and
10 using it in an industrial application, this would be
11 an appropriate type of invention where you're not
12 connected to an external network, you're just within
13 a local area network and there's no outside
14 requirement for a hierarchical address system.

15 Q Are you done?

16 A I'm sorry?

17 Q Are you done with your answer?

18 A Yes.

19 Q So Paragraph 80, the third sentence
20 reads -- these are your words -- "Vink discloses a
21 local area network having fixed addresses for its
22 slaves."

23 And you point to Vink Exhibit 1005 at
24 Pages 17, Line 38 to Page 18, Line 14; correct?

25 A That's what it says.

1 Q That's the only support you find for the
2 conclusion that you make in the third sentence of
3 Paragraph 80; correct?

4 A I'm sorry, say that again.

5 Q That's the only basis for support that you
6 cite for your conclusion that is the third sentence
7 of Paragraph 80 of your declaration; correct?

8 That's the only citation you offer after
9 this sentence; correct?

10 MR. STAMATOPOULOS: Object to form.

11 THE WITNESS: So this is under the context
12 of seven -- 7B and it's the language of the claim.
13 The header of the section is "Vink, Patrick and AAPA
14 do not suggest 'slave unit comprising one or more
15 ports to respective subscriber lines'."

16 And Vink does not support subscriber
17 lines, doesn't say that anywhere in the patent.
18 Vink discloses that its slaves are connected to I/O
19 modules to peripherals and not subscribers.

20 That's the primary point that's being made
21 here.

22 And the system that Vink describes, as I
23 said before, is appropriate for industrial
24 applications where tests and measurements are being
25 made.

1 And the purpose of Vink was to accelerate
2 the response times and to mitigate the
3 cause-and-effect issues that are associated with the
4 extra overhead of a hierarchical system.

5 BY MR. KONSTANTAKOPOULOS:

6 Q Let's look at actual evidence.

7 Vink characterizes the address of its
8 slaves as an unambiguous address; correct?

9 THE REPORTER: As a what?

10 THE WITNESS: Well, there's two points
11 that are being asserted here. The first one is that
12 Vink doesn't support subscriber lines, and I think
13 that's pretty clear from the text.

14 The second one is that the system that
15 Vink describes is designed to operate as efficiently
16 as possible for test and measurement equipment, and
17 Vink does say that. It describes it as being used
18 for test and measurement.

19 And the whole point of Vink's patent is to
20 avoid the cause-and-effect issues associated with
21 slower access methodologies such as hierarchical
22 addressing systems.

23 BY MR. KONSTANTAKOPOULOS:

24 Q I honestly don't know how this is
25 responsive to my question, so let me try it a

1 different way.

2 A Okay.

3 Q Can you look at Vink Page 17, Line 38?

4 A Yes, I'm there.

5 Q "As already discussed in the
6 introduction," Vink said, "every slave can be
7 provided with an unambiguous address."

8 Did I read that correctly?

9 A Yes.

10 Q Is unambiguous the same as fixed?

11 A Fixed is certainly one implementation of an
12 unambiguous address.

13 Q Is unambiguous equivalent to unique?

14 MR. STAMATOPOULOS: Object to form.

15 THE WITNESS: Even if it was fixed,
16 uniqueness would be a component of that.

17 BY MR. KONSTANTAKOPOULOS:

18 Q And the PSA we've seen of the '904 can be
19 a unique address; correct?

20 A I'm sorry, say that again.

21 Q The PSA, the pre-switch address of the
22 '904 patent can be a unique address for each chain;
23 correct?

24 MR. STAMATOPOULOS: Objection to form.

25 THE WITNESS: Let me go back to the '904

1 real quick.

2 The '904 patent in Column 7 does say
3 uniqueness is required, however, within any single
4 chain but need not be unique over the entire
5 multi-shelf system.

6 BY MR. KONSTANTAKOPOULOS:

7 Q If you remember, we discussed one
8 embodiment of the '904 patent with only a single
9 chain of slaves in that instance, which is covered
10 by the claims of the '904 patent, uniqueness in the
11 PSA would be required; correct?

12 A That still doesn't vacate the fact that a
13 PSA need not be unique over the entire multi-shelf
14 system.

15 And there are other conditions that we --
16 that -- and so the second part of the paragraph, "If
17 a PSA is not unique at the entire multi-shelf
18 system, another bit must be allocated," we haven't
19 delved into that.

20 But I have to think about, since I didn't
21 interpret for my declaration, how that would apply
22 to a single chain, but I would have to consider that
23 separately.

24 Q Right. But you understand that my
25 question does not relate to a multi-shelf system, it

1 only relates to a single chain; correct?

2 A In your hypothetical, you're only using one
3 chain.

4 Q So the hypothetical is not an embodiment
5 covered by the claims of the '904 patent; correct?

6 A That's correct.

7 Q So did your analysis of Vink assume that
8 "fixed" shares an identical meaning as
9 "unambiguous"?

10 A Well, fixed addressing would be one form of
11 uniqueness.

12 Q Correct. That's not my question.

13 My question was about the term
14 "unambiguous" that is being used, so let me give you
15 the question again.

16 Did your analysis of Vink assume that
17 "fixed" shares an identical meaning as
18 "unambiguous"?

19 MR. STAMATOPOULOS: Object to form.

20 THE WITNESS: My analysis includes the
21 fact that Vink states that the devices in a
22 so-called area network are provided unambiguous
23 addresses, from which it would have been evident to
24 a POSA that its addressing system is not
25 hierarchical.

1 BY MR. KONSTANTAKOPOULOS:

2 Q And an ambiguous address can change as
3 long as it is unique; correct?

4 MR. STAMATOPOULOS: Object to form.

5 THE WITNESS: Just like somebody could
6 rearrange the I/Os, nothing is -- it depends on the
7 context.

8 BY MR. KONSTANTAKOPOULOS:

9 Q All right. Let's move on.

10 Can you turn to Figure 6 of the '904? And
11 I only have a couple more topics.

12 A Let me bring up the '904 again.

13 Q Sure.

14 A Figure 6, uh-huh.

15 Q Figure 6 shows the details of an active
16 master in the system of Figure 5; correct?

17 A That's correct, Figure 6 is pointing to
18 Item 30 in Figure 5, which is the active master.

19 Q The active master has a switch identified
20 with reference number 90; correct?

21 A Did you say 92?

22 Q Ninety?

23 A Ninety, yes, there is a switch.

24 Q The active master has a pre-switch
25 identified with reference number 92; correct?

1 A Yes.

2 Q The active master has five ports
3 identified with reference numbers 94, 96, 98, 100
4 and 102; correct?

5 A Yes.

6 Q The three top ports that are labeled
7 Ports 0, 1 and 2 provide an interface with a
8 corresponding slave on chains 39, 37 and 36
9 respectively; correct?

10 A It says Port 0, chain 39; Port 1, chain 37;
11 Port 2, chain 36.

12 Q Port 4 provides an interface with a
13 standby master; correct?

14 A It says Port 3 to standby master 32.

15 Q Apologies, Port 3, correct. Port 3
16 provides an interface with a standby master. Thanks
17 for the correction.

18 A Yes, that's correct. It has a bidirectional
19 line going to the standby master.

20 Q Port 5 provides an interface with a
21 network; correct?

22 A Yes, it says to the network interface 24.

23 Q All these ports are physical interfaces;
24 correct?

25 A Those are ports to the various chains and

1 not to the subscribers.

2 Q My question is not where they go. The
3 ports are physical interfaces. We tracked that
4 already.

5 A We've established that subscriber lines are
6 physical ports -- or that they are ports and that they
7 are physical interfaces. I don't think we've
8 established that they are physical or if I need to
9 look that up. Give me a moment.

10 Q Port 94, for example, isn't that a
11 physical interface between the pre-switch and
12 slave -- the first slave of chain 39?

13 A "Figure 6 is a block diagram that
14 schematically shows details of active master 30 in
15 normal operation, in accordance with a preferred
16 embodiment of the present invention. Master 30
17 comprises a main switch 90 and a pre-switch 92," as
18 we've seen.

19 "The main switch receives downstream
20 (incoming) packets from the network physical layer
21 interface. The network interface has a switching
22 address 102, corresponding to a switch port
23 Number 5. (For the particular case of ATM
24 switching, this and the other port numbers in the
25 figure preferably correspond to UTOPIA addresses.)"

1 "The packets are distributed to chains 36,
2 37 and 39 at respective addresses 98, 96 and 94
3 (switch ports 2, 1 and 0). Upstream packets are
4 delivered to address 102 for transmission over the
5 network."

6 Q Isn't the switch port 0, 1 and 2 a
7 physical interface? That's my question.

8 A Well, we have physical interfaces and we
9 have ports. It doesn't say that it has to be a
10 physical interface in this embodiment.

11 Q Can it be a physical interface?

12 A Usually the ports are separate from the
13 interfaces. The ports actually define the logical
14 interface.

15 But the physical interface is just that,
16 it's a physical thing.

17 Q And the port is a physical thing?

18 A The use of ports, as we discussed before,
19 could be either logical or if you're talking about an
20 actual connection, it could be a physical port.

21 But here we are talking about a port being
22 a logical entity because it's switch port 2, 1 and
23 0.

24 Q But there is an actual thing here that
25 routes packets from the active switch -- excuse me,

1 from the active master to the slaves; correct?

2 A And that would be a physical layer
3 interface. The ports would work in conjunction with a
4 physical interface, but it doesn't necessarily have to
5 be a physical interface.

6 Q Okay. But there is a physical layer
7 interface between, for example, pre-switch 92 and
8 the first slave of chain 39 and that's port 0;
9 correct?

10 MR. STAMATOPOULOS: Object to form.

11 THE WITNESS: Well, there is a connection
12 between them. It doesn't say that there has to be a
13 physical interface, although there are embodiments
14 where that could be true.

15 BY MR. KONSTANTAKOPOULOS:

16 Q Okay. Can you turn to Figure 3 of the
17 '904 patent?

18 A Okay.

19 Q The active and standby masters communicate
20 with the slaves using packets; correct?

21 A I want to back up on my previous question,
22 on the previous question and cite to the abstract that
23 each daisy chain includes at least a first slave unit
24 connected by one of the physical interface lines to
25 the first master unit.

1 So it's possible that there is a physical
2 interface, like we discussed, as described in the
3 abstract.

4 Q Thank you for the clarification.

5 A One more time on your second question.

6 Q Yes. The active and standby masters of
7 Figure 3 communicate with the slaves using packets;
8 correct?

9 A In a preferred embodiment, not the only
10 embodiment, of this present invention, a multi-shelf
11 access system comprises two master units and a
12 plurality of slave units.

13 One of the masters serves as an active
14 master, through which the slaves normally receive
15 data packets from a core network.

16 Q The active and standby masters and the
17 slaves in that preferred embodiment form a
18 packet-switched network; correct?

19 A I'm sorry, one more time.

20 Q The active and standby masters and the
21 slaves in that preferred embodiment form a
22 packet-switched network; correct?

23 MR. STAMATOPOULOS: Object to form.

24 THE WITNESS: It switches packets, but
25 packet-switched network has a meaning that it would

1 be able to -- that's really more applied to
2 internetworking networks and not necessarily only to
3 shelf networks.

4 So it is switching packets, but
5 "packet-switched network" is a broader term in the
6 term of the art.

7 BY MR. KONSTANTAKOPOULOS:

8 Q Okay. Thank you.

9 Let's turn to Claim 19 of the '904 patent.

10 A Okay.

11 Q Do you see the conveying limitation
12 starting at Column 14, Line 18?

13 (Reporter clarification.)

14 THE WITNESS: I do.

15 BY MR. KONSTANTAKOPOULOS:

16 Q Claim 19 recites that the initial
17 downstream data packets are conveyed along the daisy
18 chain in a first direction; correct?

19 A "Conveying initial downstream data packets,
20 received from the network by one of the master units,
21 along the daisy chain in a first direction."

22 Q Do you see the next limitation starting at
23 Column 14, Line 22?

24 A Starting with "in the event"?

25 Q Correct.

1 So Claim 19 in that limitation recites
2 that the further downstream data packets are
3 conveyed along the daisy chain in the second
4 direction, which is the opposite direction; correct?

5 A Yes, that's in the case of a fault in the
6 daisy chain. The downstream packet is received from
7 the network by one of the master units along the daisy
8 chain in the second direction, opposite to the first
9 direction.

10 Q And no other data packets are received in
11 Claim 19; correct?

12 MR. STAMATOPOULOS: Object to form.

13 THE WITNESS: So when you say "no other,"
14 I read this as the initial packets being -- initial
15 downstream packets being in the case where there is
16 no fault.

17 And in the case of a fault, conveying
18 further downstream packets received from the network
19 by one of the master units along the daisy chain.
20 So these are two different conditions, but there's
21 lots of packets being transferred here.

22 I don't understand the question of there
23 are no other packets.

24 BY MR. KONSTANTAKOPOULOS:

25 Q Let's assume that there is no fault,

1 initial downstream packets are received along the
2 daisy chain in the first direction; correct?

3 A Yes, they are received from the network
4 along the daisy chain in a first direction.

5 Q And let's assume a fault happens in the
6 daisy chain. Do you have that in mind?

7 A Then we're on to the last limitation where
8 in the event of a fault of the daisy chain.

9 Q Right. Then the further downstream data
10 packets are received in the second direction;
11 correct?

12 A So the further packets are the packets that
13 are destined for -- I'm sorry, let me restart that.

14 The further packets correspond to -- I
15 believe that the further packets are the packets
16 that are destined for nodes that are unreachable due
17 to the fault.

18 And the initial downstream packets would
19 be packets that are destined for slaves that are not
20 affected by the fault.

21 Q That's fine.

22 I'm only saying that Claim 20 -- excuse
23 me, Claim 19 only refers to initial downstream data
24 packets and further downstream data packets;
25 correct?

1 A Well, the initial downstream data packets
2 correspond to the packets destined to a slave that's
3 not affected by a fault and the further downstream
4 packets correspond to the packets that are affected by
5 the fault.

6 Q Okay. And Claim 20 depends on Claim 19;
7 correct?

8 A Yes, it's a dependent claim.

9 Q And you understand that dependent Claim 20
10 incorporates all the limitations of independent
11 Claim 19; correct?

12 A Okay.

13 Q And Claim 20 specifies that the initial
14 and further data packets of Claim 19 are received by
15 the first master unit; correct?

16 A It says, "wherein the initial and further
17 downstream packets are received from the network by
18 the first master unit."

19 Q And the initial downstream data packets of
20 Claim 20 are still conveyed to the slaves in the
21 first direction; correct? This didn't change?

22 A Well, I see it says, "wherein conveying the
23 further downstream packets in the second direction
24 comprises conveying the further downstream packets
25 from the first master to the second master unit."

1 Q I'm talking about the initial downstream
2 data packets. They are conveyed to the slaves in
3 the first direction in Claim 20; correct?

4 A One more time on your question, the
5 initial --

6 Q The initial downstream data packets of
7 Claim 20 are conveyed to the slaves in the first
8 direction; correct?

9 A Claim 20 does not change the limitation that
10 was imposed in Claim 19.

11 Q Right. So the initial downstream data
12 packets of Claim 20 are conveyed to the slaves in
13 the first direction only once; correct?

14 A Claim 20 doesn't affect the limitation on
15 the initial -- it doesn't elaborate on the initial.

16 Q Again, let me ask you: The initial
17 downstream data packets of Claim 19 are conveyed to
18 the slaves in the first direction only once;
19 correct?

20 A I'm not quite sure I understand what "only
21 once" means.

22 The Claim 19 says that conveying initial
23 downstream packets, data packets, received from the
24 network by one of the master units along the daisy
25 chain in a first direction so as to deliver the

1 packets to the ports of the slave units.

2 Q Sorry, go ahead.

3 A Is that what you meant by "only once"?

4 Q Let's assume that the initial data packets
5 include five packets.

6 Do you have that in mind?

7 A Sure.

8 Q These five packets would be conveyed to
9 the slave by the active master only once; correct?

10 A Those -- so what you're saying is those
11 particular packets that came in --

12 Q Correct.

13 A -- initials and are unaffected by any faults
14 would be conveyed to the slaves?

15 Q Only once?

16 A I think the patent -- the inventor is using
17 the word "initial" as a mode in that it's the packets
18 that are being applied to -- that are sent to the
19 slaves that are not affected by faults.

20 Q Okay. But my point is let's assume there
21 is no fault in the daisy chain. The initial
22 downstream data packets will be conveyed to the
23 slaves only once; correct?

24 MR. STAMATOPOULOS: Object to form.

25 THE WITNESS: Well, packets -- data can be

1 retransmitted. But if you're looking at just those
2 instances, those very specific packets, and
3 excluding any retransmissions, they get sent once.
4 BY MR. KONSTANTAKOPOULOS:

5 Q And excluding any retransmissions, the
6 further downstream packets of Claim 20 are also
7 conveyed to the slaves in the second direction only
8 once; right?

9 A So the Claim 20 requires that the packets
10 received from the first downstream unit -- by the
11 first downstream unit are conveyed to the second
12 master unit. And that could be construed as a
13 transmission.

14 And then from the second master unit to
15 the slave units, they are only sent once to the
16 slave but they are sent through the second master.

17 Q Okay. Understood. Neither Claim 19 nor
18 Claim 20 discuss retransmissions; correct?

19 A That's not -- that's not here.

20 Q Okay. Can you please turn to
21 Paragraph 110 of your declaration?

22 (Discussion off the record.)

23 (Recess taken.)

24 BY MR. KONSTANTAKOPOULOS:

25 Q Can you please turn to Claim 4 of the '904

1 patent?

2 A All right. I'm there.

3 Q Column 12, Line 7, Claim 4 recites,
4 "wherein in normal operation, downstream data
5 packets received from the network are passed from
6 the first master unit to each of the daisy chains
7 via the first slave unit in each chain." Correct?

8 A Yes.

9 Q So in Claim 4, downstream packets are
10 received from the network from the first master;
11 correct?

12 A Well, yes, the claim says that the
13 downstream packets received from the network are
14 passed from the first master unit to each of the daisy
15 chains.

16 So by extension, it would be received by
17 the first master.

18 Q From the network; correct?

19 A From the network.

20 Q And Claim 5 incorporates all the
21 limitations of Claim 4; correct?

22 A Claim 5 is a dependent claim and depends on
23 Claim 4.

24 Q And for this reason, also in Claim 5,
25 downstream packets are received from the network by

1 the first master; correct?

2 A Again, the claim in Claim 4 does not say
3 that a first master actually receives them. It just
4 simply says that they are passed from the first master
5 to each of the daisy chains.

6 So I don't want to read in a limitation
7 that isn't actually there.

8 Q Okay. So Claim 6 incorporates the
9 limitations of Claims 4 and 5; correct?

10 A Correct. Claim 6 is a dependent claim that
11 depends on Claim 5. Claim 5 depends on Claim 4.

12 Q So in Claim 6, downstream packets are
13 passed from the first master unit to the slaves;
14 correct?

15 A Because it depends on Claim 4.

16 Q Correct. And similarly, we've done it
17 three times.

18 Claim 7, which incorporates all the
19 limitations of Claims 4, 5 and 6, in Claim 7,
20 downstream packets are passed from the first master
21 unit to the slaves; correct?

22 A Claim 7 depends on Claim 4. That depends on
23 Claim 4 and Claim 4 is an independent claim.

24 Q And Claim 8 -- I'm sorry, go ahead.

25 A So Claim 7 would incorporate Claim 4.

1 Q Claim 8 would also incorporate Claim 4;
2 correct?

3 A Because Claim 8 incorporates Claim 7, which
4 incorporates Claim 4.

5 Q Right. So it's master dependency?

6 A Right.

7 (Reporter clarification.)

8 BY MR. KONSTANTAKOPOULOS:

9 Q So in Claim 8, downstream packets are
10 passed from the first master unit to the slaves;
11 correct?

12 A So the language in Claim 8 according to
13 Claim 7, wherein the downstream packets for the slave
14 units in the portion of the daisy chain between the
15 location of the fault and the second master are
16 conveyed to the second master unit.

17 And that incorporates Claims 4 indirectly
18 through Claim 7, downstream data packets received
19 from the network are passed to the first master unit
20 to each of the daisy chains.

21 Did I get that right or did I jump that?

22 Q Let me strike that and give you a new
23 question.

24 So Claim 8, the downstream packets are
25 conveyed to the second master unit from the master

1 unit; correct?

2 A Claim 8 incorporates Claim 4 through
3 Claim 7. And Claim 4 says, downstream packets are
4 received from the network -- "downstream data packets
5 received from the network are passed from the first
6 master unit to each of the daisy chains via the first
7 slave unit."

8 Q So is it your understanding that Claims 4
9 through 8, the first master received the downstream
10 data packets from the network?

11 A Claim 4 does say, wherein in normal
12 operation, downstream data packets received from the
13 network are passed through the first master unit --
14 are passed from the first master unit to each of the
15 daisy chains.

16 Q Okay. So there's two options; right?
17 Either the first master receives the packets from
18 the network or the second master unit; correct?

19 A There's also the option -- let me see here,
20 within this claim?

21 Q Yes.

22 A Okay. Claim 8. So we've established that
23 in normal operation, downstream packets received from
24 the network are passed from the first master unit to
25 each of the daisy chains via the slave unit.

1 (Reporter clarification.)

2 THE WITNESS: Then in Claim 8, wherein the
3 downstream packets for the slave units in the
4 portion of the daisy chain between the location of
5 the fault and the second master unit are conveyed to
6 the second master unit from the first master unit.

7 So there's one more option here, which is
8 that the second master unit doesn't have to receive
9 it from the network, it receives it from the first
10 master unit.

11 BY MR. KONSTANTAKOPOULOS:

12 Q Correct.

13 So in Claim 8, the downstream packets are
14 received from the network by the first master unit
15 and now conveyed to the second master unit via
16 another one of the daisy chains for the slave units
17 in the portion of the daisy chain between the
18 location of the fault and the second master unit;
19 correct?

20 A Well, they are conveyed to the second master
21 unit from the first master unit via another one of the
22 daisy chains.

23 Q If the third master unit conveys the
24 downstream data packets to the second master unit,
25 wouldn't it be accurate to assume that the first

1 master unit receives the downstream data packets
2 from the network?

3 A I'm sorry, I missed that. Say that again.

4 Q If the first master unit conveys the
5 downstream data packets to the second master unit in
6 Claim 8, wouldn't it be accurate to assume that the
7 first master unit receives the downstream data
8 packets from the network?

9 A The second master unit -- so the downstream
10 packets for the slave units in the portion of the
11 daisy chain between the location of the fault and the
12 second master are conveyed to the second master from
13 the first master unit via another one of the daisy
14 chains.

15 So Claim 8, which depends on Claim 7 and
16 4, is just discussing once it has packets, how they
17 are being communicated to the other -- to the slaves
18 that are unaccessible directly, that aren't directly
19 accessible.

20 Q I understand that. I am just looking for
21 the origin of the downstream data packets.

22 So from the network, the first master unit
23 receives the downstream data packets and then uses
24 another one of the daisy chains to convey these
25 downstream data packets to the second master;

1 correct?

2 A It does incorporate Claim 4, which says that
3 the downstream data packets received from the network
4 are passed from the first master unit to the daisy
5 chains via the first slave unit.

6 Claim 8 says, wherein the downstream
7 packets for the slave units in the portion of the
8 daisy chain between the location of the fault and
9 the second master are conveyed to the second master
10 unit from the first master unit via another one of
11 the daisy chains.

12 So data that's available in the first
13 master is provided to the second master through a
14 daisy chain.

15 Q Okay. Can you turn to Page 58 of your
16 declaration?

17 A Is that Page 58?

18 Q Page 58, correct.

19 A Okay.

20 Q Can you explain the annotations on
21 Figure 3 on Page 58?

22 A So this appears to have an error in that the
23 blue arrow that's going to be standby master should be
24 going through an alternate slave chain, daisy chain.

25 Q So which slave is the intended recipient

1 of the downstream packets in the example of
2 Figure 3?

3 A It would be the slave that's inaccessible
4 from a direct -- that's not directly accessible.

5 Q So is that the bottom slave of chain 36?

6 A That's one of them. There's actually two
7 that are inaccessible.

8 Q And you're saying the downstream slaves
9 convey data to the first master via another daisy
10 chain; right?

11 (Reporter clarification.)

12 BY MR. KONSTANTAKOPOULOS:

13 Q If those slaves are the intended
14 recipients, why do they need to convey the data back
15 to the master?

16 A Because of the routing of each of the daisy
17 chains. As you can see in the diagram, the active
18 master has three different daisy chains that all go to
19 the second standby master.

20 Q Right. But you're saying that the slaves
21 themselves convey data to the first master?

22 A So the description should read that the
23 daisy -- that the first master conveys data to the
24 standby master through a second alternate slave.

25 I would have to go revisit this. And so,

1 yes, I'll have to revisit this.

2 Q Respectfully, I think you misinterpreted
3 Claim 8. May I point out the inconsistencies, if I
4 may?

5 MR. STAMATOPOULOS: Objection. I think
6 you can ask him questions. I don't think this is
7 the spot to point out inconsistencies.

8 MR. KONSTANTAKOPOULOS: That's fair.
9 Okay.

10 Q Mr. Gomez, can you please look at
11 Paragraph 108 on Page 57.

12 A I'm looking at 108.

13 Q The sentence that starts on the last line,
14 "Thus, Claim 8 explicitly states that the slave's
15 downstream packets reach the first master via
16 another daisy chain."

17 Do you see that?

18 That's what you write; correct?

19 A So Claim 8 says that wherein the downstream
20 packets for the first slave -- for the slave units in
21 the portion of the daisy chain between the location of
22 the fault and the second master are conveyed to the
23 second master unit from the first master unit via
24 another one of the daisy chains.

25 That's what the claim actually says.

1 Q So the claim says that the downstream
2 packets reaches the second master via another daisy
3 chain; correct?

4 A I'm sorry, I had a problem with the tool.
5 Say that again, please.

6 Q Claim 8 says that the downstream packets
7 are conveyed to the second master unit from the
8 first master unit via another one of the daisy
9 chains; right?

10 A Yes, it says, conveyed to the second master
11 unit from the first master unit via another one of the
12 daisy chains.

13 Q So the downstream packets reach the second
14 master unit via another daisy chain; correct?

15 A Correct.

16 Q So the sentence that starts, "Thus,
17 Claim 8 explicitly states that the slave's
18 downstream packets reach the first master via
19 another daisy chain" is inconsistent with the
20 language of Claim 8; correct?

21 A There appears to be an error here that I
22 need to correct.

23 Q Can you please turn to Paragraph 110 of
24 your declaration?

25 A I'm there.

1 Q The second sentence reads, "In Claim 7,
2 the flow of data is reversed in a single daisy chain
3 and reaches the second master before the first
4 master."

5 Did I read that correctly?

6 A You read it correctly.

7 Q Can you please point me in Claim 7 where
8 the data is reversed once the daisy chain reaches
9 the second master before the first master?

10 A This is in regards to data being transmitted
11 from the slave back up to the masters on which it
12 would reach the second master before the first, which
13 is consistent with Claim 7.

14 And the upstream data packets are passed
15 from the last slave unit to the second master unit.

16 Q Are you referring to the upstream data
17 there?

18 A In this particular sentence, yes.

19 Q But Claim 8 refers to the downstream
20 packets; correct?

21 A But the sentence says, "In Claim 7, the flow
22 of data is reversed in a single daisy chain and
23 reaches the second master before the first master."

24 Q So the portion of Claim 7 that refers to
25 the upstream packets is irrelevant to the analysis

1 of Claim 8; correct?

2 A Claim 8 depends on Claim 7, I believe. Let
3 me go back and look.

4 Q Correct.

5 A Correct.

6 Q And Claim 7 refers to both upstream data
7 and downstream data; correct?

8 A Claim 7 refers to both, correct.

9 Q But Claim 8 only refers to downstream
10 data; correct?

11 A Claim 8 pertains to downstream data.

12 Q So when you're analyzing in Paragraph 110
13 that even if the direction of the data flow was
14 reversed such that data was passed through the last
15 slave unit in the daisy chain to the second master
16 unit as in Claim 7, that does not satisfy the flow
17 of data required by Claim 8; correct?

18 Do you see that analysis you did?

19 A So this is accounting for the fact that
20 Claim 7 does have both downstream and upstream data
21 directions.

22 MR. KONSTANTAKOPOULOS: I pass the
23 witness.

24 THE WITNESS: I'm sorry?

25 MR. KONSTANTAKOPOULOS: I have no further

1 questions for now. So I pass the witness.

2 EXAMINATION

3 BY MR. STAMATOPOULOS:

4 Q Mr. Gomez, I have a few questions for you.

5 Counsel earlier identified certain errors
6 in your declaration. Do you recall that?

7 A Yes, I do.

8 Q Do those errors impact the sum and
9 substance of your analysis, and if so, how?

10 A So with regard to the errors that we talked
11 about at the beginning of the deposition, I pointed
12 out that the limitations in 7A and B -- 7A and B
13 omitted some of the claims, particularly Claim 9.

14 Claim 9's language is consistent with the
15 other Claims 1 and 4, I believe. So my opinions
16 don't change.

17 With regard to Claim 14 and 19 -- 14,
18 although the language of the -- of Claim 14 only
19 requires a single master, it still doesn't change
20 the limit of my analysis because my analysis covers
21 the case where either one or more masters are
22 available.

23 And in Claim 19, it's materially the same.
24 So, again, my analysis doesn't change.

25 Q More recently in the deposition, counsel

1 asked you if you had made certain errors.

2 Do you recall that?

3 A I do.

4 Q Did those errors impact your analysis and
5 if so, how?

6 Let me ask you a different question.

7 These errors were with respect to certain
8 dependent claim limitations; correct?

9 A That's correct.

10 Q Does your analysis change with respect to
11 the independent claims from which those claims
12 depend?

13 A No.

14 Q Now, earlier in your deposition you were
15 asked certain questions by counsel about
16 hierarchical and nonhierarchical protocols.

17 Do you recall that?

18 A I do.

19 Q And you were also asked some questions
20 about the addressing protocol employed in Vink.

21 Do you recall that?

22 A I do.

23 Q What type of addressing protocol is
24 employed in Vink?

25 A Vink uses an addressing system specific to

1 the layout of the architecture which is
2 nonhierarchical.

3 In other words, it's an addressing system
4 that's designed to work as fast as possible within
5 the context of Vink's invention.

6 Q What is your basis for the opinion that
7 Vink's system is nonhierarchical?

8 A Vink describes a -- I'll get to it in my
9 report.

10 Q Let me try a different line of questioning
11 to maybe help you.

12 Do you recall answering certain questions
13 about Paragraph 80 in your report and an opinion
14 that Vink discloses a local area network having
15 fixed addresses for its slaves?

16 A I do.

17 Q Is that the only spot where you expressed
18 opinions as to whether Vink is directed to a
19 nonhierarchical system?

20 A I don't believe so.

21 Q Let's turn to Paragraph 67 of your
22 declaration. Take a moment to look at Paragraph 67.

23 Does this refresh your recollection as to
24 whether there are other spots in your declaration
25 where you explain whether Vink's system was

1 hierarchical or nonhierarchical?

2 A These are many of the distinctions that Vink
3 makes in order to build an addressing mechanism that
4 can operate appropriately for its invention.

5 And the important part is that the
6 addressing is dependent on the sequencing -- whether
7 it's within the cascade or whether it's on the
8 slave, it's still dependent on the sequencing, which
9 is an important inherent part of Vink's invention.

10 That's not compatible with a hierarchical
11 mechanism which has overhead in identifying or
12 making the -- decoding the address selections.

13 Q Why do you say that they are incompatible?

14 A So a hierarchical addressing mechanism
15 usually entails a routing protocol or a routing table
16 and requires lookups, requires various types of
17 translations that would take time.

18 Vink's cause-and-effect issues have to do
19 with the ability to gets a response in an
20 appropriate amount of time and they are not -- those
21 two things are diametrically opposed.

22 Q Why is it important, if at all, to your
23 opinions in this case that Vink is directed to a
24 nonhierarchical system?

25 A Vink is being used as an -- as a prior art

1 for a system that is -- that teaches away from the
2 '904 patent.

3 It's a closed system that is -- it's a
4 closed system within a LAN that is designed for
5 industrial equipment and does not connect to a
6 network, nor does it connect to subscribers.

7 So the addressing mechanism used in Vink
8 is appropriate for the architecture and the goals
9 that Vink set out, which is to mitigate
10 cause-and-effect issues regarding test and
11 measurement equipment.

12 Q Now, you mentioned that Vink is directed
13 to certain types of industrial applications.

14 Do you recall if Vink distinguishes itself
15 at all from long-distance connections?

16 A Vink allows the local area network to
17 traverse longer distances from slave to slave. But it
18 does not allow for communication outside of this local
19 area network.

20 Q Is there any particular spot in Vink or
21 disclosure in Vink that led you to this conclusion?

22 A Vink doesn't disclose any network outside of
23 its invention.

24 Q Let me direct you to Vink, Page 1,
25 Lines 18 through 19. Let me read from Vink for you.

1 "For long-distance connections, public
2 networks equipped with cables or radio links are,
3 inter alia, available."

4 Do you see that?

5 A I do.

6 Q How, if at all, does this disclosure
7 impact your opinions as to whether Vink is directed
8 to long-distance connections?

9 A I think it identifies that long-distance
10 connections existed. But that's not what Vink's
11 invention is about.

12 Vink's invention is about constraining the
13 system to mitigate the issues that he identifies and
14 that networking protocols such as the ones he
15 identifies are something else.

16 Q Now, you mentioned the '904 patent and how
17 Vink teaches away from the '904 patent.

18 Do you recall being asked questions by
19 counsel as to whether there was a requirement for
20 uniqueness in a PSA, which I believe stands for --
21 let me refer you to that question.

22 Do you recall being asked certain
23 questions by counsel about a PSA disclosed in the
24 specification of the '904 patent?

25 A I do.

1 Q Do you recall being asked questions in
2 connection with a hypothetical scenario of a single
3 chain and whether there was a requirement for
4 uniqueness of PSAs in that single chain?

5 A I do.

6 Q Now, do you recall there being a
7 disclosure about a requirement for uniqueness in the
8 '904 patent in connection with the PSAs?

9 A Within the '904 patent or within the claims?

10 Q Within the '904 patent specification.

11 A Right. There is an embodiment that
12 describes -- that says that uniqueness -- that a PSA
13 not be unique over the entire multi-shelf system, but
14 uniqueness is required, however, within any single
15 chain.

16 Q In light of that entire disclosure, would
17 a PSA in the context of the claims of the '904
18 patent still be part of a hierarchical address
19 system?

20 A Yes, it would.

21 Q Why is that?

22 A That the '904 patent still connects to a
23 network that's a component of the invention. And in
24 order to do that would require hierarchical
25 addressing.

1 Q Now, do you recall being asked certain
2 questions about Patrick by counsel?

3 A I do.

4 Q Do you recall being asked certain
5 questions about disclosures relating to a MAC
6 address system in Patrick by counsel?

7 A I do.

8 Q Now, what types of addressing protocols
9 does Patrick teach a person of ordinary skill in the
10 art to use?

11 A Patrick teaches the use of a hierarchical
12 addressing mechanism. And one of the components of
13 that would be a MAC address that is described in the
14 figures.

15 Q Just to be clear, does Patrick contain any
16 disclosures that a nonhierarchical system should be
17 used?

18 A No. Patrick focuses primarily on
19 hierarchical addressing.

20 Q How, if at all, did that disclosure affect
21 your opinions as to whether a person of ordinary
22 skill in the art would combine Vink and Patrick?

23 A So the Vink invention and the Patrick
24 disclosures teach different things for different
25 reasons.

1 The Patrick invention teaches a mechanism
2 to reduce and conserve IP addresses, whereas the
3 Vink system teaches how to mitigate the
4 cause-and-effect issues particularly with responses.

5 And in such, the Vink addressing mechanism
6 which is a flat system, or a nonhierarchical system
7 I should say, is appropriate for its invention,
8 whereas the Patrick invention is very different.
9 They teach away from each other. One being flat,
10 one being hierarchical.

11 They are really not -- they are going in
12 different directions.

13 Q Now, you read Vink; correct?

14 A Yes, I did.

15 Q I want to direct your attention to Page 1
16 of Vink, Lines 29 through 34. I'm going to read a
17 passage from Vink on those lines.

18 "A large variety of protocols such as
19 CSMA/CD 'token passing', Aloha, et cetera, have been
20 developed for controlling the communication. For
21 further details, reference is made to the special
22 issue entitled 'Architectures of Local Area
23 Networks' in IEEE Communication Magazine, Volume 22,
24 Number 8, August 1984."

25 Do you see that?

1 A That was on Page 1?

2 Q Page 1, Lines 34 -- sorry, 29 to 34.

3 Do you see that?

4 A I'm sorry. I'm a little tired. That was
5 under Vink?

6 Q I understand, sir. I apologize, I'm just
7 going to have a couple more questions for you.

8 A Sure.

9 Q It's Vink Page 1, Lines 29 through 34.

10 Do you see a reference to token passing,
11 Aloha and other -- a large variety of other
12 protocols?

13 A I know I've read it. I'm trying to find it
14 right now. It's not where I'm expecting it to be.

15 Q You may want to try Page 3 of the exhibit.
16 I was referring to Page 1 of Vink, Page 3 of the
17 exhibit, 29 through 34.

18 A I do see it.

19 Q Does that passage change your opinion as
20 to whether Vink discloses a hierarchical or a
21 nonhierarchical system?

22 A No, because reading Vink in its entirety
23 teaches that these are examples, but it's not the way
24 Vink has -- examples of LANs, but it's not what Vink
25 has described in its embodiments.

1 Q Are these hierarchical systems exclusively
2 that are shown here?

3 A I haven't examined these in specific. Aloha
4 is an older technology.

5 But I would have to go back and analyze
6 them.

7 But the analysis of Vink shows me that
8 while these are examples of local area networks,
9 Vink is a nonhierarchical system.

10 Q To be clear -- to be clear -- sorry,
11 withdrawn.

12 To be clear, hierarchical LANs were known
13 at the same time as Vink was published; correct?

14 A Correct.

15 MR. STAMATOPOULOS: No further questions.
16 I'll pass the witness.

17 MR. KONSTANTAKOPOULOS: So counsel said
18 that I asked if you made -- if you made certain
19 errors and I actually asked if your analysis was
20 inconsistent with Claim 8. And you admitted that
21 you made an error. So just clarify that for the
22 record.

23 No more questions.

24 (Reporter clarification.)

25 MR. STAMATOPOULOS: Is that a question?

1 MR. KONSTANTAKOPOULOS: No, just to
2 clarify the record.

3 MR. STAMATOPOULOS: I think the record
4 speaks for itself, Theo. But in any event, not a
5 problem. Thank you.

6 MR. KONSTANTAKOPOULOS: We can go off the
7 record.

8 (Proceedings concluded at 5:08 p.m.)
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

CERTIFICATE OF DEPONENT

I have read the foregoing transcript of my deposition and except for any corrections or changes noted on the errata sheet, I hereby subscribe to the transcript as an accurate record of the statements made by me.

MIGUEL GOMEZ

SUBSCRIBED AND SWORN before and to me
this ____ day of _____, 20__.

NOTARY PUBLIC

My Commission expires:

1 I, LYNNE M. LEDANOIS, a Certified
2 Shorthand Reporter of the State of California, do
3 hereby certify:

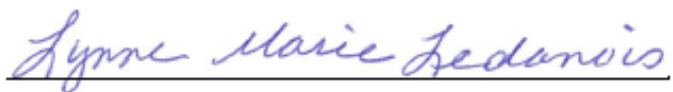
4 That the foregoing proceedings were taken
5 before me at the time and place herein set forth;
6 that a record of the proceedings was made by me
7 using machine shorthand which was thereafter
8 transcribed under my direction; that the foregoing
9 transcript is a true record of the testimony given.

10 Further, that if the foregoing pertains to
11 the original transcript of a deposition in a Federal
12 Case, before completion of the proceedings, review
13 of the transcript [] was [x] wasn't requested.

14 I further certify I am neither financially
15 interested in the action nor a relative or employee
16 of any attorney or party to this action.

17 IN WITNESS WHEREOF, I have this date
18 subscribed my name.

19
20 Dated: April 24, 2024
21
22
23

24 

LYNNE MARIE LEDANOIS

25 CSR No. 6811

1 NAME OF CASE: Cisco v Orckit IP

2 DATE OF DEPOSITION: 4/18/24

3 NAME OF WITNESS: Miguel Gomez

4 Reason codes:

5 1. To clarify the record.

2. To conform to the facts.

6 3. To correct transcription errors.

7 Page ____ Line ____ Reason ____

From _____ to _____

8

9 Page ____ Line ____ Reason ____

From _____ to _____

10

11 Page ____ Line ____ Reason ____

From _____ to _____

12

13 Page ____ Line ____ Reason ____

From _____ to _____

14

15 Page ____ Line ____ Reason ____

From _____ to _____

16

17 Page ____ Line ____ Reason ____

From _____ to _____

18

19 Page ____ Line ____ Reason ____

From _____ to _____

20

21

22

23

24

25

Signature of Deponent

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

ERRATA SHEET
VERITEXT/NEW YORK REPORTING, LLC

CASE NAME: Cisco Systems, Inc. v. Orckit IP, LLC
DATE OF DEPOSITION: 4/18/2024
WITNESSES' NAME: Miguel Gomez

PAGE	LINE (S)	CHANGE	REASON
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Miguel Gomez

SUBSCRIBED AND SWORN TO BEFORE ME
THIS ____ DAY OF _____, 20__.

(NOTARY PUBLIC) MY COMMISSION EXPIRES: _____

&	1012 151:25	188 4:5	148:11,20
& 3:12	152:3,9 154:3	19 5:5 17:23	164:7,11 166:3
0	10169 3:8	18:6 169:9,16	166:6,22 202:5
0 113:9 119:4	102 164:4	170:1,11	20 7:6 80:22
119:14,20	165:22 166:4	171:23 172:6	84:18 139:23
164:7,10 166:3	105 144:23	172:11,14	154:9 171:22
166:6,23 167:8	145:7	173:10,17,22	172:6,9,13,20
0002 19:22	108 184:11,12	175:17 188:17	173:3,7,9,12,14
20:4	11 17:23 117:3	188:23 192:25	175:6,9,18
1	117:7,11	1983 49:18	200:13 203:22
1 17:23 21:9,10	110 175:21	61:14	2000s 38:8
26:6,25 27:1	185:23 187:12	1984 196:24	2024 1:14 2:16
28:22 34:5,9	110a 140:14,16	1997 38:1,7	6:2 20:20 21:2
85:9 88:6	110b 140:16	39:20	201:20
89:14 117:8,9	115 139:20	1998 34:14	2025 5:3 10:9
129:12 138:6	140:5,13	39:20 45:17,19	10:11,13
139:18 143:9	116 139:20	45:23 46:2	2026 5:5 19:18
143:13,21	140:6	1999 42:21	19:19,22 20:15
144:22 145:3,6	12 176:3	2	20:16
164:7,10 166:3	12th 20:20 21:2	2 31:5 34:9	21 156:12
166:6,22	13 132:15	43:16 45:25	213 141:12
188:15 192:24	14 17:23 18:2	46:13,19 47:7	142:20
196:15 197:1,2	132:10 154:23	48:7 61:11,15	22 122:12
197:9,16 202:5	157:24 169:12	61:24 66:8	126:20 127:4
10 5:3 143:14	169:23 188:17	87:24 88:5	169:23 196:23
143:25 144:1	188:17,18	91:22 93:11,24	23 122:12
100 164:3	15 68:23 130:2	96:25 97:2,18	230 3:7
1001 83:9,13	16 134:11	103:1 108:25	24 137:11
10022 3:16	17 139:23	110:8 111:18	164:22 201:20
1005 129:5	140:3 154:23	129:11,12,13	25 41:13
154:22 157:23	157:24 160:3	132:18 134:22	26 110:18
1006 139:17	18 1:14 2:16	135:3,4 136:2	122:3
101 145:5	6:2 134:11	136:11 137:13	27 112:24
	154:23 157:24	138:7,13,15	28 17:16 96:25
	169:12 192:25	147:19 148:10	97:2,18 112:25

29 196:16 197:2,9,17	36 114:8,11,20 115:16 116:2 116:19 147:19 148:11 164:8 164:11 166:1 183:5	164:12 175:25 176:3,9,21,23 177:2,9,11,15 177:19,22,23 177:23,25 178:1,4,17 179:2,3,8,11 181:16 182:2 188:15	114:12 117:22 121:23 122:3 125:6,7,11 126:11,20 129:13,20 132:18 139:12 139:14 148:25 155:9 163:16 163:18 164:20 165:23 176:20 176:22,24 177:9,11,11,19
3		4/18/2024 203:3	
3 44:14 48:6 61:11 77:14 89:14 109:7 114:4 129:13 131:18,19,22 131:25 132:18 134:24 135:7 138:7,14,15,21 139:23 140:2 153:15 164:14 164:15,15 167:16 168:7 182:21 183:2 197:15,16 202:6	37 114:8,11,20 115:17 116:2 116:19 147:19 148:20 164:8 164:10 166:2	4/18/24 202:2 40 113:3 400 144:4 405 144:6 41 119:23 410 144:8,10 42 17:16 113:4 113:12 420 144:17 44 113:13 120:2 121:2,9 146:13,16 151:21	53 120:24 141:4 145:16 55 120:24 145:19 56 88:1 57 184:11 58 182:15,17,18 182:21 5:08 199:8
30 87:5 113:2 163:18 165:14 165:16	38 103:1 113:2 154:23 157:24 160:3	45 25:5 27:4,15 29:4 129:8 46 113:11,14 117:4,11 120:3 121:3 48 113:11 49 13:4	6 4:4 129:15 134:11 141:4 145:16 163:10 163:14,15,17 165:13 177:8 177:10,12,19 6,680,904 1:10 2:10 10:3 60 109:7 113:4 62 10:18,19 123:25 124:2 67 190:21,22
31 114:6 116:18	39 87:4,7,11,13 114:8,11,20,23 115:8,13,17 116:3,19 146:13,16 149:16,23 150:8,10 151:4 152:8 164:8,10 165:12 166:2 167:8	5 86:23,25 90:12 91:4 110:18 114:9	
32 124:2 164:14	4		
33 91:23 93:24	4 17:23 44:14 48:5 61:12 77:14 87:25 112:25 113:1 113:10 118:1 129:13 132:18 136:13,17 137:15 138:1,6 138:7,14,15,21 139:1 146:13		
34 91:23 92:16 93:11 108:25 113:8 119:2,12 119:20,25 130:2 156:12 196:16 197:2,2 197:9,17			
35 130:2			

6811 1:24 2:17 201:25 6954 201:24	139:9,11 177:24 178:1,3 178:9,12,24 179:2,9,22 180:2,13 181:6 181:15 182:6 184:3,14,19 185:6,17,20 186:19 187:1,2 187:9,11,17 196:24 198:20 80 154:5,12,19 155:17 157:19 158:3,7 190:13 800 3:15	124:21,24 125:7 126:21 146:12,14 153:17,19 160:18,22,25 161:2,8,10 162:5 163:10 163:12 167:17 169:9 175:25 192:2 193:16 193:17,24 194:8,9,10,17 194:22 92 163:21,25 165:17 167:7 94 164:3 165:10 166:2 96 164:3 166:2 98 164:3 166:2 9:08 2:16 6:3	abstract 50:6 85:8,11 167:22 168:3 abstraction 50:16,20 79:2 accelerate 159:1 accepts 92:10 103:11 107:13 107:18 access 10:8 19:17 71:23 72:2,15,20 79:19 84:12 85:14 159:21 168:11 accessible 9:15 181:19 183:4 accidentally 125:8 accordance 165:15 accounting 187:19 accurate 6:24 7:5 14:10 15:13,16 16:22 28:25 40:7,17 42:20 98:21 135:17 180:25 181:6 200:6 accurately 15:20 achieve 50:8
7			
7 112:24 114:4 117:25 118:23 118:23 119:2 119:12,23 120:23 122:12 129:16,16 130:3,13 131:12,13,23 132:1,19 133:15 137:17 138:8,9,13,21 139:9 161:2 176:3 177:18 177:19,22,25 178:3,13,18 179:3 181:15 186:1,7,13,21 186:24 187:2,6 187:8,16,20 7a 17:15,17,19 188:12,12 7b 17:15 18:8 158:12	9 17:24,25 18:9 188:13 9's 188:14 90 163:20 165:17 904 10:5 14:17 83:8,15,17,18 83:20,23 84:1 84:7,20,22,25 85:1,3,4,9 86:23 87:9 91:2 96:24 97:10 98:13,22 101:22 102:1,4 102:6,19 104:2 104:6 107:16 114:5,14 115:11 117:5 117:18 124:18	92 163:21,25 165:17 167:7 94 164:3 165:10 166:2 96 164:3 166:2 98 164:3 166:2 9:08 2:16 6:3 a a.m. 2:16 6:3 aapa 17:20 158:13 ability 67:10 124:25 191:19 able 19:9 26:21 41:15 55:13,16 55:21 63:8 67:12 70:9 133:19 169:1 above 47:5 48:4 120:4 142:12	
8			
8 129:16,16 130:3,13 131:12,13,23 132:1,19 133:15 137:17 138:8,10,14,21			

acm 28:15,17 acoustical 36:20 37:2,3 action 201:15 201:16 actions 113:7 active 88:9,15 89:2 113:2 117:20 125:14 126:13 127:7 132:21 134:5 134:23 135:5 136:12,15 137:6,15,16,20 137:25 138:6 138:25 149:22 163:15,18,19 163:24 164:2 165:14 166:25 167:1,19 168:6 168:13,16,20 174:9 183:17 actively 23:8 actual 42:10 159:6 166:20 166:24 actually 9:8 13:2 34:2,15 34:23 46:22 56:15 71:15 85:20 102:13 102:14 142:2 166:13 177:3,7 183:6 184:25 198:19	ad 80:18 add 11:20 17:25 18:1,9 21:2 additional 64:7 64:9,18 109:24 112:2 122:19 123:13 address 46:5 54:9,11 55:3,4 55:12,25 65:19 66:1 67:4,10 68:1,2,7 69:11 69:25 70:4,13 70:16 71:14,20 71:23 72:1,12 72:15,19 73:3 73:3,9,12,15,16 73:18 74:1,9,9 74:11,24 75:7 75:13,15,19,23 76:8,11,12,14 76:15,18,21 77:3,8 81:2,5 81:11,13,23 82:3,11,11,13 82:14,14,16,20 82:21 91:4,16 92:1,7,8,10,24 93:22,22 94:1 94:6,6,23 95:9 95:9,15,16 98:2,5,15,23 99:6,18 100:1 100:5,7,8,11,16	101:1,3,5,13,18 102:8,12 103:11,13 104:13,21 105:7,22,24 106:20 107:1 107:14,19 109:23,25 110:5,7,16 111:15,15,22 112:13,20,21 114:1,15 115:12 121:1 121:10,15,25 122:10,13,16 123:4,10 124:3 124:3,12,16,16 126:14,14,14 127:1,20 128:2 128:3,7,8,12,13 141:8,9,12,13 141:18,20,23 141:25 142:7 142:10,14,16 142:20,22,25 143:10,20 144:5,6,12,13 145:18 146:4 147:21 148:13 148:15,22 149:5,15 150:2 150:7,22 151:2 151:7,8 152:7 153:12 155:4 155:24 156:5,6	156:15 157:14 159:7,8 160:7 160:12,19,21 160:22 163:2 165:22 166:4 191:12 194:18 195:6,13 addressed 91:12 92:2,17 93:12,21 94:21 98:7 100:13,15 100:18 101:13 101:24 102:8 102:20 103:2,6 103:12,21 104:1,3,7,14,22 108:23 109:15 110:4,8,10,15 110:21,24 111:1,6,9 112:8,11,17 122:2,6 123:4 147:11 156:20 addresses 65:12 66:25 70:21 71:12 72:1,6,18 73:6 73:8,21 74:12 74:23 75:5,9 75:10,25 76:5 77:4 81:18,20 91:8,11 109:17 114:23 124:9 124:15 135:18 142:11 146:3
---	--	---	--

154:17 155:19 155:22 157:21 162:23 165:25 166:2 190:15 196:2 addressing 46:24 54:14,16 54:16,23 55:12 55:15,18,20,24 55:25 56:4 59:4,13,14 62:21 63:4,7 63:12,13,16,17 65:12 66:8,10 66:11,14,15 67:1,1 68:16 69:17,18 70:18 70:20,21 71:16 71:18 76:23,25 82:1 93:4 100:15 105:17 106:12 107:16 111:3 112:18 118:8 123:21 123:22 124:9 124:22 125:24 126:6,18,19,25 127:1,6,14,23 128:10 155:4 155:10 157:6 159:22 162:10 162:24 189:20 189:23,25 190:3 191:3,6 191:14 192:7	194:25 195:8 195:12,19 196:5 admits 146:9 admitted 198:20 affect 173:14 195:20 affected 171:20 172:3,4 174:19 ago 41:13 agree 107:2 149:1 ahead 58:5 74:19 88:3,4 99:4 116:16 174:2 177:24 aided 27:6 akin 78:18 alia 193:3 allocated 161:18 allow 42:2 50:21 60:14 124:12 139:7 192:18 allowed 20:25 21:7 allows 44:10 192:16 aloha 196:19 197:11 198:3 alternate 138:10,15 139:6,10,13	182:24 183:24 alternative 156:17 ambiguous 163:2 amount 22:8 157:4 191:20 analog 25:4,11 25:15 analogy 68:22 69:3 analysis 18:3,5 118:21 136:7 156:13 162:7 162:16,20 186:25 187:18 188:9,20,20,24 189:4,10 198:7 198:19 analyze 119:18 198:5 analyzed 118:19 144:1 analyzing 187:12 annotated 13:1 152:12,14 annotations 13:7,10,12,14 182:20 answer 7:18 8:13,14 14:14 19:11,13 43:1 52:23 56:21 69:4,5,6,7	72:10,11,17 82:5 83:5 104:19 109:19 113:21,23,25 115:24 123:17 131:2 136:6 137:5 157:17 answered 23:21 69:16 86:12 answering 7:15 16:18 190:12 answers 15:5 43:4 104:17 apologies 164:15 apologize 116:16 152:24 197:6 apparatus 85:14 90:11 appeal 1:2 2:2 appear 108:4 appears 88:23 156:12 182:22 185:21 appended 113:9 119:4,9 119:14,20 application 9:21,23 47:22 157:10 applications 158:24 192:13
--	--	---	---

applied 10:23 61:8 105:16 118:17 169:1 174:18 applies 18:3 apply 18:5 161:21 appropriate 92:5,20,24 93:16 95:24 96:11 98:10 100:21 101:7 101:17 105:7 105:21 106:20 106:25 109:3,6 110:17 111:25 113:15 120:2,4 120:7,8,10,12 120:14,18 126:7 147:20 148:13,21 149:5 150:2 151:7,7 153:23 153:25 156:17 157:7,11 158:23 191:20 192:8 196:7 appropriately 191:4 approximately 11:18 13:16 april 1:14 2:16 6:2 201:20 architectural 37:10	architecture 23:1 29:22 30:1,5,10,16,20 30:21,24,24 31:4,13,15,18 31:25 32:4,5 32:11,12,13,15 32:21 33:2,21 34:17 190:1 192:8 architectures 23:3,4 196:22 area 45:18 46:1 48:13,17,21 49:8,13 51:2 51:13,20 52:16 53:5,10 54:19 56:8,18 57:3,5 57:8,12,16,19 58:10 59:19,20 60:3,10,12,13 60:13,14,22,23 60:24 61:2,3,4 62:10,12 64:5 65:1,11 67:5,8 67:9,11,13,14 67:16,16,22,24 68:5,7,11 69:9 69:11,22,24 70:9 71:13 73:4 74:4,6 154:16 155:18 157:13,21 162:22 190:14 192:16,19	196:22 198:8 areas 28:11,23 29:3 34:9 67:11 arp 81:2 82:1,2 82:10 141:9,17 141:22,24,25 142:3,3,5,16 146:8 arranged 132:18 arrangement 155:6 arrow 152:20 152:20,21 153:2,3,14 182:23 arrows 132:3 152:14,15,17 152:18 art 14:17 38:1 38:4 142:6 169:6 191:25 195:10,22 asic 29:20 asics 25:6,6 asked 16:7,9,15 16:15,21,24 17:3,5 49:25 52:10 53:5 89:6 142:8 148:2 189:1,15 189:19 193:18 193:22 194:1 195:1,4 198:18	198:19 asking 7:23 11:8 16:17 23:23,24 24:19 30:5 49:14 69:21 87:15,20 102:22 assert 15:23 asserted 159:11 assigned 73:9 73:13,17,25 74:24 75:6,9 75:13,16,23 76:1,5,8,12,14 76:22 77:4,5,8 143:20 associated 86:1 86:13 159:3,20 assume 14:10 22:11 24:21 25:11,17 28:25 32:23 33:3 51:2 53:5,18 56:7 57:15,21 59:18 61:22 77:10 94:4 105:23 116:21 121:20,23,24 125:18 130:12 136:12 138:20 140:6 144:21 145:5 149:14 150:6 162:7,16 170:25 171:5 174:4,20
---	--	---	--

180:25 181:6 assuming 32:25 70:6 117:18 assumption 53:20 145:1,12 atm 45:4,7,9,10 84:11,16 165:23 attention 196:15 attorney 3:6,14 14:13 16:4 201:16 attorneys 12:10 audible 35:12 august 196:24 available 45:17 54:23 137:14 182:12 188:22 193:3 avenue 3:7,15 avoid 159:20 aware 8:6,7 36:11 awhile 137:12	108:20,22 113:1 129:1 133:5,19,20 139:4 143:9,17 157:2 160:25 167:21 183:14 186:11 187:3 198:5 balanced 57:13 band 42:12 63:4,7,12,13,14 63:15,16 64:9 bar 153:4 based 16:7 19:13 51:6 91:2 99:18 101:22 115:20 145:16 bases 19:5 basically 58:22 basis 19:8,9 155:5 158:5 190:6 beginning 144:4 188:11 believe 11:13 11:16 12:6 13:25 15:12,18 15:24 16:22 20:21 28:18,21 83:24 84:24 92:14 140:25 144:9 145:12 148:2 150:14 151:17 171:15	187:2 188:15 190:20 193:20 bell 38:24 best 126:24 bi 133:23 bidirectional 131:13 132:1 133:2,10 137:21 164:18 bit 53:15 56:14 58:12 79:12 161:18 bits 132:19 134:13,20,25 135:21,22 black 152:24 blind 152:17 block 113:11 165:13 blue 152:15,17 152:18,19,22 153:2,3 182:23 board 1:2 2:2 bottom 19:23 153:3 183:5 bounds 66:20 67:21 box 53:15 break 7:22 43:14 60:19 72:5 80:22 93:9 96:15,22 98:17 111:10 129:2 154:6,10	breaks 7:20 8:3 8:9 bridging 74:4 bring 163:12 broad 23:1 24:18 36:13 37:24 57:6,12 58:10 61:19 80:9 broadcast 106:11 119:24 broader 169:5 broadly 26:1 browser 9:23 build 191:3 built 34:15 bullet 134:15 134:17,18 135:20 bullets 134:12 bus 36:9 38:16 39:2,22 40:3 130:17,23,24 130:25,25 131:1,4 buses 36:6 130:25 bypass 150:16
b			c
b 5:1 188:12,12 back 11:23 13:25 20:13 36:25 37:7,25 38:3,20 39:19 43:10 46:9 48:1 49:18 72:10 83:3 88:11 96:18			c 3:1 c.v. 20:16,18,19 20:23,24 21:3 21:20 25:23,24 26:6 27:11,13 27:20 31:5

34:5 43:17 cable 39:5 129:17,18 130:4,4 139:24 139:25 140:6 cables 130:13 193:2 california 2:15 6:13 201:2 call 9:5 156:24 called 36:22 37:13 162:22 capability 92:13 capable 22:15 23:15 24:7 25:8 69:17 92:14 card 35:21,24 36:2 carefully 156:22 carries 120:25 carrying 92:10 103:11 107:14 122:16 123:10 cascade 155:6 191:7 case 15:23 16:6 35:21 41:5 59:1 69:3 103:15 105:15 106:18 107:18 107:24 108:9 130:15 143:8	165:23 170:5 170:15,17 188:21 191:23 201:12 202:1 203:2 cases 20:25 37:18 38:7 catch 29:13 36:1 39:24 49:9 68:3 87:5 138:2 category 29:20 29:24 cause 156:25 157:1,4 159:3 159:20 191:18 192:10 196:4 cd 196:19 cell 9:6 central 40:13 40:19 41:1,16 41:19 42:2,13 certain 26:10 26:22 188:5 189:1,7,15 190:12 192:13 193:22 195:1,4 198:18 certainly 77:25 160:11 certificate 200:1 certified 2:17 201:1	certify 201:3,14 cetera 196:19 chain 62:16 63:2 87:3,6,11 87:13 88:20 89:19 90:16 91:19 93:2 94:17 97:12 99:1,2,23 106:5,23 107:7 107:25 108:3 108:11,17 110:20,23 111:16 114:8 114:15,19,23 115:7,8,12,13 115:16,23 116:1,2,5,19,22 117:6,19 118:2 118:6,10,11,12 118:16 121:21 121:24 122:5,8 122:25 123:3 125:19,23 126:15,18 127:8 147:23 149:16,23 150:5,8,10,13 150:17,18,19 151:4,11,21 152:8 160:22 161:4,9,22 162:1,3 164:10 164:10,11 165:12 167:8	167:23 169:18 169:21 170:3,6 170:8,19 171:2 171:4,6,8 173:25 174:21 176:7 178:14 180:4,17 181:11 182:8 182:14,24,24 183:5,10 184:16,21 185:3,14,19 186:2,8,22 187:15 194:3,4 194:15 chained 91:7 chains 88:15,18 89:16 116:3 117:2,13,22 125:15 164:8 164:25 166:1 176:6,15 177:5 178:20 179:6 179:15,25 180:16,22 181:14,24 182:5,11 183:17,18 184:24 185:9 185:12 change 18:18 59:3 68:12 163:2 172:21 173:9 188:16 188:19,24
---	---	---	--

189:10 197:19 203:5 changes 16:1 16:11,19,21,24 17:1,3,5,7 200:5 characteristics 68:13 characterizes 159:7 check 11:23 circles 116:14 circuit 26:1 78:14,16,17,22 79:10,15,25 cisco 1:4 2:4 20:2 46:4 202:1 203:2 citation 158:8 cite 130:7 158:6 167:22 cited 14:6 claim 17:24,25 18:2,2,6,9 89:14 117:8,9 132:10,15 133:7 149:24 158:12 169:9 169:16 170:1 170:11 171:22 171:23 172:6,6 172:8,9,11,13 172:14,20 173:3,7,9,10,12 173:14,17,22	175:6,9,17,18 175:25 176:3,9 176:12,20,21 176:22,22,23 176:24 177:2,2 177:8,10,10,11 177:11,11,12 177:15,18,19 177:22,22,23 177:23,23,24 177:25,25 178:1,1,3,3,4,9 178:12,13,18 178:24 179:2,2 179:3,3,11,20 179:22 180:2 180:13 181:6 181:15,15 182:2,6 184:3 184:14,19,25 185:1,6,17,20 186:1,7,13,19 186:21,24 187:1,2,2,6,8,9 187:11,16,17 187:20 188:13 188:14,17,18 188:23 189:8 198:20 claims 11:3 17:23 85:1,3,4 85:7 89:13 95:5 117:1 128:16 144:1 161:10 162:5	177:9,19 178:17 179:8 188:13,15 189:11,11 194:9,17 clarification 33:6 37:12 48:14 49:23 105:19 129:6 130:18 143:22 147:8 155:15 168:4 169:13 178:7 180:1 183:11 198:24 clarify 46:10 50:1 122:22 198:21 199:2 202:5 clarifying 46:17 clean 7:14 clear 8:10 101:2 112:8 143:16 159:13 195:15 198:10 198:10,12 clearly 30:10 32:20 132:25 close 20:10 closed 9:1 125:8 192:3,4 coaxial 129:17 130:4 139:24 codes 202:4	collaborative 12:15 13:15 colleagues 27:23 color 152:17 column 87:24 91:22 93:11,24 96:25 97:2,18 103:1 108:25 109:7 110:8,18 111:18 112:24 114:4 117:3,7 117:11,25 118:23 119:2 119:12,23 120:23 122:3 122:12 139:23 140:2 141:4 145:16 146:13 147:19 148:10 148:11,20 151:21 161:2 169:12,23 176:3 com 25:5 combine 195:22 combined 77:16 combining 109:22 come 26:5,12 39:14 40:24 82:5 108:20
---	---	---	---

comes 42:10 44:24 149:11 comfortable 29:5 commencing 2:15 commission 200:20 203:25 common 141:8 141:10,25 142:15,17 146:2,7,8 communicate 9:8 36:14 43:13 45:24 46:13,16,19 49:3 51:14,21 51:25 53:16 58:25 62:8 63:2 96:21 129:2 167:19 168:7 communicated 181:17 communicating 47:20 48:9 62:20 90:13 communication 24:12 32:19 35:11,16 44:8 60:15 62:6 68:13 79:19 89:11 132:14 139:20,24 140:5 141:3	192:18 196:20 196:23 communicati... 26:15,16 27:6 companies 27:7 42:8 comparable 25:24 compatible 191:10 compilation 29:7,16 complete 15:5 15:13,17 16:22 96:6 completed 113:24,25 completely 6:24 15:20 completion 201:12 complicated 46:7 53:15 component 160:16 194:23 components 88:2 195:12 composed 129:14,25 comprises 97:11,19,24 99:21 165:17 168:11 172:24 comprising 17:21 88:1	89:19 90:4,7 158:14 computer 9:4 22:25 23:4 27:6,24 35:4,5 35:19,22,25 36:3,6,6,9 38:13,16,23 39:3,5,21 40:3 40:5 42:1,18 computers 36:17,21 concept 36:14 48:25 49:1 50:16,20 58:10 59:2 60:8,25 61:8 79:17 105:16 concerned 118:22 concluded 113:18,20 199:8 conclusion 158:2,6 192:21 concrete 56:21 85:20 conditions 118:17,23 134:9 161:15 170:20 confident 23:25 configurable 94:17	configured 88:16 confirm 9:21 10:11 104:20 153:1,8 conform 202:5 confused 42:25 71:5 72:24 confusion 71:10 133:13 conjunction 12:9 44:2 167:3 connect 38:22 41:25 42:19 43:23 44:3,11 45:14,22 47:1 48:12,21 49:8 49:13 53:19 54:20 59:12 60:14 61:2 126:1,6 127:17 139:21 140:9 192:5,6 connected 33:4 33:20 35:3,5,6 35:18,24 36:3 36:8 39:2 40:21 53:13 66:22 67:16 87:10,12 88:14 89:9,10,17,20 89:22,24 129:13 135:15 135:19,23
--	---	--	--

140:7 141:12 142:20,21 155:7,9 156:2 157:12 158:18 167:24 connecting 42:17 46:3 126:3 connection 10:2 82:1 130:16 140:14 140:15 156:20 166:20 167:11 194:2,8 connections 192:15 193:1,8 193:10 connectivity 42:2 connects 67:25 153:3 194:22 conserve 196:2 consider 161:22 considerable 22:8 consist 129:17 130:4 consisted 128:6 128:7 consistent 71:3 153:7,16,18 186:13 188:14 consists 48:5	consolidate 41:2 constrain 61:18 constrained 74:10 constraining 193:12 constructed 59:11 construction 90:10 construed 175:12 consult 142:22 143:6 consulted 34:12 consulting 28:22 29:1,3 34:9 consults 141:14 contain 195:15 context 85:19 87:9,21,23 143:18 144:1 157:9 158:11 163:7 190:5 194:17 continue 96:24 103:14 continues 105:20 contract 34:15 contributed 12:16	control 122:15 123:9 controlling 196:20 conversation 65:16 convey 94:11 95:8,14 150:10 181:24 183:9 183:14,21 conveyed 111:23 113:13 149:23 151:10 169:17 170:3 172:20 173:2,7 173:12,17 174:8,14,22 175:7,11 178:16,25 180:5,15,20 181:12 182:9 184:22 185:7 185:10 conveying 110:18 122:4 169:11,19 170:17 172:22 172:24 173:22 conveys 92:3 92:19,25 93:14 94:2,8,25 95:22 96:9 98:8 99:8 100:19 101:15 104:15 106:3	106:21 109:1 110:11 147:21 149:6 150:3 180:23 181:4 183:23 copy 92:25 106:3,21 120:1 120:11 147:21 149:6 150:3,11 151:10,14 152:21 153:3 153:13,15,24 core 88:10 126:21 168:15 correct 7:2 8:17 9:9,10,17 9:18,24,25 10:3,4 13:7,11 15:23 16:13 18:19 19:1,5 20:17,20 21:6 21:12,16,19 22:3,7,23 27:1 27:12,20 28:23 28:24 29:10,17 30:7 31:13 32:11,16 34:6 34:7,10 35:2,4 35:19 36:9,10 36:17 37:11 38:18 39:5,23 43:11,21,24 44:11 46:21 47:25 49:8,13 50:3 51:15,22
---	--	--	--

52:7,17 53:9	131:14 132:15	180:19 182:1	150:23 151:3
54:8,24 55:13	132:23 133:16	182:18 184:18	153:12
55:17,22 56:1	134:4,14,19	185:3,14,15,20	cost 131:8
58:2,19,20	140:12 143:3	185:22 186:20	counsel 3:3,11
65:13 66:7,11	143:11 145:1,2	187:1,4,5,7,8	8:4,8,12 11:11
67:2 68:2,8	146:5,25 148:3	187:10,17	11:12,19 96:22
69:12 70:14,22	148:4 149:3,19	189:8,9 196:13	129:2 188:5,25
71:13,16,19	149:23 150:13	198:13,14	189:15 193:19
72:2,20 73:5	150:17 151:9	202:6	193:23 195:2,6
73:10,18 74:1	151:15,18	correction	198:17
74:8,10,13,25	152:13 153:6	164:17	counsel's 14:18
75:7,13,20	154:20,23,24	corrections	15:19
76:2,9,16,19	156:6 157:24	200:4	count 7:5 13:18
77:1,21 78:6	158:3,7,9	correctly 70:12	couple 163:11
78:24 80:1,13	159:8 160:19	79:14,16 97:15	197:7
81:3,7 83:15	160:23 161:11	109:21 120:5	coupled 109:10
83:16 86:15	162:1,5,6,12	121:4 124:6	court 6:21 7:11
87:1,19 93:23	163:3,16,17,20	129:19 154:18	covered 22:20
94:4 97:5 99:9	163:25 164:4,9	160:8 186:5,6	24:20 161:9
99:18 101:8	164:13,15,18	correspond	162:5
103:3 104:23	164:21,24	105:25 114:12	covers 188:20
106:13,16	167:1,9,20	115:20,22	created 13:2
107:5 108:1,12	168:8,18,22	165:25 171:14	37:1 65:6 83:1
110:9 111:9,16	169:18,25	172:2,4	csma 196:19
112:5,15,22	170:4,11 171:2	corresponding	csr 1:24 201:25
114:2,3,9,16,24	171:11,25	135:14,22	curriculum 5:5
115:13 116:3,8	172:7,11,15,21	144:14 152:7	cut 49:22 74:18
117:6,8,23	173:3,8,13,19	164:8 165:22	113:21
118:6,12 119:9	174:9,12,23	corresponds	d
119:15 120:8	175:18 176:7	105:24 107:1	d 4:1 5:1
122:23 123:22	176:11,18,21	111:22 113:8	daisy 62:16
124:20,22	177:1,9,10,14	114:9 116:7	63:2 88:15,20
125:12,16,17	177:16,21	119:3,19	89:16,19 90:16
126:15 127:13	178:2,11 179:1	135:19 148:15	91:7,19 94:17
129:23 130:1,5	179:18 180:12	149:16 150:7	110:19,23

117:2,13 122:5 122:8 167:23 169:17,21 170:3,6,7,19 171:2,4,6,8 173:24 174:21 176:6,14 177:5 178:14,20 179:6,15,25 180:4,16,17,22 181:11,13,24 182:4,8,11,14 182:24 183:9 183:16,18,23 184:16,21,24 185:2,8,12,14 185:19 186:2,8 186:22 187:15 data 25:5 26:14 26:16 27:5 35:12,17 36:14 36:23 37:4 40:13 41:15 42:13 47:24 49:1 51:10,10 51:10,22 52:6 52:6,11,13,19 53:21,24 54:2 55:16,21,25 56:1 58:7 59:6 60:11 61:4 62:11,22,25 64:10,12,15,16 64:16 66:9,10 66:25 67:7,12	68:6 69:10,23 73:21,24 78:9 78:23 81:14 87:15 88:6,10 88:19,22 89:7 110:19 113:1 122:4 132:19 132:22 134:5 134:13,18,20 134:23,25 135:6,10,14,18 135:21,22 136:2,13,15,19 137:14,25 138:5 139:7 144:3,4,8,10 168:15 169:17 169:19 170:2 170:10 171:9 171:23,24 172:1,14,19 173:2,6,11,17 173:23 174:4 174:22,25 176:4 178:18 179:4,10,12 180:24 181:1,5 181:7,21,23,25 182:3,12 183:9 183:14,21,23 186:2,8,10,14 186:16,22 187:6,7,10,11 187:13,14,17 187:20	date 201:17 202:2 203:3 dated 201:20 day 38:21 200:13 203:22 days 37:8 46:9 declaration 5:3 10:1,12,16 12:7,8,14,18,20 13:4,6,9,17,24 14:4,6,10 15:3 15:4,7,13,17,18 15:22,25 16:2 16:12,20,22,25 17:2,6,8,9,14 18:11,18,21 19:1,4,8,10,15 85:7 123:20,23 129:9,10 130:9 141:1 154:4,13 158:7 161:21 175:21 182:16 185:24 188:6 190:22,24 declarations 13:20,22 decoding 191:12 deeply 23:2 define 31:17,23 33:21 66:20 74:12 79:11 142:2 166:13 defined 32:21 44:8 45:3,9	81:23 100:17 definitely 31:14 66:13,17 definition 21:22 30:15,15 31:3 85:22 deliver 173:25 delivered 135:25 166:4 delved 161:19 demultiplexer 113:4,5,12 120:1,11 121:1 121:8,16 depend 16:3,14 138:18 189:12 dependency 178:5 dependent 172:8,9 176:22 177:10 189:8 191:6,8 depending 52:19 61:10 113:6 depends 36:19 52:1,2,12,13,18 52:24 54:13,14 55:8 61:6,19 64:3 138:10 163:6 172:6 176:22 177:11 177:11,15,22 177:22 181:15 187:2
--	--	--	--

deponent 200:1 202:25 deposed 7:2 deposition 1:13 2:14 5:2 6:16 7:8,13,21 8:2 11:1,9,13 14:4 16:11 18:13 188:11,25 189:14 200:4 201:11 202:2 203:3 describe 31:4 31:15 56:14 133:23,25 described 64:20 87:24 88:25 96:1 98:22 120:4 127:14 153:19 168:2 195:13 197:25 describes 41:22 89:14 90:11 98:14 141:24 156:16 158:22 159:15,17 190:8 194:12 describing 58:14 90:9,10 description 5:2 30:22,23 42:3 42:20 68:11 89:13 143:24 153:19 183:22	descriptions 71:3 design 25:4,12 25:15,22 26:2 26:15 29:20 34:19,22 designed 21:21 23:1,15 30:24 31:12 32:6 34:16 35:11 38:13 40:18 50:1 57:7,15 61:11 67:4,17 70:8 78:9 79:3 125:3 159:15 190:4 192:4 designing 23:3 25:5,6 desk 9:13 desktop 9:22 desmarais 3:4 desmaraisllp.... 3:9 destination 65:19 106:15 106:16 141:11 142:19 144:5 144:12 149:2 destined 97:13 99:3,15,17,23 107:5 171:13 171:16,19 172:2 detail 31:4	details 98:19 163:15 165:14 196:21 detected 17:13 detection 92:12 122:14 determination 99:16 101:1,25 103:5 110:14 111:13,21 112:14 121:16 determine 97:12 99:2,14 99:23 101:6 104:3,6 111:8 112:3 141:8,17 141:22,25 142:7,14 145:18 146:3 determines 102:20 103:16 determining 102:7 104:21 142:10 developed 26:9 34:16 196:20 development 14:3 device 34:25 35:3,15,18 40:5 devices 9:3 38:21 39:4,22 40:21 127:2 162:21	diagnostic 122:14 diagnostics 92:13 diagram 32:25 33:24 108:5 139:7 143:12 143:14 144:2 165:13 183:17 diagrams 108:15 156:1 dial 37:7,9 diametrically 191:21 difference 108:17 different 14:8 18:3 33:17 39:8 40:24 41:2,7 42:11 43:25 44:19 45:2,11 48:16 48:23 50:5,23 50:24 54:17 57:21 58:16 59:7 60:2,8,23 61:2,9,16,25 63:9 68:6,8 69:3,6,10,11,16 69:23 70:17 71:21 72:7,14 81:9 82:18,21 82:25 84:9,10 86:10 88:2 89:4,12 93:4
---	---	--	--

94:14,18 95:2 96:12 97:2,4,6 98:14 99:11,11 102:3 103:19 105:5,16,17 106:11,12 107:20 108:4 112:19 123:8 130:24 137:22 138:4,18 141:7 141:7 142:12 142:13 144:24 145:8,17,18 155:12 160:1 170:20 183:18 189:6 190:10 195:24,24 196:8,12 differentiate 13:21 differently 80:20 difficult 56:20 digital 24:6,8,9 24:12,12 25:3 26:1 29:24 30:2 84:12 direct 55:13,16 55:21 85:8 112:15 132:10 183:4 192:24 196:15 directed 190:18 191:23 192:12 193:7	direction 88:18 132:20,23 133:8 134:1,6 138:11,16 139:8,11 169:18,21 170:4,4,8,9 171:2,4,10 172:21,23 173:3,8,13,18 173:25 175:7 187:13 201:8 directionality 133:23 directions 132:3 133:1,3 138:17 187:21 196:12 directly 14:14 53:13,17 140:10 141:12 142:20 181:18 181:18 183:4 directs 110:25 111:5 112:10 disciplines 22:16,20 disclose 20:25 21:8 155:21 156:15 192:22 disclosed 193:23 discloses 129:21 154:16 155:18 157:20	158:18 190:14 197:20 disclosure 192:21 193:6 194:7,16 195:20 disclosures 195:5,16,24 discover 18:12 18:20 81:21 82:2 137:23 discovery 55:11 82:7,8 discuss 8:4,8 22:17 27:14 57:11 102:3,14 118:20 153:22 175:18 discussed 8:9 58:16 59:21 60:2 85:18 93:10 95:2,19 98:13 103:20 107:13 110:8 119:11 124:11 126:17,19 160:5 161:7 166:18 168:2 discusses 97:4 118:24 137:10 139:5 155:3 discussing 25:9 25:25 102:13 155:11 181:16	discussion 43:5 96:24 98:18 124:14 128:17 152:5 175:22 distance 192:15 193:1,8,9 distances 192:17 distinction 89:5 123:20 distinctions 191:2 distinguishes 192:14 distributed 166:1 doable 46:2 doctor 25:1 document 10:22,24 14:9 14:19 20:14 23:13,14 83:11 136:9 137:1,12 documents 9:11,14 11:6 11:10 12:22 14:3,5,20,22 15:1 doing 25:7 65:7 70:17 127:22 131:8 domains 25:4 door 9:1,2 dotted 139:14
---	--	---	--

double 129:14 129:21,24 130:15 download 19:17 downstream 88:16 89:1 110:19 113:1 122:4 147:6,17 148:5 149:2 165:19 169:17 169:19 170:2,6 170:15,18 171:1,9,18,23 171:24 172:1,3 172:17,19,23 172:24 173:1,6 173:11,17,23 174:22 175:6 175:10,11 176:4,9,13,25 177:12,20 178:9,13,18,24 179:3,4,9,12,23 180:3,13,24 181:1,5,7,9,21 181:23,25 182:3,6 183:1 183:8 184:15 184:19 185:1,6 185:13,18 186:19 187:7,9 187:11,20 drawing 12:23 12:25 13:3	drawings 12:19 12:21 13:6,9 13:13 84:20,21 84:22,24 drawn 12:24 drivers 26:17 dsl 37:10,16,18 37:19,22,25 38:6,11,12 39:1,20 40:2,4 40:6,9,10,12,16 40:17,17,20 41:14,22,25 42:24 dslams 84:13 due 171:16 duly 6:6	100:16 134:1 139:9 147:17 148:5 166:19 179:17 188:21 elaborate 63:25 121:11 173:15 element 31:15 89:14 90:1,2,2 90:6 92:22 elements 88:1 96:12 emanate 61:13 emanated 61:14 embodied 90:12 embodiment 91:23 92:15 93:8,10 94:5 94:22 95:4,6 95:21 96:1 98:21 102:11 103:21 104:11 104:12,25 105:2,5 106:19 107:12,15 108:22 109:7,8 114:14 115:11 117:5,18 118:7 119:11 120:19 125:18 126:7 126:13 128:5,6 128:14 153:19 156:3 161:8 162:4 165:16	166:10 168:9 168:10,17,21 194:11 embodiments 93:5,7 97:3,5,6 98:14 103:20 116:23 167:13 197:25 embody 85:21 89:13 emphasis 119:13 employed 68:14 137:18 189:20,24 employee 201:15 employing 132:4 employment 21:23 23:13 26:11,22,24 encapsulated 144:11,18 encapsulation 78:11 79:1,5 ended 20:11 engaged 23:17 engineer 30:22 engineering 27:6 ensure 157:3 entails 191:15 entire 114:6 115:2 116:11
	e e 3:1,1 4:1,1 5:1 5:1 6:11,11 earlier 124:11 153:21 188:5 189:14 easy 137:5 effect 156:25 157:1,4 159:3 159:20 191:18 192:10 196:4 efficiently 159:15 effort 12:15 13:15 eighty 154:20 either 70:13 88:17 94:15		

116:18 161:4 161:13,17 194:13,16 entirely 58:3 80:3 entirety 140:20 140:22 197:22 entitled 8:9 196:22 entity 166:22 envision 33:17 equipment 159:16 192:5 192:11 equipped 193:2 equivalent 30:12 69:2 160:13 errata 200:5 203:1 error 17:17,24 18:12,21 182:22 185:21 198:21 errors 17:10,13 17:14 188:5,8 188:10 189:1,4 189:7 198:19 202:6 essentially 44:9 established 165:5,8 179:22 et 196:19 ethernet 43:20 44:16,18,20	45:11,13,21 46:12,18,20 48:8,11,12 50:13 51:3,6,9 51:14,21 52:5 53:1,6,11,14 58:16 59:1,20 60:3,11,22 62:11 65:11 66:5 event 169:24 171:8 199:4 evidence 159:6 evident 162:23 exact 13:18 exactly 23:21 27:22 64:21 111:2 examination 4:3 6:7 99:5 113:6 188:2 examined 198:3 examines 97:11 98:25 99:22 113:5 example 14:16 14:25 22:25 24:3,24 27:23 27:25 32:14 42:16 50:12 53:2 56:4,9 62:16,21 70:19 71:19 73:21 90:12 91:3	114:22 115:8 115:13 127:5 128:9 129:17 130:3 136:3 140:12 142:15 165:10 167:7 183:1 examples 22:14 124:15,17 125:2,3 197:23 197:24 198:8 except 200:4 excerpts 12:21 excess 7:6 exchange 58:7 excluding 175:3,5 exclusively 198:1 excuse 107:22 120:24 166:25 171:22 exhibit 5:3,5 10:8,9,11,13 14:9 19:18,19 19:21,22,22 20:4,15,16 83:9,9,13 129:5,20 139:17 151:24 151:25,25 152:1,2,3,9,12 152:14 154:3 154:22 157:23 197:15,17	exhibits 9:23 13:23 exist 61:12 existed 193:10 existing 40:11 exists 41:16 71:21 72:14 expansion 36:6 36:9 38:16 39:2,22 40:3 expecting 197:14 experience 19:16 23:24 24:4 25:4,5 27:4,16 28:3,5 28:8 29:10,17 84:14 156:21 experimenting 46:8 expert 14:18 15:19 21:15,22 22:2,6,9,12,22 23:11,20,25 24:14,22 25:8 25:19 26:3 27:10,18,24 29:2 34:13 expert's 11:5 expertise 21:12 21:21 24:1,21 25:13,15,18 26:6,25 27:11 27:19 28:3 29:23 30:6,7
--	---	--	---

34:6 experts 15:6 expires 200:20 203:25 explain 44:13 50:18 82:2 87:10 105:9 107:15 182:20 190:25 explanation 48:10 explicitly 184:14 185:17 explore 134:8 express 17:7 19:7 expressed 16:2 16:12,20 17:1 190:17 extension 176:16 extensive 24:4 25:4 extensively 22:5 extent 140:25 external 38:21 126:21 127:18 157:12 extra 64:3 159:4 extraneous 33:12	f f 4:1 5:1 fabric 92:4,19 93:1,14 94:3,9 94:12 95:1,23 96:10 98:9 99:9 100:20 101:15 104:16 106:4,22 109:1 109:5,17 110:12,14,25 111:5,7,24 112:3,10,14 113:11,14 120:3,9,13,17 121:2,18 147:22 149:7 150:4,11 facilitated 111:3 facilitates 152:5 fact 24:13 84:15 139:8 161:12 162:21 187:19 facts 202:5 fair 18:23 22:11 24:21 25:1,17 27:5 28:6,10 39:19 42:3 77:10 94:4 105:23 119:22 124:10 130:10 140:6	149:12 184:8 fairly 61:19 falls 18:4 familiar 28:13 28:15 47:8,11 47:14 78:3 130:10,11 far 97:23 fast 80:17 190:4 fault 138:20 170:5,16,17,25 171:5,8,17,20 172:3,5 174:21 178:15 180:5 180:18 181:11 182:8 184:22 faults 174:13 174:19 february 20:20 21:2 federal 201:11 feel 22:6,22 23:24 29:4 felt 12:16 fiber 129:17 130:4,13 131:3 139:25 140:6,9 fiberoptics 141:2 fibers 130:10 130:11 field 28:9,10 fifo 113:13 120:2,12 121:2	121:9,17 fifty 145:21 figure 86:23,25 90:12 91:4 112:25 113:1 113:10 114:9 114:12 117:22 121:23 125:6,7 125:11 126:11 126:20 129:11 129:12 131:18 131:19,22,25 134:22 135:3,4 136:11 137:13 139:18 143:9 143:13,14,21 143:25 144:1 144:22 145:3,6 148:25 155:9 163:10,14,15 163:16,17,18 165:13,25 167:16 168:7 182:21 183:2 figures 195:14 file 11:4 14:24 filed 20:19 final 108:21 financially 201:14 find 25:8 96:4 97:16 137:1 139:4 158:1 197:13
---	---	--	--

fine 34:4 53:18 111:12 154:6 154:10 171:21 finish 7:15 first 20:1,8 52:16 53:21,23 54:2 55:5 60:10 61:3 68:25 69:24 85:15 87:11,16 87:16 89:7,10 89:19,21,22,23 90:1,6,6 99:25 105:8 109:11 109:12,14,16 111:14 113:3,4 134:14,15,17 134:18 140:10 143:15 144:4,6 144:8,10 149:23 150:17 150:18,18 151:12 153:9 159:11 165:12 167:8,23,25 169:18,21 170:8 171:2,4 172:15,18,21 172:25 173:3,7 173:13,18,25 175:10,11 176:6,7,10,14 176:17 177:1,3 177:4,13,20 178:10,19	179:5,6,9,13,14 179:17,24 180:6,9,14,21 180:25 181:4,7 181:13,22 182:4,5,10,12 183:9,21,23 184:15,20,23 185:8,11,18 186:3,9,12,23 fit 57:11 fits 66:17 five 11:24 129:10 164:2 174:5,8 fixed 154:16 155:1,7,10,19 155:21 156:6 156:11,17,18 157:21 160:10 160:11,15 162:8,10,17 190:15 flat 156:16,17 156:19 196:6,9 flexibilities 102:4 flexible 101:3 102:1,6 flow 143:14 144:2 186:2,21 187:13,16 flows 66:16 77:23,25	fly 34:1 90:21 focus 41:5 63:11,16 93:8 93:10 147:4 148:13 focuses 195:18 focusing 12:7 155:20 156:4 folder 20:10,10 20:11 follow 27:22 followed 72:17 following 72:11 113:6 follows 6:6 foregoing 200:3 201:4,8 201:10 forgotten 12:3 form 22:13,24 26:19 27:2 28:1 29:18 30:8,13 32:17 33:13,23 35:9 35:20 36:4,18 37:9,23 38:14 39:6,13 40:22 41:11 42:5,22 48:15,22 50:4 50:14 51:16,22 52:8 53:22 54:4,12 55:7 56:2,12,18,19 57:3,17,23 58:8 59:9	60:16 61:5 62:3,14 63:18 64:13,19 65:2 65:14,21 66:3 66:12 67:3 68:9 69:13 73:11,19 74:14 75:1,8,14,21 76:3,10,20 78:7,25 82:15 82:22 84:2 85:25 87:14 88:7 90:18 91:13,21 95:17 99:19 101:9 102:9 103:8 104:8 106:1,17 107:3 108:2,13 110:2 112:6,23 114:10,17,25 115:14 116:9 118:13 121:13 123:6 125:25 126:16 127:11 127:15 130:19 131:5,15 132:24 135:12 143:23 145:10 145:20,24 146:6 151:16 152:10 158:10 160:14,24 162:10,19 163:4 167:10 168:17,21,23
--	---	--	--

170:12 174:24 formal 27:9,17 27:21 formed 38:2 78:24 82:4 144:8,9 forms 36:11 141:3 143:14 formulated 15:9 forth 140:17 201:5 forward 80:22 forwarded 142:25 found 17:15 four 11:21,23 146:16 fourth 136:2,3 fpga 29:20 fpgas 25:7 frame 44:24 front 6:21 7:5 91:16 function 58:22 101:20 further 16:15 62:5 92:9 103:9 118:17 118:21 122:11 146:19,21 170:2,18 171:9 171:12,14,15 171:24 172:3 172:14,16,23	172:24 175:6 187:25 196:21 198:15 201:10 201:14 g g 6:11,11 general 21:20 30:21 35:7 40:16 57:18 81:10 generally 21:24 24:19 30:5 55:10 generate 12:19 112:21 generated 112:18 george 3:13 12:2,5 george.stama... 3:17 getting 32:8 42:16 108:8 give 38:10 72:10 77:19 81:10 85:10 86:4 90:15 115:5 132:4 137:2 162:14 165:9 178:22 given 57:9 125:2 201:9 gives 79:18 giving 61:17 69:8	glitch 20:7 go 11:23 13:25 18:11 20:13 27:13 36:25 37:25 38:3 43:6 46:22 48:1 53:14 55:10 58:5 74:19 80:21 83:3 88:3,4 96:15 99:4 108:14,22 116:16 117:25 119:2 123:25 125:6 128:21 132:5 133:4,19 133:20 136:7 137:6 139:4 143:17 148:10 148:25 154:12 160:25 165:2 174:2 177:24 183:18,25 187:3 198:5 199:6 goal 50:9,10 goals 192:8 goes 97:2 100:2 100:22 115:1 142:19 144:15 going 16:7 17:12 33:9 47:16 68:4 71:6 116:14 119:23 132:8	137:11 138:13 138:14 139:16 149:25 154:10 164:19 182:23 182:24 196:11 196:16 197:7 gomez 1:13 2:14 5:4,6 6:5 6:9,11 43:10 72:23 96:18 123:17 129:1 156:8 184:10 188:4 200:10 202:3 203:3,21 good 6:9 68:22 80:24,25 97:23 154:7,11 greater 68:17 ground 7:10 guess 45:10 151:23 h h 5:1 hand 20:2 handed 34:22 handled 42:7 happened 20:9 happens 101:25 171:5 happy 38:5 102:3 hard 80:17 137:1 hardware 26:17 29:6,15
--	---	---	--

85:21 hate 33:25 head 12:4 18:14 header 17:19 52:6 55:5 64:18,25 65:20 66:2 68:8 69:12,25 73:16 95:10,16 111:14 119:7 119:12,14 158:13 headers 51:11 71:19 78:9,23 heading 21:11 24:1 27:11,19 29:9,16,23 31:7 117:16 heard 28:16 help 132:11 151:23 190:11 helpful 56:15 helps 156:11 hierarchical 62:20 66:11,14 67:1 68:16 69:18 74:9,11 123:21 124:3,8 124:11,15,21 125:1,4,24 126:6,19,25 127:6,14,20,24 128:3,9 156:15 157:7,14 159:4	159:21 162:25 189:16 191:1 191:10,14 194:18,24 195:11,19 196:10 197:20 198:1,12 hierarchy 66:18 67:18 68:17,19,20 69:21 124:4,5 128:11,20 high 30:22 42:12 history 11:4 14:24 hoc 80:18 holds 95:10 156:13 home 8:16,20 40:14 41:24 honestly 159:24 hooked 39:4 hope 152:5 hopefully 74:20 154:9 hour 154:10 hours 11:18,20 11:21,24 13:19 house 8:23,25 huh 130:8 163:14 hypothetical 53:4,8,9 57:25	59:18 61:17 65:4 66:21,21 67:21,24 68:11 69:7 70:6,14 70:19,25 71:9 71:9 73:20 74:5 77:6 80:2 116:24 145:11 145:15 146:5 149:10,13 150:21,23 151:2,15 152:6 162:2,4 194:2 hypotheticals 65:7 i i.e. 92:11 ibm 49:19 idea 136:23 identical 162:8 162:17 identification 10:14 19:20 identified 13:24 88:5 90:17 98:16 113:10 163:19 163:25 164:3 188:5 identifies 92:8 109:23,25 193:9,13,15 identify 17:18 64:25 67:10 71:22 72:1,15	72:19 73:4,6,8 74:23 75:5,19 76:1,7,19 77:1 114:16 identifying 18:17 75:18,25 124:5 191:11 identity 122:16 122:17,17,20 122:21 123:10 123:11,12 ieee 28:13,20 196:23 illustration 153:6 immediate 92:12 107:20 136:4 impact 188:8 189:4 193:7 implement 35:15 51:14,21 53:11 62:6 63:10 83:6 94:19 95:20 implementati... 41:17,21 42:10 57:10 59:6 61:7,20,24 66:22 79:9,10 79:16,21,24,25 80:5,6,18,19 108:10 138:19 160:11
---	--	---	---

implementati... 46:5 50:23 82:25 implemented 34:17 52:25 56:18 57:3 59:14 77:11,20 78:5 99:12 140:19 implementing 60:3,4 implements 51:3 53:6 56:8 59:19,21 60:25 62:11,13 65:11 124:21 implies 132:25 important 15:21 18:24 19:3 41:21 42:12 67:18 191:5,9,22 impose 147:25 imposed 173:10 inaccessible 183:3,7 include 15:22 18:25 25:13 52:22 64:24 119:8,13 174:5 included 19:14 36:17,21 55:4 71:18 99:6	includes 73:16 85:15 110:20 111:14 122:5 129:22 147:2 147:10 162:20 167:23 including 14:17 26:16 incoming 165:20 incompatible 191:13 inconsistencies 184:3,7 inconsistent 185:19 198:20 incorporate 177:25 178:1 182:2 incorporates 172:10 176:20 177:8,18 178:3 178:4,17 179:2 incorrectly 83:5 independent 31:12 50:2,12 172:10 177:23 189:11 independently 79:3 indirectly 142:21 178:17 individually 106:8	individuals 42:9 industrial 157:10 158:23 192:5,13 industry 22:5 27:4,16 28:2 28:12 inform 131:25 information 51:25 52:1 109:25 111:7 112:2 122:19 123:13 137:2 inherent 94:15 191:9 initial 110:19 122:4 169:16 169:19 170:14 170:14 171:1 171:18,23 172:1,13,16,19 173:1,5,6,11,15 173:15,16,22 174:4,17,21 initially 152:25 initials 174:13 input 113:13 120:2,12 121:2 121:17 insert 65:19 66:1 inserted 35:22 36:5 38:12,15 39:21 40:2	installing 25:15 instance 58:24 63:17 66:24 118:5 119:7 161:9 instances 175:2 instructed 8:13 intend 15:23 16:1,11,19,25 17:6 intended 55:16 55:21 56:1 67:8 134:18 150:20 182:25 183:13 inter 193:3 interconnect 67:5 interested 26:13,14 102:17,18 103:20 201:15 interface 17:21 47:3,5,6,7,9,12 48:7 52:24 55:9 58:15 59:3 85:12,16 85:17,23 86:6 86:18,20,21,22 89:15,18,20,25 90:8 109:12,15 113:3 117:12 124:12,25 164:7,12,16,20 164:22 165:11
---	---	---	---

165:21,21 166:7,10,11,14 166:15 167:3,4 167:5,7,13,24 168:2 interfaces 26:16 45:2 60:9 85:18,19 86:2,13 89:18 164:23 165:3,7 166:8,13 intermediate 144:11,13,15 internet 43:24 44:3,10,11 45:14,15,16,19 45:22,24 46:3 46:14 47:20 54:20 66:23 70:9 84:11 86:8 127:5 internetwork 62:19 141:13 142:21 144:6 internetworki... 70:7,10 141:10 142:1,17 169:2 interoperable 78:1 interoperate 50:22 interpret 78:9 106:7 150:19 161:21	interpretation 107:10 121:14 interprets 107:4 introduced 20:6 151:24 introduction 160:6 invention 89:14 90:9,10 91:10 97:3,5,10 125:1 126:2 144:2 157:11 165:16 168:10 190:5 191:4,9 192:23 193:11 193:12 194:23 195:23 196:1,7 196:8 inventor 174:16 investigation 15:8 involved 23:2,8 29:4 88:22 112:13 involves 98:22 ip 1:7 2:7 31:10 31:12,16,17,23 32:14,18,19 43:20 44:5,9 44:14,17,21 45:5,10,12,14 45:22 47:9,12 47:17 48:3,5	50:1,8,11 54:16 66:15 77:10,16 78:1 78:3,4,5,8,21 78:23 79:6 80:11,12,14,15 81:6,12,14 82:10,14,17 84:11 141:10 142:1,17 196:2 202:1 203:2 ipr 8:2 10:2 ipr2023-00714 1:10 2:10 irrelevant 186:25 isolated 67:24 68:5 69:9,22 isolation 67:15 68:12 issue 14:16 196:22 issues 15:19 118:8 157:4 159:3,20 191:18 192:10 193:13 196:4 item 126:20 163:18	k key 94:7 95:21 kim 3:12 kind 21:22 23:7 37:1 38:25 39:11 41:10 53:14 59:4 62:22 64:1,21 74:5 100:23 126:24 kinds 23:6,14 25:7 39:8 100:23 130:24 know 7:22 8:9 14:14 18:22 20:9,11 22:8 23:7 34:24 38:2 44:23 45:1,16 54:3,5 54:14,15 58:13 59:10 61:7,10 61:18 64:2 65:3,4 68:15 81:25 82:4 91:15,18 93:5 108:8 109:5 112:18 122:1 134:16 136:19 159:24 197:13 knowledge 61:23 94:15 known 78:10 198:12 knows 94:11 110:16 121:9
		j	
		jack 38:23 job 23:8 jump 178:21	

136:1 kobre 3:12 kobrekim.com 3:17 konstantakop... 3:5 4:4 6:8 10:17 14:21 15:15 19:24 20:5 22:19 23:18 24:16 25:10 26:4,23 27:8 28:4 29:14,21 30:11 30:18 31:22 32:7,22 33:15 33:19 34:3 35:14,23 36:7 36:24 37:15 38:9,17 39:10 39:16 41:4,23 42:15 43:2,6,9 48:19 49:5,20 49:24 50:7,17 51:1,12,19 52:4,15 54:1,7 54:18 55:14 56:6,16 57:1 57:14,20 58:1 58:18 59:17 60:21 61:21 62:9,23 63:21 64:17,23 65:9 65:17,24 66:6 66:19 67:19 69:1,19 70:11	71:7 72:9,22 73:14,23 74:7 74:17 75:4,11 75:17,24 76:6 76:13,24 77:9 78:2,15 79:8 80:4,21 81:1 82:19 83:7,12 84:5 86:3 87:18 88:21 91:1,17 92:6 96:2,14,17 100:9 101:21 102:16 103:18 104:18 105:1 106:9,24 107:8 108:7,19 110:6 112:12 113:17 114:13,21 115:3,18 116:13 119:1 121:19 123:14 125:5 126:8 127:3,12 128:1 128:25 129:7 130:22 131:10 131:17 133:12 133:24 135:16 144:20 145:14 145:21,23 146:1,10 147:15 151:1 151:22 152:13 152:19 153:5 155:16 159:5	159:23 160:17 161:6 163:1,8 167:15 169:7 169:15 170:24 175:4,24 178:8 180:11 183:12 184:8 187:22 187:25 198:17 199:1,6 l l 6:11 labeled 164:6 lan 65:18,25 66:22 192:4 language 18:2 18:2,4 101:2 118:14 120:20 149:24 150:15 151:17,19 153:7,21 158:12 178:12 185:20 188:14 188:18 lans 197:24 198:12 laptop 9:7,22 laptops 36:17 large 11:6 14:2 44:23 196:18 197:11 larger 32:13 law 3:6,14 lawyer 19:2 layer 44:4,14 44:14,15,16	45:8,25 46:13 46:15,19,23,24 47:2,5,7,7,9,12 47:22,23,23,24 47:24,24,25 48:5,6,6,7,8 50:2,6,12,21,24 52:21 54:25 55:2 61:11,11 61:12,15,24 66:8 73:7,9,13 74:24 75:6,10 75:12,16,18 76:5,8,12,15 77:7,14,14,17 77:18 78:4,8 78:21,23,24 79:3 80:12,15 80:15,15,16 113:3 143:19 165:20 167:2,6 layers 32:20 43:25 47:2,14 48:3,5 50:6 61:9,13 77:13 78:12 79:6 80:12,13 layout 190:1 led 192:21 ledanois 1:24 2:17 201:1,24 left 131:22 135:6 149:18 149:19
--	--	---	--

legal 12:10,12 16:5 37:18 level 26:15 30:22 41:19 62:5,13 68:21 69:4 74:12,15 78:20,23 124:4 126:12 128:11 128:12,19 levels 68:17,19 111:13 124:4,9 126:10 light 152:22 194:16 liked 15:2,9 limit 95:4,4 147:13,24 188:20 limitation 71:1 116:25 147:25 169:11,22 170:1 171:7 173:9,14 177:6 limitations 172:10 176:21 177:9,19 188:12 189:8 limited 68:11 102:23 limiting 40:9 line 35:6,13 42:1 84:12 87:25 92:15,16 93:11,24 96:25 97:2,18 103:1	108:25 109:7 109:15 110:18 113:2 114:4 117:4,7,11 118:1 119:2,12 119:23 120:24 120:24 122:12 130:2 134:25 135:11 140:2,3 141:4 147:19 148:11,20 153:24 154:1 154:23,23 155:17 156:12 157:24,24 160:3 164:19 169:12,23 176:3 184:13 190:10 202:7,9 202:11,13,15 202:17,19 203:5 lines 89:15,18 89:20,25 90:5 109:13 112:24 117:12 122:3 129:16,16,23 130:1,3,13 134:11 139:14 139:23 145:16 146:13,14,16 154:25 158:15 158:17 159:12 165:5 167:24 192:25 196:16	196:17 197:2,9 link 47:24 49:4 89:15 117:12 122:18 123:12 137:6 138:10 links 133:11,16 193:2 list 21:11,14,18 22:10 23:10 24:3,6,20 25:14 26:5,8,9 26:12,18,25 27:3 28:8,11 28:22 30:6,9 39:12,14,17,25 40:16 41:10 43:20,22 listed 14:9 23:6 24:1 25:18,22 26:25 27:1,11 27:19 28:3,5 29:9,16,23 39:15 40:1 149:2 listing 14:7 41:12 lists 34:5 114:20 115:16 little 42:25 53:15 56:14 58:11 63:25 71:5 122:10 132:8 136:8 197:4	live 6:12 livermore 2:15 6:13 llc 1:7 2:7 203:1,2 llp 3:4,12 local 45:18 46:1 48:13,17 48:21 49:8,13 51:2,13,20 52:16 53:5,10 54:19 56:8,18 57:3,5,7,12,16 57:19 58:10 59:19,20 60:2 60:10,12,13,14 60:22,23,24 61:2,3,4 62:10 62:12 64:5 65:1,10 67:5,8 67:9,11,13,14 67:16,16,22,24 68:5,6,11 69:9 69:10,22,24 70:9 71:13 73:4 74:4,6 154:16 155:18 157:13,21 190:14 192:16 192:18 196:22 198:8 locate 70:5,13 70:15 71:13,21 72:13 137:3
--	---	---	--

located 6:14 8:19	111:18 152:24 153:21	48:6 54:16 55:2,4,24,24	198:18,18,21 200:7 201:6
locating 70:17 71:15	looking 23:8,16 26:21 52:14	56:4 65:12,19 66:1,10,24	magazine 196:23
location 40:24 42:2 105:11 178:15 180:4 180:18 181:11 182:8 184:21	92:22 134:22 135:4 136:25 137:10,13 142:25 143:9 175:1 181:20 184:12	67:4,10 68:2,7 69:11,25 70:4 70:12,21 71:12 71:16,18,25 72:6,18 73:3,6 73:6,8,8,9,12 73:13,15,16,18 73:21 74:1,9 74:12,23,23,24 75:5,6,6,9,10 75:10,12,13,15 75:16,18,19,23 75:25 76:4,5,8 76:8,11,12,12 76:14,15,15,18 80:15 81:25 82:2,11,14,16 82:20,21 141:8 141:18,20,22 141:25 142:7 142:11,14 143:10,15,19 143:20 144:7 144:10,17 145:18 146:3 195:5,13	main 165:17,19 make 16:1,11 16:19,21,24,25 17:3,5,6 31:18 31:24 32:23 33:11,12,25 34:19 68:25 123:20 143:17 149:10 151:18 156:14 158:2
lodge 33:9	looks 10:15 20:18		makes 100:25 107:10 121:16 191:3
logical 86:9,16 166:13,19,22	lookups 191:16		making 90:21 191:12
long 22:20 163:3 192:15 193:1,8,9	lost 100:18 135:1		manage 47:6
longer 36:21 132:9 154:7 192:17	lots 63:9 96:12 99:10,11 105:16 170:21		manufacturing 34:23
look 22:16 37:19,22,25 38:3 46:22 48:1 52:2,18 52:20 54:11 86:23 108:5,14 114:4 122:10 132:5 133:19 133:21 135:3 136:11 137:7 141:3 156:1 157:9 159:6 160:3 165:9 184:10 187:3 190:22	low 62:5,13 lower 20:2 26:15 32:20 62:13 78:11,20 78:21 79:5 80:13 lowest 47:2 54:25 55:2 77:7 lunch 80:22 lynne 1:24 2:16 201:1,24		mapping 125:22 marie 201:24 marked 10:13 19:19 master 17:20 85:15 88:9,12 89:2,21,25 90:7 109:11 113:2 117:20 124:20 125:14 125:15,22,23 126:13 127:7,7
looked 84:18 84:19,21	m m 1:24 4:1 6:11 6:11 201:1 mac 44:15 46:5 46:23 47:7	machine 201:7 made 15:17 110:15 111:22 158:20,25 189:1 196:21	

129:12 132:17 132:21 134:5 134:23 135:5 135:13 136:12 136:15 137:15 137:16,25 138:6,25 139:12,13 163:16,18,19 163:24 164:2 164:13,14,16 164:19 165:14 165:16 167:1 167:25 168:11 168:14 169:20 170:7,19 172:15,18,25 172:25 173:24 174:9 175:12 175:14,16 176:6,10,14,17 177:1,3,4,13,20 178:5,10,15,16 178:19,25,25 179:6,9,13,14 179:17,18,24 180:5,6,6,8,10 180:14,15,18 180:20,21,23 180:24 181:1,4 181:5,7,9,12,12 181:13,22,25 182:4,9,9,10,13 182:13,23 183:9,15,18,19	183:21,23,24 184:15,22,23 184:23 185:2,7 185:8,10,11,14 185:18 186:3,4 186:9,9,12,15 186:23,23 187:15 188:19 masters 88:9 88:15 89:23 92:1 93:25 98:2 100:4 101:12 102:12 104:13 123:8 149:22 167:19 168:6,13,16,20 186:11 188:21 match 99:13 matches 99:7 99:10 matching 95:8 95:15 98:22 99:10,11 materially 188:23 materials 15:1 mean 12:25,25 23:10 24:7,14 38:16 57:12 62:24 64:11,14 70:15,20 74:18 81:19 85:20 94:22,24 105:12 113:20 132:4 136:1	137:17 140:9 143:13 meaning 162:8 162:17 168:25 means 8:3 31:3 50:18 57:6 70:5,13 91:8 100:17 133:10 142:24 173:21 meant 174:3 measurement 159:16,18 192:11 measurements 158:24 mechanism 46:24 54:14,23 57:10 62:22,24 64:15,22,24 65:12 68:16 69:17,18 70:18 70:20,21 76:23 76:25 79:7,22 94:25 95:7,13 96:5,6 100:25 101:4 106:12 107:6 112:18 112:20 126:7 126:18,25 127:1 141:9 142:15 146:3 155:11 157:6 191:3,11,14 192:7 195:12 196:1,5	mechanisms 41:2 64:7 78:19 82:18 95:3 105:17 118:8 127:23 141:8 142:13 145:18 media 139:20 139:24 140:5 meet 11:12,19 12:1 member 28:14 28:17,19 memorized 133:20 136:6 memory 84:6 mention 81:4 mentioned 14:24 25:16 44:5 48:11 52:5 55:24 63:12 65:10 74:11 81:2,25 127:5 192:12 193:16 merely 102:10 message 89:1 met 11:11 12:2 12:17 method 35:11 35:16 50:21 90:13 144:2 146:8 methodologies 159:21
---	--	---	---

miguel 1:13 2:14 5:3,5 6:5 6:11 33:9 80:23 200:10 202:3 203:3,21 mind 32:24 33:5 38:19 44:25 51:4 53:12 54:21 56:11 57:16,22 59:23 60:6 62:2 93:17,18 98:11 115:9 116:22 117:21 121:21 125:20 127:9 135:8 136:14 138:22 144:25 145:9 148:16 150:8 151:5 171:6 174:6 minute 132:5 minutes 80:22 137:2 154:9 misheard 30:4 misinterpreted 184:2 missed 59:24 89:6 95:11 119:10 181:3 missing 111:11 mitch 12:3,5 mitigate 159:2 192:9 193:13 196:3	mode 174:17 model 44:1,1,2 44:4 47:15,18 47:21 48:2,2 modem 34:15 35:3,10,17,24 36:2,13,20,25 37:1,2,3,4,7,9 38:13 40:2,4,6 41:14,25 42:1 42:17,23,24,25 modems 34:6,8 34:12,13 35:8 36:11,16,20,22 37:10,10,14,16 37:18,19,22,22 37:25 38:12,20 38:25 39:1,3,8 39:9,11,20,23 40:8,15,17,20 41:3 module 134:24 135:7 136:2,3 136:4,13,17,22 138:6,25 modules 134:20 135:15 135:18,22,23 155:5,14 158:19 moment 148:17 165:9 190:22 monday 11:16 morning 6:9	move 7:19 34:4 39:18 43:3 74:20 83:7 105:3,4 107:12 120:23 123:16 136:10 146:11 154:2,4 163:9 multi 114:6 115:2 116:12 116:18 161:5 161:13,17,25 168:10 194:13 multicast 92:23 93:18 100:24 103:15,17 105:6,8,16,21 106:2,10,14,19 107:6,21,22,24 108:9 147:2,4 147:6,11,16,20 148:5,12,14,21 149:4,8,9,11,15 149:21 150:1,7 150:12,16,19 150:22 151:3 151:13 152:6,9 153:9,11,17,23 multiple 67:5 68:17,18 112:19 124:4 124:13 126:10 146:24 multiplexer 84:12	mutually 89:17 129:13 n n 3:1 4:1,1,1 5:1 111:8 name 6:10 12:3 201:18 202:1,3 203:2,3 nearest 108:3 108:17 necessarily 24:14 59:3,8 77:24 78:12 120:20 133:23 167:4 169:2 necessary 16:8 59:15 95:19 96:3 need 47:5 53:19 71:23 72:2,15 72:19 80:13 84:16 91:15 108:14 114:5 114:23 115:13 116:11,17 118:6,11 119:17 133:4 136:7 154:2,6 161:4,13 165:8 183:14 185:22 needed 140:25 needs 46:23 106:6 111:7 112:4 116:3 137:25
--	---	---	--

neighbor 59:12 59:16 62:16 63:1,3 91:20 92:12 107:20 108:4,11,18,18 120:25 121:10 121:15 122:13 122:18,21,21 123:12 136:4	68:5,7,12 69:9 69:11,23,24 70:6,8,10 71:13 73:4 74:4,6 77:12 77:21 78:6,13 78:14,16,17,22 80:8,9,10 81:18 84:11 85:12,14,16,24 86:7,19 88:11 88:12 89:1,3 90:8 124:16 126:4,6,20,21 126:22 127:2,4 127:17,17,20 141:12,13 142:20,21 143:15 144:7 144:11,12,13 144:16,17,23 145:7 149:11 149:22 154:16 155:18 157:12 157:13,21 162:22 164:21 164:22 165:20 165:21 166:5 168:15,18,22 168:25 169:5 169:20 170:7 170:18 171:3 172:17 173:24 176:5,10,13,18 176:19,25	178:19 179:4,5 179:10,13,18 179:24 180:9 180:14 181:2,8 181:22 182:3 190:14 192:6 192:16,19,22 194:23 networking 43:19 193:14 networks 46:2 46:2 58:11 60:3,14 61:2 67:6,11,13,16 67:17 124:25 125:3 127:18 169:2,3 193:2 196:23 198:8 new 3:8,8,16,16 151:24 152:14 178:22 203:1 ninety 163:22 163:23 node 52:16,17 52:22 53:21,21 53:23,24 54:2 54:3,6,10 55:5 55:6 59:6,7 60:10,12,22,24 61:3,4 62:7,10 62:12 63:6 64:25 67:25 68:1,1,2,6,6,8 69:10,10,12,22 69:23,24,25	70:13,19 71:13 71:21,24 72:2 72:14,16,20 73:4,7,9,17,25 74:24 75:6,12 75:16,18,19,22 76:1,2,5,7,8,16 76:17,19,22 77:1 79:18,18 79:23,23 80:1 80:1 105:11,12 144:13,16 node's 73:13 nodes 32:23 33:1,3,20 48:12,21 49:8 49:13 51:13,20 51:24 52:10,10 52:11 53:10,16 53:19 57:22 58:7,25 61:16 62:1 65:18,25 66:24,25 171:16 non 137:12 nonhierarchi... 123:21 189:16 190:2,7,19 191:1,24 195:16 196:6 197:21 198:9 normal 165:15 176:4 179:11 179:23
--	---	--	--

normally 88:10 168:14 notary 200:17 203:25 noted 200:5 notes 9:19 nowadays 36:16 number 10:3 11:6 13:18 14:2,5 27:5 33:16 38:7 39:15 44:23 45:2 84:9 87:4 87:7 94:13,18 111:8 113:9 119:4,8,13,20 120:2,7,12,16 120:21 136:13 136:17 139:1 153:15 163:20 163:25 165:23 196:24 numbers 114:11 164:3 165:24	oath 6:17,19 43:11 96:19 object 8:12 30:8 32:17 33:13 35:20 36:4,18 37:23 39:6 40:22 41:11 50:4,14 53:22 54:4,12 55:7 56:2,12 56:19 58:8 60:16 61:5 62:3,14 63:18 64:13,19 65:2 65:14,21 66:3 66:12 67:3 68:9 69:13 74:14 75:1,8 75:14,21 76:3 76:10,20 78:7 78:25 82:15,22 84:2 87:14 88:7 90:18 91:13,21 95:17 99:19 101:9 102:9 103:8 104:8 106:1,17 107:3 108:13 110:2 112:6,23 114:10,17,25 115:14 116:9 118:13 121:13 123:6 125:25 126:16 127:11 127:15 130:19	131:5,15 132:24 135:12 143:23 145:10 145:24 146:6 151:16 152:10 158:10 160:14 162:19 163:4 167:10 168:23 170:12 174:24 objection 14:12 15:11 22:13,24 24:2,23 25:20 26:19 27:2 28:1 29:11,18 30:13 31:19 32:1 33:8,9,11 33:23 35:9 38:14 39:13 42:5,22 48:15 48:22 49:17 50:19 51:8,16 51:23 52:8 57:4,17,23 59:9 70:2 72:3 73:11,19 77:2 77:22 85:25 104:24 108:2 124:23 133:17 145:20 160:24 184:5 objections 33:12 70:3,23 72:4,21 74:2 objective 126:3	obtained 110:5 occur 93:4 occurs 71:15 offer 18:25 21:15,19 22:2 22:6,11,22 23:20,25 24:22 25:19 158:8 offered 80:2 offers 102:4,7 office 1:1 2:1 6:21 40:13 41:1,16,19 42:14 offices 40:19,21 official 80:5 oh 11:10 26:9 117:9 130:24 141:24 okay 7:16,17 7:25 8:14 10:6 16:17 17:11 18:23 19:17 20:14,16 21:9 26:5 31:6 32:8 34:13 36:8 39:1 48:10 51:5 53:7 56:7 57:18,24 62:4 63:15 80:21 83:7,14 87:2 93:18,19 96:7 96:14 97:8,18 98:20 104:19 105:2,8,14
o			
o 4:1,1 5:1 6:11 134:20,24 135:7,15,18,21 135:23 136:2,3 136:4,13,17,22 137:15,25 138:6,25 155:5 155:13 158:18			

107:9 113:23 114:1 117:1,9 117:16,24 119:2,22 120:23 123:15 123:19 124:1 127:4 128:11 128:23 129:4 130:13,14 132:7,8 134:10 134:17 135:9 136:10,18 138:23 140:4 146:17 147:5 149:20 150:9 152:4 154:2,12 155:25 160:2 167:6,16,18 169:8,10 172:6 172:12 174:20 175:17,20 177:8 179:16 179:22 182:15 182:19 184:9 older 198:4 omission 34:11 omitted 17:24 24:13 188:13 once 156:12 173:13,18,21 174:3,9,15,23 175:3,8,15 181:16 186:8 ones 109:12 193:14	open 9:22 10:9 10:10 125:8 151:25 opened 19:21 operate 40:18 47:4 50:22 79:3 159:15 191:4 operates 41:22 operation 165:15 176:4 179:12,23 opine 16:15 23:11 opined 37:18 71:2 86:21 87:22 90:20,23 119:16 136:5 139:2 140:18 opinion 18:19 19:7,9,10,12 21:15,19 22:2 22:7,12,22 23:20,25 24:22 25:19 34:1 38:2 65:6 80:3 81:16 82:5 131:25 147:16 148:3,4 190:6 190:13 197:19 opinions 15:10 15:14,23,24 16:2,12,20 17:1,7 18:25 19:3,5 90:21	188:15 190:18 191:23 193:7 195:21 opportunity 139:4 opposed 45:16 191:21 opposing 11:5 14:18 15:6,19 opposite 89:2 138:17 139:8 139:11 170:4,8 optic 139:25 140:6 optical 129:17 130:4,10,11,13 131:3 option 179:19 180:7 optionally 122:18 123:13 options 179:16 orckit 1:7 2:7 202:1 203:2 orckit's 10:2 order 47:4 50:22 67:7 127:1 156:2 191:3 194:24 ordinary 195:9 195:21 organizations 28:20 organized 55:9	origin 181:21 original 201:11 originating 88:23 os 163:6 osi 44:1,4,8 47:1,14,18,21 48:1 outside 9:6 25:22 26:1 40:16 64:8 67:21 70:25 124:25 157:13 192:18,22 outstanding 72:23 overhead 159:4 191:11 own 15:4 32:5 32:21 118:15 owner 1:8 2:8 3:11
p			
p 3:1,1 p.m. 199:8 packaged 40:25 packages 40:25 41:8,10 42:11 packaging 41:2 packet 17:22 51:6,11 52:7 52:17 65:20 66:2 69:12 70:1 71:19			

73:15 77:12,21	110:10,11,15	77:24 78:4,10	176:5,9,13,25
78:3,6,13 79:6	111:9,14,23,25	78:19 80:10,12	177:12,20
80:8,9 85:12	112:4 113:9,12	80:13,16 82:8	178:9,13,18,24
85:16,24 86:7	113:14 119:4,7	88:10,11,17	179:3,4,10,12
86:19 87:11	119:9,12,14,21	92:10,11	179:17,23
89:2 90:8	119:24,24	100:23,23,24	180:3,13,24
91:25 92:2,3,5	120:1,3,8,10,11	103:11,16	181:1,5,8,10,16
92:17,19,23,23	120:13,16,22	107:19 109:10	181:21,23,25
92:25 93:1,12	120:25 121:1,9	109:14 110:19	182:3,7 183:1
93:14,15,18,20	121:17,25	110:20,21,23	184:15,20
93:25 94:3,8	122:1 123:3	111:1,5 112:8	185:2,6,13,18
94:11,20 95:1	138:24 143:15	112:10,15	186:14,20,25
95:8,10,14,16	143:15 144:4,7	113:1,5 120:17	page 4:3 5:2
95:22,24 96:9	144:8,10,11,12	122:4,5,6,15	10:18,19 13:4
96:10 97:12,13	144:16,17	123:10 132:22	20:1,8 21:9,10
98:1,5,6,8,10	147:3,5,6,6,7	133:25 134:5	26:6,25 27:1
98:23,25 99:2	147:11,17,17	144:3 146:25	28:22 31:5
99:5,7,8,14,16	147:18,20,20	147:1,10	34:5,9 43:16
99:22,23 100:3	147:22,23	165:20 166:1,3	85:9 124:2
100:13,14,18	148:5,5,6,12,12	166:25 167:20	130:2 134:11
100:20,21	148:14,20,21	168:7,15,24	154:23,23
101:7,12,13,15	149:1,2,4,5,6,9	169:4,17,19	156:12 157:24
101:16,23	149:11,15,21	170:2,10,14,15	160:3 182:15
102:7,11,20	150:1,1,3,4,7	170:18,21,23	182:17,18,21
103:2,5,21	150:11,12,16	171:1,10,12,12	184:11 192:24
104:1,3,7,10,12	150:20,23	171:14,15,15	196:15 197:1,2
104:14,16,22	151:3,6,11,11	171:18,19,24	197:9,15,16,16
105:6,6,8,10,21	151:13,20	171:24 172:1,2	202:7,9,11,13
106:2,3,4,7,10	152:7,9 153:9	172:4,4,14,17	202:15,17,19
106:11,14,19	153:11,17,23	172:19,23,24	203:5
106:21,22	154:1 168:18	173:2,6,12,17	pages 17:16
107:5,14,17,24	168:22,25	173:23,23	137:11 157:24
107:25 108:9	169:5 170:6	174:1,4,5,8,11	pair 40:12
108:11,23	packets 47:20	174:17,22,25	41:15 42:1
109:1,2,6,24	51:15,22 52:22	175:2,6,9	139:25

paragraph 97:1,4,8,25 102:25 103:10 108:21,24 118:18,23 123:25 124:2 129:8 146:18 146:20,24 154:5,12,19 155:2,17,23 156:4 157:19 158:3,7 161:16 175:21 184:11 185:23 187:12 190:13,21,22	73:16,18,25 74:1 76:15,19 77:1,17 81:17 92:2,8,18 93:13,21 94:5 94:21,23 95:8 95:14 96:1 98:7,15 100:13 100:15 101:14 101:24 102:8 102:21 103:2,5 103:6,12,22 104:1,3,7,14,22 106:7,15 107:1 107:17 108:10 108:24 109:23 110:8,10,16 111:9,16,23 112:4 118:12 121:6,8 123:5 126:15 133:7 133:22 135:20 139:3,4 156:24 165:23 174:11 186:18 192:20	passage 196:17 197:19 passed 49:2 61:15 79:18,23 91:25 93:25 97:12 98:1 99:1,22 100:3 101:12 102:11 104:10,12 110:22,25 111:4 112:10 113:3 122:7 152:21 154:1 176:5,14 177:4 177:13,20 178:10,19 179:5,13,14,24 182:4 186:14 187:14 passes 79:25 93:1 106:4,22 107:7,19,22,25 109:13 113:12 120:1,11 121:1 147:23 150:4 151:11,20 153:14 passing 49:19 49:21 50:13 56:10,17 57:2 57:10 58:6,15 58:24 59:5,10 59:22 60:5,7 60:18,25 61:7 61:24 62:13	79:9,15,17 153:24 196:19 197:10 passive 117:20 139:12 past 61:25 patent 1:1,2,8 1:10 2:1,2,8,10 3:11 6:21 10:2 10:5,6 11:2,3 83:8,15,17,18 83:20,23 84:1 84:4,7,20,23,25 85:2,3,5,9 86:24 87:9,21 87:23 91:3 96:25 98:13,22 101:23 102:1,4 102:6,19 104:2 104:6 107:16 114:15 115:11 117:6,18 124:18,21,24 125:7 126:21 136:6,7 137:10 137:11,23 139:5 143:25 145:13 146:12 146:14 153:17 153:20 158:17 159:19 160:22 161:2,8,10 162:5 167:17 169:9 174:16 176:1 192:2
paragraphs 148:1 parallel 131:1,4 parentheses 17:22,25 18:9 park 3:7 parse 75:3 part 30:10 31:14 42:12 47:17,19 51:11 52:7 66:13 76:22,25 91:9 94:7 95:11,21 118:19 120:16 120:22,22 141:10 142:10 142:17 161:16 191:5,9 194:18 particular 44:4 58:24 65:18,25	particularly 157:4 188:13 196:4 party 201:16 pass 108:11 121:9,16 150:12 151:13 153:10 187:22 188:1 198:16		

193:16,17,24 194:8,9,10,18 194:22 patented 42:4 patents 14:16 71:4 path 136:19,21 136:21,23 137:14,20 138:5,15,24 139:7,10 152:9 paths 134:3,5 137:17 patrick 17:20 139:17,18,23 140:1,18,20,22 140:24 141:6 141:17,20,24 142:2,9,9 143:10,25 144:22 145:16 145:17 146:2,9 158:13 195:2,6 195:9,11,15,18 195:22,23 196:1,8 pending 7:24 people 8:25 9:9 46:8 83:1 perceive 29:2 perform 58:22 101:20 performed 28:6 peripheral 35:18 39:4,22	40:5,20 peripherals 158:19 permission 49:3 79:18 person 195:9 195:21 personal 42:7 pertain 77:24 122:9 pertains 187:11 201:10 petitioner 1:5 2:5 3:3 pharmaceutic... 24:25 26:2 pharmacy 25:2 philips 34:14 34:15 35:1 phone 9:6 physical 17:21 26:15 41:17,20 42:10 44:16 45:2,8 46:23 47:3,4,6,25 48:7,8 52:24 55:9 58:15 59:3 60:9 79:21,24 80:5 80:6,16 85:11 85:16,17,18,19 85:22,23 86:2 86:6,9,13,16,18 86:18,20,21,22 89:15,18,20,25	90:7 109:12,15 113:3 117:12 164:23 165:3,6 165:7,8,11,20 166:7,8,10,11 166:15,16,17 166:20 167:2,4 167:5,6,13,24 168:1 picture 56:14 piece 111:11 137:24 place 18:17 55:13 155:5 201:5 places 25:23 planning 9:16 please 6:9 7:14 7:22 10:9 19:6 31:5,21 43:16 51:18 69:6 129:8 139:18 146:12,19 148:17 150:25 175:20,25 184:10 185:5 185:23 186:7 plurality 89:15 90:3 117:10,12 168:12 plus 14:17,17 14:19 19:16 point 7:21 9:15 16:9 17:10 18:13 19:9	21:1,8 25:23 33:25 36:16 68:20 90:19,23 102:2,17 108:15,21 117:3 128:15 131:18 137:9 154:22,25 156:14 157:23 158:20 159:19 174:20 184:3,7 186:7 pointed 135:20 148:10 188:11 pointing 30:3 111:17 123:23 148:19 152:15 152:20,21 153:2,4,14 155:2 163:17 points 159:10 por 10:2 port 64:4 85:23 86:6,11,17,18 86:22 87:10,12 88:6 89:9,11 92:5,21 93:16 95:24 96:11 98:10 100:21 101:7,17 102:15,18 109:3,6,25 110:17 111:3 111:25 112:13 112:14,16,17
---	--	---	---

112:21 113:9,9 113:10,15 119:4,4,8,13,14 119:20,20 120:2,4,7,8,10 120:12,14,16 120:18,21 122:2 128:7,13 149:3 164:10 164:10,11,12 164:14,15,15 164:20 165:10 165:22,24 166:6,17,20,21 166:22 167:8 portion 140:13 178:14 180:4 180:17 181:10 182:7 184:21 186:24 ports 86:1,9,9 86:12,16,16 90:4 94:16 97:13 99:3,15 99:17,24 109:16 110:4 110:22,24 111:1,5,8 112:3,9,11 122:7 147:12 158:15 164:2,6 164:7,23,25 165:3,6,6 166:3,9,12,13 166:18 167:3	174:1 posa 162:24 position 26:22 122:24 123:2 124:19 positioning 26:10 positions 12:16 possesses 62:7 possible 7:14 80:3 92:15 93:6 94:14 121:12 128:14 138:5,12 159:16 168:1 190:4 possibly 127:19 power 154:5 pre 92:1,3,7,9 92:18,24,24 93:13,22 94:1 94:2,7,10,25 95:9,15,22 96:8 97:11,20 97:22,24 98:2 98:5,7,15,23,24 99:6,7,8,18,21 100:4,10,14,19 101:13,14,19 102:12 103:10 103:16 104:13 104:15,21 105:7,22,23 106:3,20,20,25 107:13,18	108:25 109:13 109:23 110:7 110:11,20 111:15,22 113:4 114:1,15 114:23 115:12 122:5 126:14 128:2,3,7,12,17 147:2,10,14,21 147:21 148:13 148:14,21 149:5,6,15 150:2,2,6,22 151:2,7,10,19 152:7 153:12 160:21 163:24 165:11,17 167:7 precise 30:15 33:18 101:10 precisely 11:20 preferable 104:12 preferably 91:24 93:24 98:1 100:3,7 101:11 102:11 104:10 109:9 110:18 122:3 146:19,21 165:25 preferred 106:18 108:22 128:5 165:15 168:9,17,21	premarked 151:25 preparation 11:6,7,8,13 14:3 prepare 10:25 prepared 82:5 preparing 14:19 present 97:3 144:2 165:16 168:10 presentation 47:23 presented 15:6 15:14,19 97:7 pretty 32:20 101:2 112:8 159:13 prevent 131:8 prevents 127:22 previous 80:7 115:20 116:10 128:4 167:21 167:22 previously 144:18 primarily 195:18 primary 42:12 140:13 144:21 145:5 158:20 printed 9:11,13
--	---	--	---

prior 14:17 191:25 probably 42:7 problem 33:15 60:1 86:5 156:24 185:4 199:5 procedures 122:14 proceeding 8:3 16:8 20:19 22:7 23:21 proceedings 13:21 16:5 199:8 201:4,6 201:12 process 26:21 27:9,18,21 33:10 63:20,22 71:22,25 72:14 72:18 81:22 82:2,7 142:10 151:12 153:9 proclaim 27:10 27:18 product 34:20 34:21 productized 34:23 professional 28:19 program 9:22 programming 25:6,6	projects 27:14 proper 88:6 properly 75:3 119:18 protocol 30:2 30:15 31:2,3 31:16,17,23 32:2,3,5,10,12 32:14,18,20 33:22 44:1,1,5 44:7,9,10,17,18 44:19,22 45:7 45:9,11,13,14 45:21,22,24,25 46:1,12,13,14 46:15,18,19,20 47:2,9,13,17,19 48:2,8,11,12,20 48:25 49:6,7 49:11,12 50:1 50:8,11 51:3,6 51:7,9,14,21 52:2,6,14,20,21 53:1,3,6,11,24 54:15 56:9,10 56:17 57:2 58:6,25 59:1,5 59:20,22 60:4 60:5,11 62:11 62:19 65:11 68:13 70:16 74:16 77:11,20 78:5,21 79:10 79:15 80:11,12 80:14 81:3,5,6	81:6,11,12,13 81:14,17,23,24 82:13,17,17 84:11 85:19 86:8 141:9,11 142:1,3,4,16,17 144:23,24 145:7,8 146:4 189:20,23 191:15 protocols 24:4 24:5,8,11 26:2 29:25 30:9,10 31:8 43:20,23 43:25 44:21 48:17,24 49:16 83:1,2 141:7 142:13 145:17 189:16 193:14 195:8 196:18 197:12 provide 6:23 19:11 21:21 29:1 37:6 42:12 46:6 124:14 164:7 provided 35:1 81:15 155:3,24 160:7 162:22 182:13 providers 37:6 provides 19:4 164:12,16,20 providing 50:21	psa 113:5,8 114:1,5 115:2 115:12,20 116:3,7,11,17 118:6,11,18 119:3,8,13,19 160:18,21 161:11,13,17 193:20,23 194:12,17 psas 194:4,8 public 193:1 200:17 203:25 published 198:13 purpose 32:3 50:5 157:3 159:1 purposes 53:4 put 9:6 putting 15:3
q			
qualified 21:15 21:19 22:2,6 22:11,17,22 23:20 24:22 25:19 question 7:15 7:19,23 8:14 17:4 23:19,22 26:7 27:17 29:13 33:11 35:7 37:24 38:10 45:6,20 46:7 47:10,15			

49:10 51:18 52:9 55:19 56:24 57:13 58:5 65:23 68:4 69:5,6,14 69:21 72:5,24 72:25 77:19 80:7 81:10,17 82:6 86:4 88:22 89:4 90:12,15 96:4 102:5,23 104:2 109:4 110:13 111:2 112:1 115:5 131:1 134:16 135:1 138:3 141:19 141:21 142:8 143:18 145:22 148:2,7,8 150:25 156:7 159:25 161:25 162:12,13,15 165:2 166:7 167:21,22 168:5 170:22 173:4 178:23 189:6 193:21 198:25 questioning 128:5 190:10 questions 6:25 8:13 15:5 16:19 129:4 139:16 141:1	184:6 188:1,4 189:15,19 190:12 193:18 193:23 194:1 195:2,5 197:7 198:15,23 quick 161:1 quite 27:21 29:12 36:1 47:15 49:9 55:19 68:3 72:7 138:2 173:20 quote 129:20 130:6 r r 3:1 radio 193:2 range 39:8 103:17 ranges 37:5 rate 134:25 135:11 rather 63:5 79:2 108:18 reach 54:3,5 73:17 88:6 138:25 184:15 185:13,18 186:12 reaches 56:1 185:2 186:3,8 186:23 reaching 70:19	read 13:23 14:2 14:5,20,23 15:2 83:17,18 83:19,21 85:1 85:3 93:11 94:24 97:15,21 113:19 116:25 117:11 120:5 121:4 124:6 129:19 130:9 133:18 134:15 134:17 139:24 140:20,22 141:6 146:19 146:22 148:11 150:15 154:18 160:8 170:14 177:6 183:22 186:5,6 192:25 196:13,16 197:13 200:3 reading 108:24 114:5 117:8,25 119:24 120:20 156:22 197:22 reads 17:19 98:1 130:2 157:20 186:1 real 161:1 realize 40:9 really 21:23 61:6,19 64:20 70:15 71:2 90:20 91:9 131:9 133:5	147:13 169:1 196:11 rearrange 163:6 reason 6:23 176:24 202:4,7 202:9,11,13,15 202:17,19 203:5 reasons 195:25 recall 18:14 188:6 189:2,17 189:21 190:12 192:14 193:18 193:22 194:1,6 195:1,4 receive 88:10 109:10 123:3 132:19,22 134:5 168:14 180:8 received 109:14 113:2 122:18 123:12 144:5 147:2,10 147:14 149:21 169:20 170:6 170:10,18 171:1,3,10 172:14,17 173:23 175:10 176:5,10,13,16 176:25 178:18 179:4,5,9,12,23 180:14 182:3
---	---	--	--

receives 121:24 122:25 165:19 177:3 179:17 180:9 181:1,7 181:23 receiving 129:15,23,25 133:25 149:8,9 recent 20:22,24 recently 188:25 recess 43:8 96:16 128:24 175:23 recipient 55:16 55:21 56:1 88:24 182:25 recipients 66:1 183:14 recites 169:16 170:1 176:3 recognize 84:1 84:8 recognizes 106:6 recollection 190:23 record 6:10 43:5,7 46:11 46:17 80:4 96:15 128:22 152:11 175:22 198:22 199:2,3 199:7 200:6 201:6,9 202:5	red 152:14,15 152:20 153:4 153:14 reduce 196:2 refer 10:5 193:21 reference 87:4 87:7 163:20,25 164:3 196:21 197:10 references 84:10,13 referring 13:3 14:23 44:6 47:22 77:16 113:1 130:7 186:16 197:16 refers 80:10 85:11 112:25 134:18 146:24 171:23 186:19 186:24 187:6,8 187:9 reflects 28:8 149:25 150:15 refresh 84:17 190:23 regard 17:9 40:15 66:4 84:16 85:6 98:14 102:7 107:16 142:8 188:10,17 regarding 140:18 192:10	regards 186:10 reject 153:10 rejected 154:1 rejects 151:19 relate 129:4 161:25 related 26:24 38:7 139:17 relates 90:12 162:1 relating 23:19 195:5 relative 201:15 relay 44:24 relevant 14:19 27:15 rely 14:11 remember 11:15 13:16 38:20 41:8 42:16 84:7 98:17,19 161:7 remembering 79:13,16 remind 7:10 remote 1:13 6:16 7:7 repeat 51:18 72:25 95:12 150:24 rephrase 37:20 38:11 55:23 67:25 74:22 78:20 95:6 107:23 117:17	121:7 123:1 report 11:5,7 64:2 90:22,24 118:20 119:17 190:9,13 reported 1:24 reporter 2:17 7:11 33:6 37:12 48:14 49:23 129:6 130:18 143:22 147:8 150:24 155:15 159:9 169:13 178:7 180:1 183:11 198:24 201:2 reporting 203:1 represents 49:3 reproduced 129:11 requested 201:13 requests 82:8 require 59:13 64:8 126:22 128:20 194:24 required 55:12 55:15,20 59:5 93:6 96:13 100:3 112:2 114:7,19 115:6 115:16 116:4 116:18 118:1,9 118:15 161:3
---	--	---	--

161:11 187:17 194:14 requirement 41:14 80:17 91:25 95:19,25 120:20 157:14 193:19 194:3,7 requires 6:19 46:3 96:8 100:1 124:9 175:9 188:19 191:16,16 requiring 62:21 rereading 156:9 research 15:8 reside 81:12 resolution 70:16 71:14,20 72:12 81:3,5 81:11,13,24 82:13 141:9 142:10,16 146:4 resolve 81:18 82:10,14 resolved 82:20 resolving 81:19 respect 189:7 189:10 respectfully 184:2 respective 90:4 97:12 99:1,2	99:22 109:16 158:15 166:2 respectively 109:13 164:9 respond 16:4,8 responds 15:18 response 6:25 157:1,5,8 159:2 191:19 responses 14:18 85:6 196:4 responsive 159:25 rest 113:19 restart 171:13 restate 39:24 156:7 restructure 73:1 retain 153:13 retained 153:3 retaining 151:14 153:22 153:23 retransmissio... 175:3,5,18 retransmitted 144:18 175:1 reversed 186:2 186:8,22 187:14 review 13:25 84:3 201:12	reviewed 11:2 11:2,4,5,6,10 reviewing 18:21 84:6 revisit 183:25 184:1 right 6:14 9:2 14:8 16:10,18 17:2,8 18:15 19:10 20:1,2 20:21 22:1,21 23:19 25:11 29:23 35:16 36:2 38:6 42:19 46:13 47:18,21 66:20 77:15 81:2 85:17 88:22 91:15 97:21 103:19 106:10 106:11,25 111:4,19 112:20 115:4,7 116:14,20 120:15 121:23 122:22,23 126:9 129:11 131:21 134:6 136:25 141:5 145:15 146:11 146:23 147:4 148:25 149:14 152:20,24 154:14 155:12 161:24 163:9	171:9 173:11 175:8 176:2 178:5,6,21 179:16 183:10 183:20 185:9 194:11 197:14 ring 33:4 38:24 48:20,24,24 49:7,12,16 56:8 129:14,21 129:24 130:15 131:12,13,23 132:1,19 133:15 rings 138:7,21 room 7:12 8:22 8:24 9:1,2,3,6 route 66:9,10 109:6 120:8,17 routed 101:7 102:18 router 141:13 142:22 143:2,4 143:6 routes 92:5,20 93:15 95:23 96:10 98:9 100:21 101:16 102:15 109:2 111:24 113:14 120:3,9,13 166:25 routing 46:4,6 82:17 83:1 94:16 102:23
---	--	---	--

112:5 126:23 141:7,14 142:13,22 143:7 144:23 144:24 145:7,8 145:17 183:16 191:15,15 rule 8:6 rules 7:10 run 31:12 running 138:17 s s 3:1 5:1 203:5 satisfy 187:16 saw 126:13 128:4 saying 22:1 61:8 109:22 128:2 133:14 171:22 174:10 183:8,20 says 17:23 20:2 20:3 23:14 85:14 88:8 90:2,3 91:22 91:24 92:9 94:2,20 97:9 98:5,6,25 100:7 101:11 101:19,23 102:10 103:1 103:10,25 104:10 105:20 108:24 109:9 110:3 111:4	112:16,25 114:18 115:15 116:6,10 119:3 119:16,19 120:9,21 122:21 123:7 129:24 132:14 133:7 135:21 141:6 142:12 143:6 145:17 147:1,9 149:4 155:18,23 156:5 157:25 164:10,14,22 172:16,22 173:22 176:12 177:4 179:3 182:2,6 184:19 184:25 185:1,6 185:10 186:21 194:12 scenario 194:2 schematically 113:10 165:14 scheme 59:4 66:11 67:1,2 82:1 scope 69:14 searchable 132:9 136:9 137:1,12 second 33:10 40:4 52:17 53:21,24 54:3 54:6,10 55:6	59:20 60:4,12 60:13,24 61:4 62:12 64:25 68:2 69:25 85:10,15 87:12 87:17 89:8,10 89:11,22,23,25 90:2,7 91:18 97:25 107:12 109:11,12,14 109:17 128:12 140:15 149:16 149:18 150:8 150:21 151:3,6 151:8,14 152:8 153:10,11 159:14 161:16 168:5 170:3,8 171:10 172:23 172:25 175:7 175:11,14,16 178:15,16,25 179:18 180:5,6 180:8,15,18,20 180:24 181:5,9 181:12,12,25 182:9,9,13 183:19,24 184:22,23 185:2,7,10,13 186:1,3,9,12,15 186:23 187:15 secondary 139:21 140:7 140:10,11,14	140:16 143:10 143:15,19,20 144:7,10,13,16 144:17,22 145:6 section 17:15 17:17,19 18:8 21:20 24:21 133:22 156:9 158:13 sections 12:9 12:11,12,13 18:16 139:5 see 10:20 19:21 19:24 20:7 29:6 31:7,10 34:8 46:17 85:13 87:3,6 89:5 91:3 93:3 97:8 98:3,12 103:23 117:14 118:3 119:5 125:7,14 126:10,12 131:7,22 133:13 137:14 139:20 140:1 141:15 146:18 148:23 149:17 152:4,18,23 169:11,22 172:22 179:19 183:17 184:17 187:18 193:4 196:25 197:3
--	--	---	---

197:10,18 seen 160:18 165:18 select 63:5,24 67:12 selection 63:5 63:20,22 selections 191:12 semiconduct... 34:14,16 send 52:10,11 52:17 53:21,24 59:6 60:11 61:3 62:11,17 66:25 68:6 69:10,23 87:11 134:23 135:6 136:2,12 sending 49:1 51:15,22,25 78:12,18 122:16 123:11 sends 122:15 123:9 136:15 sent 34:23 52:22 55:5 64:16 78:24 82:9 92:11 119:24 137:25 174:18 175:3 175:15,16 sentence 93:20 97:21,25 98:6 98:12 99:20,25	102:25 103:25 104:9 105:4,20 112:7 115:21 116:10 154:15 155:18,20 157:19 158:2,6 158:9 184:13 185:16 186:1 186:18,21 sentences 100:12 separate 64:10 64:11,15 81:8 137:16 155:4 166:12 separately 45:10 77:18 161:23 sequence 135:14,19,22 135:23,24 155:6,7,10 sequencing 191:6,8 serial 130:25 136:21,23 137:6 series 89:17 108:10 130:17 140:8,14,15 141:2 155:9 156:2 serves 88:9 168:13	services 29:1 session 47:23 set 30:23 31:17 31:23 63:23 192:9 201:5 seven 139:11 158:12 several 12:17 48:3 88:2 95:2 97:6 share 10:8 41:25 83:9 151:24 shares 94:23 148:14 162:8 162:17 she'll 7:12 sheet 200:5 203:1 shelf 114:6 115:2 116:12 116:18 122:15 122:16 123:8,9 123:11 161:5 161:13,17,25 168:10 169:3 194:13 shelves 9:14 shorthand 2:17 201:2,7 show 21:24 108:16 showing 152:8 153:13	shown 198:2 shows 116:21 143:14 163:15 165:14 198:7 side 20:2 41:6 131:22 135:6 sign 10:22 signaling 36:15 37:5 42:13 64:10,12,15 signals 35:12 35:17 63:23 64:1 signature 10:20 10:23 201:24 202:25 similarly 92:10 103:10 107:13 177:16 simple 69:21 71:9 simplest 54:22 55:1 66:22 simplicity 125:18 simplify 116:20 simply 57:6 63:23 79:22 99:21 100:7 101:11,19 103:13 104:10 106:6 110:3 112:16 120:21 148:9 177:4
---	---	---	---

simulation 29:6 29:15 single 114:7,15 114:19 115:7,8 115:12,16,22 116:5,19,22 117:6,19 118:2 118:5,9,11,16 125:19,23 127:8 137:24 161:3,8,22 162:1 186:2,22 188:19 194:2,4 194:14 sir 197:6 sit 16:18 sits 81:5 sitting 38:6 situation 23:9 88:25 skill 195:9,22 skilled 142:6 skills 21:24 slave 87:11,12 87:17,17 88:5 88:6 89:3,7,8 89:10,11,16,17 89:19,22,23,24 90:3,3,16 91:3 91:6,7,18,19 92:2,3,4,8,11 92:18,18,20 93:1,13,13,15 93:21,22 94:2 94:5,8,10,12,21	94:23,25 95:1 95:8,14,15,22 95:23 96:9,10 97:11,14,19,23 97:24 98:7,8,9 98:15,24 99:3 99:7,8,9,15,17 99:21,24 100:4 100:10,13,14 100:15,19,20 101:6,8,14,14 101:16,24 102:8,14,21,24 103:2,6,13,22 104:1,4,5,7,13 104:15,15,16 104:22 105:15 105:24,25 106:7,15,16,22 107:1,4,7,17,25 108:10,12,24 108:25 109:2,5 109:9,16,24 110:1,4,9,11,11 110:12,16,21 110:22,23,24 111:16 112:4,9 113:8,12 114:16 117:13 119:3,20,25 121:6,9,20,20 121:24 122:1,2 122:6,7,8,24,25 123:2,3,5 124:20 126:15	126:18 134:24 135:7 136:2,13 136:17 137:15 138:1,6,6,25 139:12,14 147:12,23 148:15 149:3,9 149:16,18,23 150:4,8,10,12 150:17,18,21 151:4,6,8,8,12 151:14,20 152:8 153:9,10 153:11,13,15 153:22,25 155:3,23 158:14 160:6 164:8 165:12 165:12 167:8 167:23 168:12 172:2 174:1,9 175:15,16 176:7 178:13 179:7,25 180:3 180:16 181:10 182:5,7,24,25 183:3,5,24 184:20,20 186:11,15 187:15 191:8 192:17,17 slave's 184:14 185:17 slaves 87:3,6 88:10,14 89:2	89:12 92:1 93:25 98:2 101:12 102:12 105:12,13 117:19 119:25 125:15,19,23 126:1,12 127:8 127:24 129:13 132:18,22 134:19,21 135:19 138:21 153:25 154:17 155:13,19,21 156:1,20 157:22 158:18 159:8 161:9 167:1,20 168:7 168:14,17,21 171:19 172:20 173:2,7,12,18 174:14,19,23 175:7 177:13 177:21 178:10 181:17 183:8 183:13,20 190:15 slightly 89:4 slow 83:10 slower 159:21 solve 156:23 somebody 12:24 163:5 sorry 8:18 13:8 21:17 28:7 29:12 30:3
---	--	---	--

31:20 33:14	198:3	stair 68:25,25	75:14,21 76:3
36:1 47:10	specifically	staircase 68:23	76:10,20 77:2
49:9,22 59:24	37:17 40:9,18	68:24	77:22 78:7,25
60:19 65:22	122:9 125:6	stairs 68:24	80:23 82:15,22
68:3 71:17	specification	stamatopoulos	84:2 85:25
74:18 82:12	81:9 83:19,21	3:13 4:5 12:2	87:14 88:7
87:5 88:4	83:22,25 84:7	12:13 14:12	90:18 91:13,21
95:11 99:4	101:23 114:5	15:11 22:13,24	95:17 99:19
109:18 119:10	128:16 193:24	24:2,23 25:20	101:9 102:9
121:22 128:16	194:10	26:19 27:2	103:8 104:8,24
135:1 136:16	specifications	28:1 29:11,18	106:1,17 107:3
138:2 140:21	11:3 84:10	30:8,13 31:19	108:2,13 110:2
145:4 152:16	specified 63:17	32:1,17 33:8	112:6,23
157:16 158:4	specifies	33:23 35:9,20	114:10,17,25
160:20 168:19	172:13	36:4,18 37:23	115:14 116:9
171:13 174:2	specify 63:8	38:14 39:6,13	118:13 121:13
177:24 181:3	91:9	40:22 41:11	123:6 124:23
185:4 187:24	speed 157:8	42:5,22 48:15	125:25 126:16
197:2,4 198:10	spell 6:10	48:22 49:17	127:11,15
sort 26:20	spend 13:17	50:4,14,19	128:23 130:19
sound 80:24	sphere 25:3,22	51:8,16,23	131:5,15
sounds 20:21	26:1	52:8 53:22	132:24 133:17
speak 16:10	spot 100:18	54:4,12 55:7	135:12 143:23
speaks 199:4	132:15 184:7	56:2,12,19	145:10,20,22
spec 94:20	190:17 192:20	57:4,17,23	145:24 146:6
special 196:21	spots 190:24	58:8 59:9	151:16 152:10
specific 19:6	stack 32:19,19	60:16 61:5	152:16,23
23:16 27:14	44:1,6,8 46:16	62:3,14 63:18	158:10 160:14
32:3 49:15	47:2,9,13,19	64:13,19 65:2	160:24 162:19
57:9 58:9	52:3,14,20,21	65:14,21 66:3	163:4 167:10
68:10 80:18	53:25 54:15	66:12 67:3	168:23 170:12
85:21 90:15	55:1,2 74:16	68:9 69:13	174:24 184:5
124:5 135:24	78:22 80:11,14	70:2,23 72:3	188:3 198:15
141:1 156:2	81:6,12,14	72:21 73:11,19	198:25 199:3
175:2 189:25	85:19	74:2,14 75:1,8	

stand 15:7,13 standalone 34:25 standby 88:13 88:15 125:15 125:23 127:7 137:20 164:13 164:14,16,19 167:19 168:6 168:16,20 182:23 183:19 183:24 standing 67:15 stands 15:4 16:23 118:14 193:20 start 7:15 17:17 79:2 144:4 starting 34:9 87:25 93:11 97:17,19 119:12 140:3 146:18 169:12 169:22,24 starts 92:16 93:20 97:1 103:1 134:12 134:13 184:13 185:16 state 6:10 38:1 38:4 45:20 135:2 201:2 stated 8:16,19	statements 200:7 states 1:1 2:1 106:19 162:21 184:14 185:17 station 139:21 140:10,11,13 140:14,16 143:10,20 144:21,22 145:5,6 stations 140:7 143:21 stay 67:9 124:17 step 144:4,6,8 144:10,17 steps 69:4 strategies 62:7 strike 178:22 structure 52:1 52:13,19 53:18 studied 81:16 study 83:3 submitted 5:3 10:1,12,16 17:14 34:17 subnet 124:16 subnets 124:13 124:13 subnetwork 124:5 subscribe 200:6	subscribed 200:12 201:18 203:22 subscriber 40:23 41:6,17 41:18,24 42:14 84:12 87:10,12 88:23,24 89:3 89:9,10 90:5 91:5 158:15,16 159:12 165:5 subscribers 40:19 89:12 90:14 126:2,2 126:5 127:16 158:19 165:1 192:6 substance 8:4 188:9 substantiated 145:13 substantiating 19:3 subtopics 24:18 suggest 17:20 158:14 suggested 12:23 13:14 sum 188:8 summarize 39:17 98:20 summary 27:3 27:15 supply 134:24 135:10,14	supplying 134:13,20 135:21 support 10:1 18:25 42:7 158:1,5,16 159:12 supports 19:12 sure 18:22 27:22 33:17 41:17 47:15 51:17 52:23 56:22 58:4,13 69:15 72:7,24 115:10 125:10 129:10 131:2 133:21 137:4 143:17 149:13 151:18 163:13 173:20 174:7 197:8 switch 30:2 53:15 78:22 79:10,15,25 92:1,3,4,7,9,18 92:19,24,24,25 93:13,14,22 94:1,2,3,7,8,10 94:11,25 95:1 95:9,15,22,23 96:8,9 97:11 97:20,22,24 98:2,5,7,8,15 98:23,24 99:6 99:7,8,9,18,21
---	---	---	---

100:4,10,14,19	167:7	system 30:23	156:21 159:22
100:20 101:13	switched 17:22	57:7,15,18,21	198:1 203:2
101:14,15,19	46:1 77:12,21	64:3 66:14	t
102:12 103:10	78:6,13,14,16	68:18 74:13	t 4:1 5:1
103:16 104:13	78:17 80:8,9	79:19 107:6	table 94:16
104:15,16,21	85:12,16,24	114:6 116:12	141:14 142:23
105:7,22,23	86:7,19 90:8	116:18,21	143:1,2,7
106:3,4,20,20	168:18,22,25	124:21 125:22	191:15
106:21,25	169:5	125:24 126:10	tablet 9:7
107:13,18	switches	127:7,10,13,14	tag 19:22,25
108:25 109:1,4	168:24	127:21 128:10	20:3,6,7,8,15
109:13,17,23	switching 24:6	129:14,22,25	take 7:20,21,22
110:7,11,12,13	24:8,9,12	130:16,17,21	41:5 77:18
110:25 111:5,7	29:25 46:1	131:3,4 132:14	79:6 115:7
111:15,22,23	55:11 64:6	134:21 156:15	132:8 136:8
111:24 112:2	78:18 82:17	157:2,6,8,14	137:11 140:12
112:10 113:4	83:2 92:4,19	158:22 159:4	155:5 190:22
113:11 114:1	93:1,14 94:3,8	159:14 161:5	191:17
114:15,23	94:12 95:1,23	161:14,18,25	taken 2:15 43:8
115:12 126:14	96:9 98:9 99:9	162:24 163:16	61:15 96:16
128:2,3,7,12,17	100:20 101:15	168:11 189:25	128:24 175:23
128:18 143:5	104:16 106:4	190:3,7,19,25	201:4
147:2,10,14,21	106:22 109:1,5	191:24 192:1,3	takes 113:6
147:21,22	110:12,14,20	192:4 193:13	157:5
148:13,14,21	111:24 112:3	194:13,19	talk 45:19
149:5,6,7,15	112:14 113:11	195:6,16 196:3	137:24
150:2,2,3,6,11	113:14 120:3,9	196:6,6 197:21	talked 43:19
150:22 151:2,7	120:13,17	198:9	70:24 188:10
151:10,19	121:2,18 122:5	systems 1:4 2:4	talking 40:8
152:7 153:12	147:22 149:7	20:3 23:2	45:15,17 48:2
160:21 163:19	150:4,11	25:24 30:23	53:1 54:19,22
163:23,24	165:21,24	31:17,24 67:17	61:23 64:5
165:11,17,17	169:4	105:17 130:25	69:20 91:15
165:19,22	sworn 6:6	130:25 131:1	115:4 127:6,9
166:3,6,22,25	200:12 203:22	137:19 155:8	155:8,12,13

166:19,21 173:1 target 23:15 62:22,24 targeted 63:8 105:10 tcp 31:10,12,16 31:17,23 32:2 32:3,4,14,18,19 43:20 44:5,9 44:14,17,21 45:5,10,12,14 45:22 47:9,12 47:17 48:3,5 50:1,8,11 66:16 77:10,16 77:20,23 78:3 78:21 80:11,14 80:15 81:12,14 141:10 142:1 142:17 teach 195:9,24 196:9 teaches 132:21 192:1 193:17 195:11 196:1,3 197:23 technically 131:7 technologies 23:6 29:25 technology 12:17 24:6,10 25:9,25 40:10 42:4,7 50:2	198:4 telecom 24:4,5 25:5 29:25 telecommuni... 27:5 40:11 telephone 35:6 35:13 37:6 38:23 42:8 tell 6:20 term 36:13 57:5,12 58:10 80:9 162:13 169:5,6 termed 88:12 terminal 144:3 144:6,14,19 test 159:16,18 192:10 testified 6:6 testifying 6:20 testimony 6:24 8:5 201:9 tests 158:24 text 111:17 132:5,9 133:5 133:21 143:17 152:15 156:22 159:13 thank 11:25 49:21 105:2,18 108:20 168:4 169:8 199:5 thanks 48:10 164:16	theo 33:14 152:12 199:4 theodoros 3:5 theory 45:10 thereto 109:11 thing 7:23 41:21 56:22 58:4 70:17 71:20 72:13 81:8 152:11 166:16,17,24 things 22:15 23:7,14 25:7 27:10,19 36:22 42:21 83:6 106:11 108:4 116:20 133:20 148:9 155:13 191:21 195:24 think 15:4 18:17 21:5 23:21 24:25 26:3 27:13 32:8 39:11,15 40:15,16 43:3 46:20 49:6,11 49:14,25 58:11 59:15 65:4,15 67:23 68:21 69:2 72:6 75:15 86:12 87:24 94:7 95:18 96:6,14 104:9,17,19 112:7 116:23	116:24 118:14 118:20 133:14 137:5 143:7 153:7,18 154:8 156:13 159:12 161:20 165:7 174:16 184:2,5 184:6 193:9 199:3 thinking 27:22 34:2 36:20 56:22 108:16 113:23 third 3:15 40:5 90:1 102:25 134:24 135:6 136:4 154:15 155:17 157:19 158:2,6 180:23 thirty 129:10 146:16 thoroughly 19:11 thought 26:20 79:14 89:6 113:25 three 11:14 32:23 33:1,3 40:1 103:19 125:15 145:21 164:6 177:17 183:18 thursday 1:14 2:16 6:2
---	--	---	---

time 8:18 13:8 13:17 15:3 20:14 26:13,14 32:4 35:10 37:20,21 38:1 38:3,21 41:9 55:19 56:24 65:22 96:15 119:17 136:16 141:19 145:3 157:5 168:5,19 173:4 191:17 191:20 198:13 201:5 times 7:4,6,7 11:12 12:17 137:22 138:18 157:8 159:2 177:17 tired 197:4 tkonstantako... 3:9 today 6:17,25 8:20,23 18:21 25:9,25 39:15 41:13 42:4 45:16 together 12:17 15:3 44:10 53:17 81:8 token 48:20,24 48:24 49:2,3,7 49:12,16,19,21 50:13 56:8,9 56:17 57:2,10	58:6,15,24 59:2,5,10,21 60:4,7,18,25 61:7,10,12,24 61:25 62:4,7 62:13 79:9,14 79:17,17,22,25 196:19 197:10 tokens 62:6 told 27:24 tool 185:4 top 12:4 18:14 46:24,25 87:3 87:6 121:24 135:6 164:6 topic 22:10,21 23:1 24:19 25:12,17 29:6 29:9,15,22 30:6 34:5,8 43:19 61:19 topics 21:11,14 21:18 22:3,4,7 22:8,21 23:25 24:17 25:14 27:1 29:1 163:11 topology 33:4 92:12 122:13 total 11:18,22 traces 64:2,4,7 tracked 165:3 trademark 1:1 2:1	transcribe 7:13 transcribed 201:8 transcript 7:14 200:3,6 201:9 201:11,13 transcription 46:18 86:5 202:6 transferred 109:10 170:21 translation 84:13 translations 84:17 191:17 transmission 53:3 64:22,24 67:8 73:22 129:14,15,16 129:22,23,24 130:1,3,12,16 131:12,13,23 132:1,19 133:15 134:21 134:25 135:11 138:7,21 144:3 166:4 175:13 transmit 40:12 79:20 88:11 132:18 transmitted 88:17,19 89:7 139:8 144:16 186:10	transmitting 129:15,22,25 transport 35:12,17 36:23 41:15 42:13 47:23 67:12 79:7 81:14 transported 87:16 transporting 36:14 40:11 transports 37:4 51:10 52:6 travel 136:20 137:14 138:24 traverse 192:17 trial 1:2 2:2 true 167:14 201:9 truth 6:20 truthful 6:24 try 7:12,18 14:8 71:10 73:2 74:20 138:4 159:25 190:10 197:15 trying 57:11 58:23 61:18 68:21 71:8 96:4 97:16 104:20 137:23 151:18 156:14 156:23 197:13 tuesday 11:16
---	--	---	---

turn 10:18 21:9 31:5 43:16 129:8 134:10 139:18 141:4 146:12 163:10 167:16 169:9 175:20,25 182:15 185:23 190:21 turned 133:3,4 twice 72:7 twisted 40:12 41:15 42:1 139:25 two 18:16 40:21 47:2 51:13,20,24 53:10,16,19 60:2,14 61:2 63:11 72:7 77:13 90:13 108:4 109:22 111:13 124:9 124:12 133:10 133:15 134:2,4 137:16 159:10 168:11 170:20 179:16 183:6 191:21 type 36:19 40:1 40:2,4,5 49:7 49:12 52:12 53:3 157:11 189:23	types 22:15 23:16 26:10,22 35:12,16 36:15 36:22 39:1,3 40:1 48:24 50:23 54:17 82:8 85:21 191:16 192:13 195:8 typically 80:14 86:13 122:14 123:7,9 131:6 u u 6:11 u.s. 1:10 2:10 uh 130:8 163:14 unaccessible 181:18 unaffected 174:13 unambiguous 155:4,24 156:5 159:8 160:7,10 160:12,13 162:9,14,18,22 under 6:17 21:11 24:1,20 25:13,14,18 27:11,19 28:5 29:9,16,23,24 30:1,2,6 34:6,8 34:15 43:11 53:20 96:19 107:15 114:14	115:11 134:8 158:11 197:5 201:8 underlying 50:2,12 underneath 48:6 understand 6:17,19 15:21 16:5 18:24 19:2 24:17 25:1 30:19 31:1 33:1 41:8 43:3,11 51:17 58:23 59:15 60:17 67:20 69:5 70:12 71:8,10 83:22 83:24 84:22,24 85:4,7 94:22 96:3,19 101:5 101:25 102:22 103:4,7 109:21 115:19 123:4 123:19 124:8 124:19 126:9 127:4 130:20 132:5 133:5 140:24 142:6 161:24 170:22 172:9 173:20 181:20 197:6 understanding 23:4,5 24:8 25:8 32:9 91:2	101:22 102:19 111:12 120:15 153:16 156:23 179:8 understood 18:7 84:19 105:18 107:11 119:22 131:11 134:10 175:17 unidirectional 133:1,11,15 134:2,4 137:22 unique 75:13 76:12,15,21 77:3 91:4,8,11 92:7 94:5 114:6,24 115:2 115:13,25 116:3,11,17 118:6,12,18 160:13,19,22 161:4,13,17 163:3 194:13 uniquely 73:4 76:1,19 90:17 92:8 114:16 uniqueness 114:7,18 115:6 115:15,19 116:4,7,18 118:1,9,15 160:16 161:3 161:10 162:11 193:20 194:4,7 194:12,14
--	---	---	---

unit 89:20,22 89:23,24 90:3 90:7 109:16 110:22,23,25 112:9 122:8 147:12 158:14 167:23,25 172:15,18,25 175:10,11,12 175:14 176:6,7 176:14 177:13 177:21 178:10 178:16,19,25 179:1,6,7,13,14 179:18,24,25 180:5,6,6,8,10 180:14,15,18 180:21,21,23 180:24 181:1,4 181:5,7,9,13,22 182:4,5,10,10 184:23,23 185:7,8,11,11 185:14 186:15 186:15 187:15 187:16 united 1:1 2:1 units 17:21 85:15 89:16,17 90:3 109:10,11 110:21 117:13 122:6,7 129:15 129:23,25 168:11,12 169:20 170:7	170:19 173:24 174:1 175:15 178:14 180:3 180:16 181:10 182:7 184:20 unreachable 171:16 update 21:6 uploaded 83:8 upstream 88:12,17 147:7 147:18 148:6 166:3 186:14 186:16,25 187:6,20 use 9:8 38:20 45:11 56:9 65:12 66:24 69:24 78:19,22 80:12,13 82:18 100:10 101:3 141:7,11,24 142:6,9,13,18 145:6,17 156:19 166:18 195:10,11 used 32:3,10,13 32:15 36:13 37:19 38:20,22 40:10 42:21 44:2 46:5 47:19 48:12,17 48:21 49:7,12 49:18 58:6 62:6 66:8	67:20 68:16,18 69:17 70:5,7,9 70:10 72:6 73:6,8,21 74:10,23 75:5 82:10,14 94:6 95:3,7,13 96:5 104:21 111:15 120:7,16 122:13 132:6 133:6,9 134:8 137:22 138:11 141:2,10 142:16 143:16 143:18 144:22 156:16 159:17 162:14 191:25 192:7 195:17 user 44:11 45:14,22 users 43:23 44:3 uses 70:21 71:25 72:18 75:10 80:16 100:11 101:18 107:6 125:24 142:9 144:23 145:7 155:1 181:23 189:25 using 9:4,16 33:4 35:11,16 54:15 62:20 66:10 67:15,21 68:1,7 69:11	71:12 73:15 74:22 75:19 76:7,18 100:6 101:4,5 102:8 112:21 127:19 127:20 133:9 134:4 138:7 142:3 157:10 162:2 167:20 168:7 174:16 201:7 usually 47:6 166:12 191:15 utilize 141:20 utilized 66:15 66:16 81:18 utilizes 80:10 81:13 utopia 165:25
v			
v 1:6 2:6 202:1 203:2 vacate 161:12 variations 46:8 113:16 variety 40:24 41:7 42:11 44:24 196:18 197:11 various 12:22 23:5 35:12,16 36:15 50:22 54:17 82:8 122:13 164:25 191:16			

vary 79:21 vci 84:13,17 veritext 203:1 versa 40:14 versed 24:11 version 20:22 versus 13:22 50:13 58:25 83:1 141:2 vice 40:14 video 6:17 videotaped 1:13 2:14 vink 17:20 129:5,11,21 130:2,5,16 131:18 132:12 132:13,21 133:22 134:11 134:22,23,24 135:5,10,17 136:1,5,6,11 139:3 154:15 154:22,25 155:11,18,20 155:21 156:4,5 156:11,15,19 156:20,22 157:3,9,20,23 158:13,16,18 158:22 159:1,7 159:12,15,17 160:3,6 162:7 162:16,21 189:20,24,25	190:8,14,18 191:2,23,25 192:7,9,12,14 192:16,20,21 192:22,24,25 193:7,17 195:22,23 196:3,5,13,16 196:17 197:5,9 197:16,20,22 197:24,24 198:7,9,13 vink's 157:6 159:19 190:5,7 190:25 191:9 191:18 193:10 193:12 violated 157:5 virtue 122:24 123:2 vision 27:24 visualization 34:1 visualizations 56:21 visualizing 58:3,4 vitae 5:5 voice 37:5 volume 196:23 volunteer 18:13 vpi 84:13,17	w wait 7:14 wall 42:18 want 7:21 33:10,12 49:21 67:23 69:7 75:3 83:4,4 84:3 90:20 113:19,21 122:22 137:9 153:1,8 154:9 167:21 177:6 196:15 197:15 wants 69:23 134:23 135:6 136:12,15 way 14:8 33:20 38:18 55:25 71:12,15 74:10 76:18 87:25 95:5 96:4,21 101:6 102:6 112:20 133:18 135:18 138:4 139:14 147:13 160:1 197:23 ways 33:17 56:4 63:9,11 71:1 72:8 82:25 83:6 93:4 94:14,18 95:20 99:11 112:19 we've 43:19 81:25 85:18	98:13 126:17 126:18 154:10 160:18 165:5,7 165:18 177:16 179:22 wednesday 11:17 week 11:17 welcome 43:10 96:18 129:1 went 20:9 whereof 201:17 wide 39:8 44:24 widespread 141:11 142:18 146:8,8 willing 18:12 wireless 39:7 39:23 40:6 wires 40:12 64:3,9 139:25 wiring 41:15 wish 126:5 wishing 127:17 withdrawn 198:11 witness 10:15 14:13 15:12 19:21 20:1 22:14,25 24:3 24:24 25:21 26:20 27:3 28:2 29:12,19 30:9,14 31:20
---	--	---	---

32:2,18 33:7 33:16,24 35:10 35:21 36:5,19 37:13,24 38:15 39:7,14 40:23 41:12 42:6,23 48:16,23 49:18 50:5,15,20 51:9,17,24 52:9 53:23 54:5,13 55:8 56:3,13,20 57:5,18,24 58:9 59:10 60:17 61:6 62:4,15 63:19 64:14,20 65:3 65:15,22 66:4 66:13 67:4 68:10 69:15 70:4,24 72:5 73:12,20 74:3 74:15 75:2,9 75:15,22 76:4 76:11,21 77:3 77:23 78:8 79:1 80:25 82:16,23 83:10 84:3 86:1 87:15 88:8 90:19 91:14,22 95:18 99:20 101:10 102:10 103:9 104:9,25 106:2,18 107:4	108:3,14 110:3 112:7,24 114:11,18 115:1,15 116:10 118:14 121:14 123:7 124:24 126:1 126:17 127:16 130:20 131:6 131:16 132:25 133:18 135:13 143:24 145:11 146:7 147:9 151:17 153:1 158:11 159:10 160:15,25 162:20 163:5 167:11 168:24 169:14 170:13 174:25 180:2 187:23,24 188:1 198:16 201:17 202:3 witnesses' 203:3 wondering 58:21 61:1 word 83:25 84:8 86:11,17 130:21 155:1 156:11,16,19 174:17 words 79:19,22 142:24 157:20 190:3	work 21:22,23 23:16,23 25:22 28:6 38:6,7 42:21 44:17,19 44:22 45:5,13 45:21 50:11 57:7,16 60:8 65:7 67:17 167:3 190:4 worked 20:25 22:4 25:24 27:14 37:16,17 61:14 working 13:17 27:4 28:9,12 37:21 57:19 86:8 works 44:9 88:1 107:16 142:3 wrap 79:6 write 12:8,13 26:7 124:3 129:12 154:15 184:18 writing 11:7 wrong 20:10 124:20 wrote 12:9,10 12:18 13:20 26:14	y yeah 74:15 years 25:5 27:4 27:15 28:6,9 29:4 41:13 45:1 82:24 84:18 yellow 20:3 york 3:8,8,16 3:16 203:1
			z
			z 6:11 zoom 9:5,23
		x	
		x 4:1,1 5:1,1 201:13	

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

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

(A) to review the transcript or recording; and

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

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

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

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

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at www.veritext.com.