

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

COMMScope TECHNOLOGIES)
LLC,)
Petitioner,)
)
VS.) Case No. IPR2023-01061
) Patent 6,998,537 B2
BELDEN INC.,)
Patent Owner.)

COMMScope TECHNOLOGIES)
LLC,)
Petitioner,)
)
VS.) Case No. IPR2023-01062
) Patent 6,570,095 B2
BELDEN INC.,)
Patent Owner.)

ORAL AND VIDEOTAPED DEPOSITION OF

KENNETH CORNELISON

JULY 25, 2024

(REPORTED REMOTELY)

Reported by: Donna Wright, CSR

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CommScope v. Belden
IPR2023-01061, -01062
Belden EX-2013

1 ORAL AND VIDEOTAPED DEPOSITION OF
2 KENNETH CORNELISON, produced as a witness at
3 the instance of the Patent Owner, and duly
4 sworn, was taken in the above-styled and
5 numbered cause on July 25, 2024, from
6 9:01 a.m. to 3:00 p.m., before Donna Wright,
7 CSR in and for the State of Texas, reported
8 by machine shorthand and remotely via Zoom,
9 pursuant to any stipulations or agreements
10 stated on the record or attached hereto.

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1 A P P E A R A N C E S

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8 NUMBER DESCRIPTION PAGE

9 Exhibit 1007 157

10 IPR2023-01601 Declaration

11 ('537 Patent)

12 Exhibit 1009 106

13 US Patent 3,622,683

14 Exhibit 1010 146

15 German Patent No.

16 297,19,866 U1 (English

17 Translation)

18 Exhibit 1012 164

19 Japanese Patent Pub.

20 No. S43015470 (English

21 Translation)

22

1	EXHIBITS CON'T		
2	NUMBER	DESCRIPTION	PAGE
3	Exhibit 1015		112
4		US Patent 4,755,629	
5	Exhibit 1080		111
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1 THE REPORTER: We're here for
2 the deposition of Kenneth Cornelison
3 on July 25, 2024, in the case styled
4 CommScope Technologies, LLC vs.
5 Belden, Inc., in the United States
6 Patent and Trademark Office.

7 MR. HOEHNER: Thomas Hoehner of
8 Barclay Damon on behalf of Belden,
9 Inc.

10 MR. KOHLHEPP: Peter Kohlhepp
11 of the Carlson Caspers law firm for
12 petitioner CommScope. Also with me
13 today is Ryan Rypka, also with Carlson
14 Caspers.

15 THE REPORTER: Okay. Will you
16 raise your right hand, please?

17 KENNETH CORNELISON,
18 having been first duly sworn, testified as
19 follows:

20 EXAMINATION

21 BY MR. HOEHNER:

22 Q. Hello, Mr. Cornelison. You

1 were previously deposed on March 6, 2024 in
2 relation to IPR2023-01061 and IPR2023-01062,
3 correct?

4 A. This is correct.

5 Q. You are familiar with how the
6 deposition process works, correct?

7 A. I guess I have been through a
8 couple of them now, yes.

9 Q. You understand that your
10 testimony today is under oath and that -- as
11 it was in your prior deposition?

12 A. Yes, I do.

13 Q. Are you aware that under the
14 rules for inter partes reviews, once you
15 begin your testimony today until the
16 conclusion of my questioning, your counsel
17 cannot consult or confer with you regarding
18 the substance of your testimony except for
19 the purpose of conferring on whether to
20 assert a privilege?

21 A. I do understand that.

22 Q. Is there any reason why you

1 cannot give honest, complete and truthful
2 testimony today?

3 A. There is not, sir.

4 Q. Do you understand that today's
5 deposition is in relation to two separate
6 IPRs; namely IPR2023-01061 and IPR2023-01062?

7 A. Yes, I do understand that.

8 Q. And where are you located
9 today?

10 A. I'm located at the Casper
11 Carlson office building in Minneapolis.

12 Q. Although this deposition is
13 taking place remotely, Commscope's counsel
14 received a box containing copies of various
15 documents that I will be using as exhibits
16 today.

17 Do you have that box with you?

18 A. Yes, the box is unopened and
19 beside me.

20 Q. Okay. So you haven't reviewed
21 any of the documents in that box?

22 A. No, sir.

1 Q. At this time you can feel free
2 to open the box and take out the documents
3 inside.

4 A. I have done so.

5 Q. Besides the materials I
6 provided in the box you just opened, did you
7 bring any documents or other materials with
8 you today?

9 A. Yes, I have a clean copy of my
10 depositions provided by the law firm this
11 morning.

12 Q. Of your depositions?

13 A. My depositions, yes.

14 Q. Your deposition transcripts?

15 A. I'm sorry, I'm using the word
16 deposition improperly or the wrong word.

17 They are my declarations, the
18 second declarations. I'm sorry, sir.

19 Q. Okay. So you have copies of
20 the declarations that you filed in IPRs 01061
21 and 01062 in July of this year; is that
22 correct?

1 A. That is correct.

2 Q. That's the only thing you have
3 with you?

4 A. I have those two depositions --
5 those two declarations with me, yes, sir.

6 Q. Do those declarations contain
7 any markings or anything other than what you
8 -- were filed with the patent office on July
9 9th?

10 A. No, sir. To my knowledge, they
11 came right off the printer from the document
12 that was generated.

13 Q. You have 40-plus years of
14 experience in the wire and cable industry; is
15 that correct?

16 A. Yes, that is correct.

17 Q. So in your career, you've
18 designed high speed communications cables,
19 correct?

20 A. Yes, I did.

21 Q. Can you walk me through the
22 process for designing a high speed

1 communications cable?

2 MR. KOHLHEPP: Object to form.

3 THE WITNESS: Well, my
4 understanding here today is that we're
5 talking about my declarations and the
6 content, et cetera. So I don't quite
7 know how to understand -- quite know
8 or understand how to answer that
9 question where it's kind of
10 open-ended.

11 Do you have any specific
12 examples of what you're looking for
13 that might relate to declarations?

14 Q. (BY MR. HOEHNER) You said you
15 have 40 years of experience in the wire and
16 cable industry and that you have designed
17 high speed communications cables.

18 And my question is how does one
19 design a high speed communications cable?
20 What's the -- what's the first step in
21 designing a high speed communications cable?

22 MR. KOHLHEPP: Object to form.

1 THE WITNESS: Well, I'm not
2 sure there is a first step, per se,
3 that you just follow a book. It's
4 going to be depending upon the
5 situation, the requirements, what
6 cables you have already available.

7 As far as information and how
8 they perform, it's -- it's -- you
9 know, a first step is not really a --
10 I just don't know how to answer that
11 question because I don't really deal
12 with the first step, per se. It just
13 depends on the situation.

14 Q. (BY MR. HOEHNER) What are the
15 requirements associated with designing a high
16 speed communications cable?

17 MR. KOHLHEPP: Object to form.

18 THE WITNESS: Once again, it
19 depends on the cable we're talking
20 about and the issues at hand with the
21 cable.

22 Q. (BY MR. HOEHNER) What design

1 parameters do you need to design a high speed
2 communications cable?

3 MR. KOHLHEPP: Object to form.

4 THE WITNESS: Well, some --
5 some design parameters may include,
6 but not limited to just electrical
7 performance and mechanical issues,
8 those kinds of things that you're
9 trying to accomplish with the product,
10 with the cable design.

11 Q. (BY MR. HOEHNER) You said
12 "mechanical issues." What do you mean by
13 that?

14 MR. KOHLHEPP: Object to form.

15 THE WITNESS: Well, the
16 mechanical issues, electrical issues,
17 go down the list.

18 However, today I do have
19 express opinions and provide insight
20 and background to the issues at hand,
21 explain my position and why I have a
22 position in the declaration.

1 So I don't quite understand or
2 know right now without further
3 understanding, study how to try to get
4 at your answer of defining what -- if
5 someone does design a cable, a high
6 speed data cable. There's many issues
7 that I just haven't prepared a list
8 and a recipe or a procedure for today
9 to talk about.

10 Q. (BY MR. HOEHNER) You can't
11 identify any of the mechanical and electrical
12 properties that one would consider in
13 designing a high speed communications cable
14 today; is that what you're saying?

15 MR. KOHLHEPP: Object to form.

16 THE WITNESS: Well, it depends
17 on what the requirements are. So I
18 don't know the requirements with which
19 to -- to try to evaluate. There's
20 lots of requirements and it's hard to
21 list all of them in any kind of sense
22 of order. I'm not prepared to go over

1 an instruction manual on how to design
2 cables today.

3 Q. (BY MR. HOEHNER) You're the
4 one that used the word "requirements," so I'm
5 trying to understand what you mean by the
6 word "requirements." You mentioned
7 mechanical requirements and electrical
8 requirements, and I'm trying to understand
9 what you mean by those.

10 So the question is what do you
11 mean by electrical requirements?

12 A. To the declaration I'm talking
13 about and covering today in this deposition.
14 I have dealt with the requirements and the
15 design appropriate to this particular IPR and
16 I have expressed my opinion on those, have
17 prepared those opinions.

18 And so I'll just say that
19 trying to go off into some hypothetical kind
20 of situation is not relevant to trying to
21 explain my position and opinions that I have
22 provided for you in the document.

1 Q. With all due respect, it's not
2 your position to determine what's relevant
3 today. You're here to answer my questions
4 and I believe it's relevant to this
5 proceeding and your experience as an expert.

6 So my question is whether you
7 can or cannot identify what types of
8 electrical performance requirements are
9 required to design high speed communications
10 cable.

11 A. It's a very broad subject that
12 I don't know how to answer. And I do know
13 that I have explained some of those
14 requirements and design issues in my
15 declarations that -- that are related to our
16 discussions today.

17 So indeed I have provided those
18 in the declarations that pertain to the
19 declaration and the subject matter.

20 Q. So, to be clear, you're not
21 going to identify any electrical or
22 mechanical performance requirements necessary

1 to design a high speed communications cable?

2 MR. KOHLHEPP: Object to form.

3 THE WITNESS: On an ad hoc
4 basis with no guidelines, I don't know
5 how to do that. I have done so
6 regarding the declaration and the
7 content and my opinions.

8 Q. (BY MR. HOEHNER) Have you ever
9 designed a high speed communications cable
10 that worked according to specifications on
11 the first try?

12 A. I don't remember if that
13 happened or not. It may have, it may not
14 have. I don't know.

15 Q. Is it more typical for a newly
16 designed high speed communications cable to
17 work as designed on the first try or not, in
18 your experience?

19 A. Again, it's a very broad
20 generalization. I don't know how to answer
21 that question. I understand the question. I
22 don't know how to answer it.

1 Q. Why don't you don't know how to
2 answer it?

3 A. The question is very general,
4 rather vague as far as what means -- meets
5 requirements or not or successful or not. I
6 just don't see such a question that is simple
7 to answer or have immediate recall of all of
8 the cables I might have designed over the 40
9 years. So I just don't know how to answer
10 that question at this point.

11 Q. In your 40 years, you say you
12 have designed high speed communications
13 cables according to various electrical and
14 mechanical design specifications, correct?

15 A. Yes, I have done that.

16 Q. And the question is kind of
17 simple. Is it more typical for a newly
18 designed high speed communications cable to
19 work as designed (Zoom interference) --

20 MR. KOHLHEPP: Objection, asked
21 and answered.

22 THE REPORTER: Did it cut out?

1 THE WITNESS: I'm still here.

2 THE REPORTER: Okay.

3 Somehow -- mine said my internet was
4 unstable. I just have, "Is it more
5 typical for a newly designed high
6 speed communications cable to work
7 as ..."

8 Can you hear me?

9 MR. HOEHNER: According to --
10 sure. According to -- let's start
11 over since it got off on the Internet
12 there.

13 Q. (BY MR. HOEHNER) The question
14 was simple. Is it more typical for a newly
15 designed high speed communications cable to
16 work according to mechanical and electrical
17 design specifications on the first try or
18 not?

19 MR. KOHLHEPP: Objection, asked
20 and answered.

21 THE WITNESS: I don't
22 understand. There is a lot of things

1 that would go into that. I don't know
2 how to recall all of those things, I
3 don't know how to ask what I perceive
4 as a very general question with a lot
5 of specifics.

6 I'm going to go back to say
7 that I have opinions based upon my
8 experience that would include design
9 issues pertinent to the case that's in
10 my declaration, and so that's what I
11 came prepared to discuss and describe.

12 Q. (BY MR. HOEHNER) You can't
13 tell me, sitting here today, whether it's
14 more typical or not for a newly designed
15 communications cable to work on the first try
16 or not?

17 MR. KOHLHEPP: Objection, asked
18 and answered.

19 THE WITNESS: Once again, I
20 came prepared to talk about the
21 declarations and the evaluations and
22 opinions in that declaration.

1 The questions you ask seem to
2 me rather nebulous and require a lot
3 of recall that I don't have and I
4 wasn't expecting that kind of recall
5 to happen today. So I just don't have
6 the information with which to answer
7 your question at this time.

8 Q. (BY MR. HOEHNER) Is designing
9 a high speed communications cable an
10 iterative process?

11 A. I did not understand the
12 question. Can you repeat it, please? The
13 words got together.

14 Q. Is designing a high speed
15 communications cable an iterative process?

16 A. It could be iterative, it could
17 not be iterative. It's indeterminate.

18 Q. What's your understanding of
19 "iterative"?

20 A. Excuse me?

21 Q. What's your understanding of
22 "iterative"?

1 A. I'm going to go back to I'm
2 being asked questions about iterative and
3 things like that that I was not prepared for
4 in this declaration to review the opinions I
5 have about the matters in this case.

6 Q. You are an expert in high speed
7 communications cables, correct?

8 A. I have the experience as
9 outlined in the -- in the proceedings about
10 what would make someone -- someone skilled in
11 the art.

12 Q. You have designed high speed
13 communications cables, correct?

14 THE REPORTER: It cut out at
15 the beginning of your question.

16 Q. (BY MR. HOEHNER) You have
17 designed high speed communications cables,
18 correct?

19 A. I have done that, yes.

20 Q. So my question is, when you
21 design a high speed communications cable and
22 you develop it as a prototype or as a

1 production model, is that an iterative
2 process or does your design get implemented
3 and it works the first time?

4 A. My answer to the question is
5 similar to the view that maybe it's iterative
6 and maybe it's not. It depends on the
7 situation.

8 Again, I don't quite know --
9 I'm trying to answer the questions, but they
10 are very general and very hypothetical,
11 asking for lots of recall that I have not
12 been prepared to discuss at this point.

13 So, again, I have a declaration
14 of my opinions that describes what -- in
15 fact, it's my opinions that I have expressed
16 and I'm prepared to talk about that today.

17 Q. I'm asking about your
18 experience as an expert in designing high
19 speed communications cables.

20 My question is, when you're
21 designing a cable is it an iterative process
22 whereby you come up with a design, you build

1 a prototype, find things out about that
2 prototype, make some changes to the design,
3 you rebuild the prototype, et cetera? Is
4 that the normal process for designing and
5 building a high speed communications cable?

6 MR. KOHLHEPP: Object to form.

7 Also asked and answered.

8 THE WITNESS: In your question,
9 you did amplify and explain a little
10 bit what you mean by "iterative."
11 Sometimes it goes where you make
12 various prototypes, sometimes it
13 doesn't work that way, sometimes you
14 just do a small change.

15 Once again, I could get into
16 hypotheticals and -- and be somewhat
17 generic, but I think unhelpful because
18 I just don't have the background -- I
19 don't have the recall of all of the
20 examples at hand, the things that
21 you're asking for to say what's
22 typical or not typical, and that's not

1 what I'm prepared here to do today.

2 I'm prepared to go over the
3 declaration and the information in
4 that declaration and that's what I
5 have prepared for.

6 Q. (BY MR. HOEHNER) Would you say
7 there is trial and error involved in
8 designing a high speed communications cable?

9 MR. KOHLHEPP: Object to form.

10 THE WITNESS: Do you mean by
11 trial and error, meaning another word
12 for iterative?

13 Q. (BY MR. HOEHNER) By trial and
14 error, I mean you develop a design, you build
15 a prototype, it doesn't work, you go back to
16 your design, you make changes, you rebuild
17 the prototype and try again.

18 Does designing and building a
19 high speed communications cable involve some
20 of that trial and error?

21 MR. KOHLHEPP: Objection, asked
22 and answered.

1 THE WITNESS: I just answered
2 that question. I said sometimes it's
3 iterative, sometimes it's not. It
4 depends on the situation.

5 Q. (BY MR. HOEHNER) How do you
6 determine whether a particular high speed
7 communications cable is performing to
8 specification?

9 A. High speed data communication
10 cables have certain requirements that they're
11 trying to meet, whatever they may be. You
12 try to assess whether or not they perform to
13 those requirements.

14 And given the context here,
15 it's about as specific as I know how to do
16 because -- in the face of a very
17 hypothetical, very open-ended question about
18 such subjects.

19 Q. How do you assess whether a
20 particular high speed communications cable
21 meets requirements?

22 MR. KOHLHEPP: Objection, asked

1 and answered.

2 THE WITNESS: I do think I
3 answered the question that you look at
4 requirements, you try to understand
5 the requirements and how the cable
6 performs and make an assessment.

7 Q. (BY MR. HOEHNER) My question
8 was how do you make that assessment? What's
9 involved in making that assessment?

10 MR. KOHLHEPP: Objection, asked
11 and answered.

12 THE WITNESS: You look to make
13 the assessment, you look at the
14 requirements, what your -- what your
15 objectives are with the requirements
16 and you look at how it does, how it
17 performs.

18 Q. (BY MR. HOEHNER) You say "how
19 it performs." Do you have to set up a test
20 scenario and take measurements of the
21 particular criteria you're interested in
22 confirming?

1 MR. KOHLHEPP: Objection, asked
2 and answered.

3 THE WITNESS: You have --
4 you're looking at the requirements,
5 you try to assess those requirements
6 by whatever means you have
7 appropriate, and you conduct those
8 assessments and determine what you
9 have against what you're looking for.

10 Q. (BY MR. HOEHNER) That doesn't
11 answer my question at all.

12 My question was do you have to
13 set up a test scenario and take measurements
14 of the particular criteria you're interested
15 in confirming in that particular high speed
16 communications cable?

17 MR. KOHLHEPP: Objection, asked
18 and answered, vague.

19 THE WITNESS: Depending on the
20 requirements, there might be some
21 measurements you need to do. Once
22 again, hypothetical, general --

1 general review. I have experience in
2 this area and -- that meet those
3 requirements, but I'm being asked
4 questions I was not prepared to answer
5 today.

6 Q. (BY MR. HOEHNER) Same thing
7 with electrical characteristics and
8 requirements for a high speed communications
9 cable, do you need to take measurements to
10 confirm whether or not that cable performs to
11 specifications?

12 MR. KOHLHEPP: Objection,
13 vague.

14 THE WITNESS: So for electrical
15 parameters, there would be
16 measurements potentially needing to be
17 made.

18 Q. (BY MR. HOEHNER) You say
19 "potentially." How else would you assess
20 electrical -- whether a particular high speed
21 communications cable is performing to the
22 required electrical specifications?

1 A. That's a very open-ended
2 question, very vague and general. Once
3 again, I'm here to talk about the opinions I
4 have in the declaration. I have given that
5 some consideration. Within those I talk
6 about various requirements of the cables,
7 performance issues of the cable designs, and
8 I have done so in the context of the matter
9 at hand.

10 The questions you ask are very
11 vague and -- and difficult to answer,
12 requiring recall and other information that I
13 was not prepared to provide today. So I'm
14 doing what I can to answer your questions,
15 but they are very vague, open-ended and, to
16 me, very indistinct as far as how to answer
17 them.

18 Q. I think the question is very
19 simple. I'm asking how one assesses the
20 electrical properties of a high speed
21 communications cable and whether those
22 properties adhere to design specifications.

1 And my question is, do you need
2 to take measurements of those electrical
3 properties in order to confirm whether they
4 adhere to design specifications?

5 MR. KOHLHEPP: Objection, asked
6 and answered, vague.

7 THE WITNESS: Well, certainly
8 in designing a cable, there are
9 certainly objectives you have under
10 design, you would need to take
11 measurements to determine the -- are
12 you still with me? Can you hear me?

13 THE REPORTER: What happened?

14 THE WITNESS: I'm not sure. I
15 got a little ding on my computer and I
16 got the impression I was not being
17 heard anymore.

18 (Discussion off the record)

19 Q. (BY MR. HOEHNER) Can you hear
20 me now, Mr. Cornelison?

21 A. Yes, I can hear you now. It
22 does seem to be a bit better.

1 Q. Okay. So let's go back on the
2 record and retry that question.

3 MR. HOEHNER: The question --
4 actually, can you please read it back
5 into the record?

6 THE REPORTER: Okay. Let me
7 see.

8 (The requested testimony was
9 read back)

10 Q. (BY MR. HOEHNER) Let's go back
11 and I'll reread the question.

12 What I'm asking is how does one
13 assess the electrical properties of a high
14 speed communications cable and whether those
15 properties adhere to specification.

16 And my question is do you need
17 to take measurements of those electrical
18 properties in order to confirm that they
19 adhere to design specifications?

20 MR. KOHLHEPP: Objection, asked
21 and answered. Also vague.

22 THE WITNESS: Yes, measurements

1 would be taken where appropriate,
2 depending on the situation at hand,
3 the kind of requirements that you
4 have.

5 Q. (BY MR. HOEHNER) I'm sorry, I
6 didn't quite understand the end of your --

7 A. Depending on the requirements
8 that you have.

9 Q. Okay. So depending on the
10 requirements you have, you need to measure
11 those properties to determine whether they
12 adhere to those design specifications,
13 correct?

14 A. Yes.

15 MR. KOHLHEPP: Object to form.

16 Q. (BY MR. HOEHNER) So changing
17 gears, are you aware of any industry
18 standards relating to high speed
19 communication cables in the late 1960s
20 timeframe that required the use of twisted
21 pairs?

22 THE REPORTER: The use of?

1 MR. HOEHNER: Twisted pairs.

2 THE REPORTER: Okay.

3 THE WITNESS: And the timeframe

4 I believe you said, Tom, was late

5 '60s?

6 Q. (BY MR. HOEHNER) Correct.

7 A. I am aware of some of those

8 particular AT&T documents, which I -- I am

9 aware of those, Tom. I have not looked at

10 those in particular recently. I have

11 indeed -- as you know, I have references to

12 documents I believe dated in the '90s, and --

13 but I am aware of documents that go back to

14 the '60s.

15 Q. Can you identify them today,

16 which documents in the late 1960s you're

17 aware of?

18 A. I cannot identify those

19 directly.

20 Q. And you didn't cite those

21 documents in your declarations in these IPRs,

22 did you?

1 A. I believe that's the case. I
2 would certainly go back to my declaration and
3 I could explain to you exactly what I did
4 cite.

5 Q. If we could bring up Exhibit
6 1081, which is entitled Expert Declaration of
7 Kenneth Cornelison in Support of Petitioner
8 Reply.

9 Mr. Cornelison, feel free to
10 locate that document in the material I sent.

11 MR. KOHLHEPP: Would you also
12 like to mark this?

13 MR. HOEHNER: It's actually
14 marked already. It's Exhibit 1081.
15 The exhibits we're using today have
16 already been marked in these
17 proceedings.

18 MR. KOHLHEPP: Understood,
19 thank you.

20 THE WITNESS: Tom, the pause
21 here was I did not notice that the
22 1080 and 1081 was clipped together.

1 So I was thinking I just had the 1080.

2 It took me a second to figure out they
3 were both together.

4 Q. (BY MR. HOEHNER) No problem.

5 And can you please -- well,
6 first, do you recognize this document,
7 Exhibit 1081?

8 A. Yes, I do recognize the
9 document.

10 Q. Is this the declaration you
11 prepared in this -- in IPR2023-0162 -- 01062?

12 A. Yes, it is.

13 Q. Can you turn to Paragraph 10 on
14 Page 4 of Exhibit 1081?

15 A. We will be talking about the
16 small fours and the small numbers in this
17 case?

18 Q. Yes. It will be marked Page 6,
19 which is Page 4 of the document.

20 A. Okay. I have turned to that
21 page.

22 Q. And do you see Paragraph 10?

1 A. Yes, I do.

2 Q. And you state, "I also
3 understand that Dr. Eldering has proposed th
4 a construction for twisted pair insulated
5 conductors to be two insulated conductors
6 twisted together around one another to form a
7 balanced transmission line."

8 And it goes on, "This proposed
9 construction is not inconsistent with the
10 ordinary meaning of a 'twisted pair of
11 insulated conductors' at the relevant time."

12 Do you see that?

13 A. Yes, I do.

14 Q. And so you agree with
15 Dr. Eldering's proposed construction of
16 twisted pairs, correct?

17 MR. KOHLHEPP: Object to form.

18 THE WITNESS: I say -- well,
19 what I say is -- use the double
20 negative "not inconsistent." I would
21 say that, yes, I see that the two
22 definitions would be consistent with

1 each other and -- they would be
2 consistent with each other, yes.

3 Q. (BY MR. HOEHNER) So you agree
4 with Dr. Eldering's proposed construction of
5 twisted pairs, correct?

6 A. I go on to Paragraph 11, which
7 I think is of note, which is that my opinions
8 do not change and would not change whether or
9 not -- whether one or the other definition is
10 applied.

11 Q. That doesn't answer my
12 question, which is do you agree with
13 Dr. Eldering's proposed construction of
14 twisted pairs?

15 A. Well, what I say is in the,
16 declaration, and the declaration says that I
17 believe that the definitions are consistent
18 with each other. And I also say that the --
19 my opinions do not change and would not
20 change whether one or the other definitions
21 applied.

22 Q. So there are two definitions

1 you refer to here in Paragraphs 9 and 10 of
2 your declaration. One is a pair of insulated
3 conductors that are twisted together in
4 Paragraph 9, and the other is two insulated
5 conductors twisted together around one
6 another to form a balanced transmission.

7 A. Yes.

8 Q. In Paragraph 10, you're saying
9 that the definition in Paragraph 10 is
10 consistent with the definition in Paragraph
11 9, correct?

12 A. Yes, I do.

13 Q. And you agree that the
14 definition in Paragraph 9 is the ordinary
15 meaning of the term "twisted pairs," correct?

16 A. I was looking at the document.
17 I think I lost -- lost your question. Can
18 you please repeat it, please, Tom?

19 (Requested testimony read)

20 Q. My question is in Paragraph 9,
21 you agree that the ordinary meaning of
22 "twisted pairs" is a pair of insulated

1 conductors that are twisted together,
2 correct?

3 A. Yes, that's what I say in
4 Paragraph 9, yes.

5 Q. And in Paragraph 10, you say
6 that Dr. Eldering's proposed construction is
7 consistent with the proposed construction in
8 Paragraph 9, correct?

9 A. Yes, I do.

10 Q. So you agree that
11 Dr. Eldering's proposed construction is
12 consistent with the ordinary meaning of the
13 term "twisted pairs," correct?

14 A. What I say is that my opinions
15 do not change whether one or the other
16 definition is applied. And I say they are
17 consistent and I say my opinion would not
18 change whichever definition. That's what I
19 say.

20 Q. So do you or do you not agree
21 with Dr. Eldering's proposed construction?

22 A. Paragraph 11 states, and I

1 reiterate this comment, this paragraph, that
2 my opinions will not change whether one or
3 the other definitions is applied. I also say
4 they are consistent.

5 So I really -- I have indeed
6 spoken to the two definitions. I have
7 explained that they are consistent with one
8 another and I have also explained and
9 reassert that my opinions will not change
10 whether one or the other definitions be
11 applied.

12 Q. Do you or do you not agree with
13 Dr. Eldering's proposed construction as you
14 state in Paragraph 10?

15 MR. KOHLHEPP: Objection, asked
16 and answered.

17 THE WITNESS: I have noted in
18 Paragraph 9 there is a definition. I
19 have noted in Paragraph 10 there is
20 another definition. I said they are
21 consistent and -- for this case and my
22 opinions would -- do not change or

1 would not change whether one or the
2 other definitions should be applied.
3 That's what I have and that's what I
4 said.

5 Q. (BY MR. HOEHNER) Is there any
6 difference between the proposed construction
7 in Paragraph 9 and Dr. Eldering's proposed
8 construction in Paragraph 10?

9 A. Paragraph 10 has more words in
10 it. That would be one difference. I'm not
11 sure that's the answer you're looking for,
12 but -- so I'm just trying to answer the
13 question you asked.

14 Q. And what words are different?

15 A. The difference I see is that
16 Eldering adds the words "to form a balanced
17 transmission line."

18 Q. And do the words "to form a
19 balanced transmission line" have meaning to
20 you?

21 A. Well, I do understand balanced
22 transmission line and I do believe -- I do

1 understand and explain in the declaration
2 that they are constructed from two insulated
3 conductors twisted around one another.

4 Q. And do the words "to form a
5 balanced transmission line" change the
6 proposed construction in Paragraph 10 from
7 that of Paragraph 9 in any way, in your
8 opinion?

9 A. We'll come back to my
10 declaration. I explain one definition for
11 "twisted pair" and Eldering has it slightly
12 different with more words in it talking about
13 the balanced transmission line.

14 And I come back to say my -- I
15 understand there are two definitions here,
16 some differences, but my opinions would not
17 change in this case whether or not one or the
18 other definition was applied.

19 Q. So the words "to form a
20 balanced transmission line" have no meaning
21 in the construction in Paragraph 10?

22 A. Well, there are words there

1 that denote meaning, they exist, I see that.

2 But, once again, I explain that

3 in Paragraph 9, there is one definition.

4 Paragraph 10, there is another definition.

5 And I go on to say that my opinion would not

6 change whether one or the other definitions

7 applied.

8 Q. So which construction did you

9 apply in your analysis?

10 A. It did not matter.

11 Q. Did you apply one or the other

12 in conducting your analysis?

13 A. No. I -- they are consistent

14 with each other and my opinion would not

15 change whether or not one or the other

16 definition would be applied.

17 Q. Under the construction in

18 Paragraph 9, if I take two wires and twist

19 them up like a ball of yarn, would the

20 resulting ball of wires be a twisted pair

21 under the construction in Paragraph 9?

22 MR. KOHLHEPP: Objection, form

1 and scope.

2 THE WITNESS: I didn't have to
3 deal with a question about a ball of
4 yarn in my declaration. I was dealing
5 with specific cable designs described
6 in the patents and the -- and other
7 art here. So I applied -- given that
8 scope, then when I applied the
9 definitions in nine or ten, it would
10 not have changed my opinion.

11 Q. (BY MR. HOEHNER) Okay. Let's
12 try and answer the question I actually asked,
13 which is if I have two copper wire
14 conductors, insulated copper wire conductors,
15 and I wrap them together, twist them together
16 like a ball of yarn, would that result in a
17 twisted pair according to the construction in
18 Paragraph 9?

19 MR. KOHLHEPP: Objection, form
20 and scope.

21 THE WITNESS: I have really not
22 considered about wires, twisted pairs

1 and a ball of yarn. I have not
2 thought about that or have an opinion
3 about that.

4 What I have an opinion on is in
5 the context of the art here in the
6 IPRs and the types of cables and
7 the -- what I'm talking about is that
8 the ball of yarn never occurs and I
9 haven't thought about that to occur.

10 And the two definitions would
11 be consistent and would -- and, as I
12 said, would not change my opinion
13 whether one or the other definition is
14 used.

15 Q. (BY MR. HOEHNER) So it's your
16 opinion under oath today that you can't
17 answer the question as to whether those two
18 conductors, if wrapped together like a ball
19 of yarn, would form a twisted pair; is that
20 correct?

21 MR. KOHLHEPP: Objection, asked
22 and answered.

1 THE WITNESS: It's hypothetical
2 and I don't know how to answer it.
3 Not that I'm refusing to answer it. I
4 just don't know how to answer such a
5 hypothetical question.

6 Q. (BY MR. HOEHNER) Well, you
7 answered the question with regard to a lot of
8 the references in this case, right?

9 It's a pretty simple scenario
10 here. I have two straight line wires that I
11 wind together and twist them together like a
12 ball of yarn. Would that form a twisted pair
13 under your proposed construction in Paragraph
14 9?

15 If you can't answer the
16 question you can't answer the question, but I
17 just want to get that on the record.

18 MR. KOHLHEPP: Objection,
19 scope. Also, asked and answered.

20 THE WITNESS: I'm dealing with
21 the definition in the context of the
22 art and that I discuss in this

1 declaration. So I don't have any
2 situation where I have to understand
3 whether a ball of yarn of twisted
4 conductors is whatever.

5 So I'm dealing with cables, I'm
6 dealing with cable constructions as
7 defined and outlined in the IPR. I do
8 see it as kind of a hypothetical
9 question, and a ball of yarn just
10 isn't part of what I'm providing --
11 for which I'm providing opinions.

12 Q. (BY MR. HOEHNER) So you can't
13 answer my question?

14 A. Because I don't know how.

15 Q. What would you need to know to
16 answer the question?

17 MR. KOHLHEPP: Object to form,
18 scope.

19 THE WITNESS: I don't know what
20 I would need at this point. I have
21 not considered that as an opinion yet.

22 Q. (BY MR. HOEHNER) Well, the

1 definition you propose here in Paragraph 9 is
2 a pair of insulated conductors that are
3 twisted together.

4 In that ball of wires that's
5 formed by two insulated conductors, are those
6 wires twisted together?

7 MR. KOHLHEPP: Object to form,
8 scope, asked and answered.

9 THE WITNESS: The definition
10 of -- I have in Paragraph 9 is applied
11 to the art of which I talk about in my
12 declarations.

13 With that, Eldering's
14 definition is consistent with mine.
15 And, again, it would not -- my opinion
16 would not change whether or not
17 whichever definition was applied.

18 So the ball of yarn kind of
19 question I believe is outside the
20 scope of the type of technology and
21 the type of cables and the type of
22 opinions I'm applying here. And I

1 indeed am saying -- am saying that
2 these two definitions are consistent
3 with each other such that they would
4 not change my opinion either way.

5 Q. (BY MR. HOEHNER) So if I take
6 two insulated conductors and wrap them
7 together into a ball, are those conductors
8 twisted together?

9 MR. KOHLHEPP: Objection,
10 scope.

11 THE WITNESS: I haven't had to
12 deal with conductors in a ball and
13 I -- it certainly does not come up in
14 the IPR and the evaluation and
15 formation of my opinions. I'm just
16 not prepared to provide an opinion on
17 something outside the scope of what
18 I'm talking about in the IPRs and the
19 type of cables and the type of
20 opinions that I have.

21 Q. (BY MR. HOEHNER) Actually,
22 you're just refusing to answer my question,

1 which is a very simple question.

2 If I have two insulated
3 conductors and I wrap them together, are they
4 two conductors that are twisted together?

5 MR. KOHLHEPP: Objection,
6 scope.

7 THE WITNESS: You used the term
8 refusing to answer the question. I
9 don't think -- I don't see it as
10 refusing to answer the question.

11 It is a hypothetical type of
12 question about a ball of conductors
13 that is not part of the IPR or the
14 technology at issue in these IPRs.
15 It's just outside the scope of what
16 I'm prepared to talk about and I
17 haven't formed an opinion about that
18 yet.

19 I have explained in writing and
20 several times here in answers that the
21 two definitions are consistent with
22 each other and that my opinions would

1 not change whether or not one
2 definition or the other was applied.

3 Q. (BY MR. HOEHNER) Okay. So
4 you're stating -- your testimony today is
5 that you can't answer whether if I take two
6 insulated conductors and wrap them together,
7 whether those would be twisted together; is
8 that correct?

9 MR. KOHLHEPP: Objection, asked
10 and answered.

11 Counsel, he has answered your
12 question about five times here.

13 MR. HOEHNER: No, he has
14 actually not answered my question at
15 all. He's avoiding my question.

16 MR. KOHLHEPP: He has given you
17 an answer. It's right there.

18 MR. HOEHNER: It's not the
19 answer to the question I'm asking.
20 And we -- counsel, I don't need your
21 commentary. You can object to form
22 and that's about it. Have the witness

1 testify today.

2 Q. (BY MR. HOEHNER) So counsel
3 interrupted with his objection, his speaking
4 objection.

5 But I'll go back and say, so
6 you're stating today, your testimony is that
7 you can't answer whether or not if I have two
8 insulated conductors and I wrap them into a
9 ball, whether those are twisted together?

10 MR. KOHLHEPP: Same objection,
11 scope.

12 THE WITNESS: What I can say is
13 what's in Paragraphs 9, 10, and 11,
14 and that the scope of the art here I'm
15 talking about are conductors in a
16 cable, not twisted around each other.
17 I'm prepared to talk about that and
18 provide opinions about that and
19 explain my opinions about that.

20 I don't have an opinion about
21 conductors in a ball in the context of
22 -- I just don't have an opinion about the

1 conductors in a ball. I do have an opinion
2 about those definitions, each definition as
3 applied to the art here, and acknowledge and
4 say that my opinions will not change
5 whichever definition was used.

6 Q. (BY MR. HOEHNER) And you
7 repeat that you don't have an opinion about
8 conductors wrapped into a ball, and so you
9 can't answer the question, correct?

10 A. Yes, I have no opinion.
11 Therefore, I can't answer -- I don't know how
12 to answer the question.

13 Q. In the definition -- or the
14 construction in Paragraph 9, what do the
15 words "twisted together" mean to you?

16 A. I have -- within the
17 declarations, I have -- I do address and
18 provide examples of what that would mean. I
19 would prefer to -- well, not prefer, I really
20 need to follow the -- describe my
21 declaration, which, in my view, does answer
22 your question what the twisted pairs are, the

1 wires twisted together, what they are,
2 particularly in the context of the art here.

3 Q. I'm not following your answer.

4 What do the words "twisted
5 together" mean in the construction of a pair
6 of insulated conductors that are twisted
7 together?

8 A. Well, what they mean is what I
9 said in the -- in the Paragraph 9 in words.
10 And what I'm trying to say is that there are
11 examples that I talk about in the documents,
12 in the reference documents that would, if
13 need be, describe what I mean in different
14 forms, if you're looking for a different form
15 of explanation.

16 But I have described twisted
17 pair of insulated conductors, which is a pair
18 of insulated conductors that are twisted
19 together.

20 Q. I'm asking you to describe what
21 do you mean by "twisted together"?

22 A. I believe I can do that in the

1 context of the information in the IPR that I
2 have provided or the declaration I have
3 provided.

4 Q. So the proposed definition in
5 Paragraph 9 only applies to art that's in
6 your declaration?

7 A. I did not say that. I said I
8 had examples that are in this -- in the
9 declarations that would provide examples of
10 such a definition, but the definition is the
11 words on Paragraph 9.

12 Q. And so you can't explain to me
13 the words, what you mean by "twisted
14 together," sitting here today?

15 A. I came prepared to provide a
16 definition -- in Paragraph 9, I did indeed
17 provide a definition, described what -- a
18 pair of insulated conductors that are twisted
19 together, and I'm talking about certain
20 particular patents, et cetera, and I can talk
21 about the context of what "twisted together"
22 means in those.

1 And I -- looking through
2 quickly, I have both words that I have
3 written and also references to other
4 documents that describe such twisted pairs in
5 the context of the -- of the declaration.

6 So I can -- rather than go off
7 ad hoc and off the cuff, I have things I
8 prepared that would answer your question much
9 more specifically and I think artfully
10 because they are thought through and describe
11 what I'm talking about in the context of
12 these -- of this declaration.

13 Q. Well, you state right here in
14 Paragraph 9 that twisted pairs are ubiquitous
15 in the communications cable prior art, right?

16 A. Yes.

17 Q. So it's a common term in the
18 communications art, correct?

19 A. Yes.

20 Q. And you propose a construction
21 here that says a pair of insulated conductors
22 that are twisted together, right?

1 A. Yes, I do.

2 Q. But you can't explain to me
3 now, sitting here today under oath, what
4 "twisted together" means, other than point me
5 to your declaration? Is that what you're
6 saying?

7 A. Well, I see that as a
8 misrepresentation of my previous answer where
9 I described that there are various examples
10 in my declaration where I either talk about
11 twisted pairs in the context of the patents,
12 and also where I cite several references that
13 describe twisted pairs in the context of what
14 I have here as well.

15 Q. When you say "twisted
16 together," is there a particular type of
17 twisting that you're referring to in your
18 proposed construction here in Paragraph 9?

19 A. Once again, in the context of
20 the declaration and the information here, I
21 can provide examples and other details that
22 would be within the declaration and also

1 external -- external reference documents to
2 describe actually what I'm talking about.
3 They are both in pictorial as well as text
4 form.

5 Q. So you're saying that the
6 twisting has to be a particular type of
7 twisting that only by looking at those
8 references you can explain?

9 A. No, I'm saying that I could put
10 some words ad hoc together, memory or
11 whatever, and I think it's much more clear to
12 -- for you to understand what I mean by
13 twisted pair, twisted together, et cetera,
14 rather than off-the-cuff answer, I have given
15 that some thought and I have references that
16 describe that in some detail that are in the
17 declarations.

18 Q. Well, because it's unclear,
19 that's why I'm asking you questions today
20 that I need you to answer today because,
21 frankly, I don't understand your position on
22 twisted pairs from reading your declarations.

1 And my question is pretty
2 simple. I'm just asking what you mean by
3 "twisted" in the sentence -- or the phrase,
4 "pair of insulated conductors that are
5 twisted together."

6 And my question is what does
7 "twisted" mean in that context?

8 A. Once again, I do not know how
9 to answer that question exactly. I could,
10 like I said, go ad hoc things, or whatever.
11 The -- I do really have to go back to the
12 declaration where I have a definition in
13 Paragraph 9, there is one in ten. I'm aware
14 of both definitions, and my opinions in this
15 case do not depend upon which one I would
16 use.

17 Q. Okay. That doesn't answer the
18 question again.

19 And it's your position today
20 that in the phrase "a pair of insulated
21 conductors that are twisted together" that
22 any type of twisting would suffice between

1 those two insulated conductors. Twisting
2 doesn't have any specific meaning or does it
3 have specific meaning?

4 MR. KOHLHEPP: Object to form.

5 THE WITNESS: Well, then you
6 said -- you asked me if it was any
7 type of twisting, and I did answer
8 that it depends on the context of the
9 patents and the definitions and the
10 art, which means I'm not prepared to
11 describe a ball of wires.

12 So I do apply that definition
13 in nine, the definition in ten and
14 back to Paragraph 11. My opinions
15 don't change either way and based on
16 the context and the content of the
17 materials and the two declarations.

18 Q. (BY MR. HOEHNER) So it's your
19 opinion today that -- or strike that.

20 You can't answer today whether
21 or not the twisting that you identified in
22 Paragraph 9 is a particular type of twisting

1 or not?

2 MR. KOHLHEPP: Object to form.

3 THE WITNESS: I believe I

4 answered your question because the

5 twisted together is not a ball.

6 In this case I have the context

7 of the patents, I have explained that

8 it doesn't matter whether the

9 definition in Paragraph 9 or 10 is

10 chosen. They are consistent with each

11 other for this effort here, and so my

12 opinions do not change.

13 And looking for descriptions --

14 descriptions or explanations of

15 twisted pair, I do get into that in

16 the context of the declaration in

17 several places. And so I would rather

18 deal with your questions about what

19 twisted pair is, et cetera, by going

20 through the IPR, and particularly in

21 the context of the matters at hand in

22 the declarations.

1 Q. (BY MR. HOEHNER) Well, let's
2 go back to the definition of "construction"
3 in Paragraph 10 then, which is two insulated
4 conductors twisted together or around one
5 another to form a balanced transmission.

6 What do the words "to form a
7 balanced transmission line" mean to you?

8 MR. KOHLHEPP: Object to form.

9 THE WITNESS: A balanced
10 transmission line is -- I do mention
11 this a little in some form in the
12 declarations, where it's a -- the two
13 insulated conductors form -- carry
14 equal and opposite signals and -- and
15 they are twisted together to form --
16 to provide consistent spacing, which
17 is the same as in the definition in
18 nine, in Paragraph 9.

19 And the balanced transmission
20 line would be the transmission line
21 formed by those two conductors spaced
22 because the -- the -- the proximity

1 caused by the twisting together.

2 Q. (BY MR. HOEHNER) And the
3 construction in Paragraph 10 says "twisted
4 together around one another."

5 What does that mean to you?

6 A. What it says, that the two
7 wires would be twisted together around one
8 another.

9 Q. How do the twisting together
10 around one another form a balanced
11 transmission?

12 A. The two insulated conductors
13 twist around one another. They do talk about
14 in some of the art that goes into some length
15 about why they would be twisted together. I
16 have some diagrams about balanced
17 transmission mode where the wires are twisted
18 around each other in the IPR where, as I
19 said, the definition Paragraph 9 and 10 both
20 would be consistent with each other and would
21 not change my opinions.

22 So I do actually have some --

1 some material in my declarations that would
2 tend to explain this in more detail, if you
3 wish. But right now, all we have is a
4 definition and the definition is the
5 definition we have here in Paragraph 10.

6 Q. So in the construction in
7 Paragraph 9 where you say "twisted together,"
8 you mean the same as in Paragraph 10, that
9 they are twisted together or around one
10 another, correct?

11 A. No, Paragraph 9 is nine, ten is
12 ten. And -- but my opinions will not change
13 whether one or the other definition is
14 applied.

15 Q. So there is no difference to
16 you between being twisted together or being
17 twisted together around one another; is that
18 correct?

19 A. For this declaration and the
20 art, my opinions would not change whether or
21 not one or the other definition was applied.

22 Q. So you don't see a difference

1 between being twisted together or being
2 twisted together around one another; is that
3 correct?

4 A. I have expressed my opinions
5 and described what is here so far in this
6 case about claimed construction. There is
7 one in nine, there is one in ten for a term.

8 So my -- I don't see -- it is
9 my opinion that is what I have to deal with
10 and -- but I also say that my opinions would
11 not change whether or not one or the other of
12 those definitions is used.

13 Q. When you say your opinions
14 wouldn't change, is that because you don't
15 see a difference between being twisted
16 together or being twisted together around one
17 another in the proposed construction?

18 A. I do say, and said, in the
19 declaration that these two definitions are
20 consistent with each other.

21 And so trying to part, I'm just
22 not prepared or have an opinion about trying

1 to wordsmith one or the other term. But I do
2 know, as I state in Paragraph 11, whether one
3 or the other definition was applied, my
4 opinions would not change.

5 Q. You acknowledge that the
6 proposed construction in Paragraph 9 differs
7 from that in Paragraph 10 in the sense the
8 words "around one another to form a balanced
9 transmission line" does not appear in the
10 proposed construction in Paragraph 10,
11 correct?

12 A. That is correct.

13 Q. So I'm trying to understand why
14 you think those two constructions are the
15 same or consistent. So are you not applying
16 any meaning to the words "around one another
17 to form a balanced transmission line"?

18 A. I'm not trying to pick one or
19 the other. I'm not trying to wordsmith or
20 modify any of these claimed constructions.

21 I'm saying that it doesn't
22 matter for this -- this declaration which one

1 is used, my opinions would not change.

2 Q. Well, did you consider the
3 words "around one another to form a balanced
4 transmission line" when conducting your
5 analysis in these IPRs?

6 A. I considered Eldering's
7 proposed construction, as I have it there.
8 And I, in Paragraph 11, say my opinions would
9 not change -- do not change and would not
10 change whether or not one or the other
11 definitions applied.

12 Q. And my question is, there are a
13 whole lot more words in the proposed
14 construction Paragraph 10 than the
15 construction in Paragraph 9. When you say
16 they are consistent, I'm trying to understand
17 why you think they are consistent.

18 So what do the words "around
19 one another to form a balanced transmission
20 line" mean to you such that they are
21 consistent with the construction in Paragraph
22 9?

1 A. I did not, for the declaration
2 or here, have a proposal to change, or
3 whatever, the claimed constructions or terms,
4 whatever we're talking about here. I do say
5 they are consistent with each other. I do
6 use the term literally "not inconsistent."
7 That's a double negative. But it is
8 consistent with the ordinary meaning of
9 twisted pair conductors and it's relevant and
10 I say all of that.

11 And that I reference some
12 external documents that talks about twisting
13 pairs that are related to the art at hand.
14 And whether or not whichever definition you
15 look at, my opinions would not change whether
16 one or the other opinions applied.

17 MR. KOHLHEPP: Counsel, we have
18 been going for almost an hour and a
19 half here. Can we take a short break?

20 MR. HOEHNER: Let me finish
21 this line of questioning and we will
22 take a break for sure.

1 Q. (BY MR. HOEHNER) But I just
2 want you to answer -- you proposed or you
3 assert that these two constructions in
4 Paragraphs 9 and 10 are consistent, and I'm
5 trying to understand why you think they are
6 consistent.

7 The construction in
8 Paragraph 10 has additional words that are
9 "around one another to form a balanced
10 transmission line." I'm trying to understand
11 what -- how you interpreted those words to be
12 consistent with proposed construction in
13 Paragraph 9, which is simply twisted pair --
14 pair of insulated conductors that are twisted
15 together.

16 So what about the words "around
17 one another to form a balanced transmission
18 line" makes the proposed construction in
19 Paragraph 10 consistent with that ini
20 Paragraph 9?

21 A. Well, I do explain that a
22 little bit in Paragraph 10 where the proposed

1 construction is not inconsistent with the
2 ordinary meaning of the twisted pair of
3 insulated conductors.

4 We can go back and look at
5 Exhibit 1017, which talks about the -- the
6 construction of a twist and how it helps to
7 balance the pair. Again, read the paragraph,
8 but I talk about those things that happens in
9 twisted pairs.

10 And so I acknowledge in this
11 declaration that there is a lot of art that
12 describes twisted pairs in the context of the
13 data cables and the cables we're talking
14 about today.

15 So I'm not prepared to alter or
16 explain or modify claim constructions at this
17 point. But I'm just telling you that the --
18 either one is consistent and my opinions will
19 not change whether or not one or the other is
20 used.

21 Q. So it's your opinion that the
22 proposed constructions in Paragraphs 9 and 10

1 substantively mean the same thing?

2 A. What I say is that they are
3 consistent with each other.

4 Q. What do you mean by
5 "consistent"?

6 A. That things like Exhibit 1017,
7 I have not looked at it. I should look at
8 it, but I haven't looked at it. But I know
9 that in there are things like twisted pair
10 descriptions and twisted pair cable.

11 So the point is that they are
12 consistent because both definitions result in
13 cables and examples that are consistent and
14 also described by those various documents.

15 For instance, I reference a
16 couple of details about whether they decrease
17 unbalanced mutual capacitance in a twisted
18 form and then used with that word, "balanced
19 signal transmission required," et cetera. So
20 I can go in detail on that more better than
21 trying to do it ad hoc and off the cuff and
22 be more accurate about that.

1 But the point is they are
2 consistent with each other, and that's what I
3 said.

4 Q. So are you saying that when --
5 in Paragraph 9, where the construction reads,
6 "A pair of insulated conductors that are
7 twisted together," that that inherently means
8 that those conductors are twisted together
9 around one another to form a balanced
10 transmission line?

11 A. No, I'm not trying to change or
12 alter at this point that term. That's not
13 what I'm trying to do or accomplish.

14 I'm trying to explain that I
15 acknowledge there are two definitions that
16 are out there and explaining to you in that
17 coming up with an opinion whether --
18 whichever definition I used, I would have the
19 same opinion.

20 Q. So those definitions mean the
21 same thing to you?

22 A. There are different words

1 there. I'm not prepared to go and alter the
2 definition or describe the definition beyond
3 what I have been provided. But they are
4 consistent to me and, as I said, opinions
5 will not change whether using one or the
6 other.

7 Q. So the constructions in
8 Paragraphs 9 and 10 mean the same thing to
9 you?

10 A. I did not say that. What I say
11 in my declaration is what I said and that
12 they are consistent with each other and my
13 opinions will not change.

14 Q. I just -- I don't understand
15 what you mean by "consistent." Can you
16 explain to me what you mean by "consistent"?

17 A. "Consistent" means that whether
18 I applied the one in nine or the one in ten,
19 my opinions would not change. So, therefore,
20 they are consistent with each other.

21 Q. But you agree that the
22 definitions, the constructions in Paragraphs

1 9 and 10 are substantively different, right?

2 MR. KOHLHEPP: Object to form.

3 THE WITNESS: All I can say is
4 they are different.

5 Q. (BY MR. HOEHNER) Do they mean
6 different things?

7 MR. KOHLHEPP: Object to form.

8 THE WITNESS: Different words.

9 Q. (BY MR. HOEHNER) To you, the
10 constructions in Paragraph 9 and 10 use
11 different words, but they mean the same
12 thing?

13 A. You have gotten -- you have
14 tried to get me there several times, that
15 they mean the same thing. I have been
16 consistent because the two definitions are
17 consistent with each other. And I'm telling
18 you that for my opinion here, it doesn't --
19 my opinions would not change.

20 I'm not prepared to expand or,
21 contract, or whatever, on claim constructions
22 or these definitions, I should say, at this

1 point. I just haven't been prepared to have
2 an opinion about what one would be.

3 Q. So you're telling me the
4 constructions are consistent because the
5 results of your analysis are consistent? Is
6 that what you're saying?

7 MR. KOHLHEPP: Objection, form.

8 THE WITNESS: I think I said it
9 well in Paragraph 11.

10 Q. (BY MR. HOEHNER) But you don't
11 use the word "consistent" in Paragraph 11 and
12 you've used it a lot here today, and I'm
13 trying to understand what you mean by it.

14 And it sounds to me like what
15 you mean by consistent is that the two
16 proposed constructions in Paragraphs 9 and 10
17 are consistent because your analysis wouldn't
18 change based on either of them; is that
19 correct?

20 MR. KOHLHEPP: Object to form.

21 THE WITNESS: Well, looking at
22 the declaration, which is what I have

1 here to talk about, is that, yes,
2 there is a definition in nine and in
3 ten.

4 I do say they are not -- you
5 know, double negative there. It makes
6 sense to say "consistent."

7 The question may -- I have to
8 say this because it may perhaps --
9 since those are not the same, then
10 would somehow -- those two different
11 definitions constructions affect my
12 opinion. And what I'm saying is, no,
13 I could apply either of those and my
14 opinions would not change.

15 Q. (BY MR. HOEHNER) Right. So
16 you're saying they are consistent because
17 they wouldn't change your opinions, correct?

18 A. I'm saying they are consistent.

19 Q. Why are they consistent?

20 A. They both talk about twisted
21 pairs, two views of twisted pairs, and that
22 nine and ten are different. I'm not prepared

1 to wordsmith nine or wordsmith ten. That's
2 not what I'm trying to do here.

3 But I just keep on telling you
4 that when I form opinions and views in
5 this -- in this declaration, then whichever
6 definition I use, it would not change my
7 opinion.

8 Q. So that means, in your opinion,
9 the words "around one another to form a
10 balanced transmission line" don't have any
11 meaning in the sense that if those words
12 weren't there, you would come up with the
13 same conclusions, correct?

14 A. I think you're asking a
15 question that's based upon something outside
16 what I'm trying to say and forming a
17 conclusion or something along those lines or
18 assumption.

19 But I do say what I say. I
20 understand paragraph -- the words in nine are
21 different than the words in ten. I
22 understand that, I see that, look at it.

1 Q. But in conducting your
2 analysis, do you impart any meaning to the
3 phrase "around one another to form a balanced
4 transmission line"?

5 A. You're kind of -- a detail
6 or -- I'm disclosing in nine and ten that I
7 know about -- have a definition in nine --
8 excuse me -- and have a definition in ten. I
9 do understand they are different, which is
10 why I said in Paragraph 11 that my opinions
11 would not change.

12 Q. My question was, in conducting
13 your analysis, do you impart any meaning to
14 the phrase "around one another to form a
15 balanced transmission"? What does that
16 phrase mean to you in conducting your
17 analysis?

18 A. Well, I did answer that
19 question about two wires, and I also went on
20 to talk about some of the advantages of the
21 balanced pair in Exhibit 1017 and 1081. I've
22 done that already.

1 So, yes, I understand -- I do
2 understand that there's different words in
3 both nine and ten and applied those
4 definitions to my opinions and view of the
5 art.

6 And in the context of the art
7 here and this declaration -- the two
8 declarations, actually -- my opinions would
9 not change.

10 MR. KOHLHEPP: Counsel, we have
11 been going an hour and 40 minutes
12 here. Can we take a short break?

13 MR. HOEHNER: Let's take a
14 break.

15 THE REPORTER: Okay. Off the
16 record.

17 (Recess from 10:38 a.m. to
18 10:51 a.m.)

19 Q. (BY MR. HOEHNER) Turning back
20 to Paragraph 11 in Exhibit 1081, you state,
21 "My opinions do not change and would not
22 change whether one or the other definition is

1 applied," correct?

2 A. That is correct.

3 Q. In your declaration, do you
4 show how either construction would result in
5 the same conclusion in your analysis?

6 A. I do not.

7 Q. Are you familiar with the term
8 "unbalanced transmission system"?

9 A. I am, yes.

10 Q. And what is an unbalanced
11 transmission system?

12 A. In 1081, in Paragraph, I think,
13 27, I do have a description of what I see as
14 an unbalanced transmission.

15 Q. And have you ever designed an
16 unbalanced transmission system?

17 A. Unbalanced transmission system
18 seems to be a pretty broad view. If I take
19 it in the broad context, no, I have not
20 designed a system full of stuff that uses
21 unbalanced. I have used things like coaxial
22 cables before and those kind of things.

1 So I'm aware of what unbalanced
2 transmission is and some of the products that
3 are used to -- in that application, but I
4 don't think I have designed unbalanced
5 systems.

6 Q. Okay. Have you designed
7 transmission cables using an unbalanced
8 transmission system?

9 A. Well, I know I have done some
10 work on coaxial cables in the past, which are
11 unbalanced.

12 Q. And you have designed coaxial
13 cables used in unbalanced transmission
14 systems?

15 A. Yes, design work with -- in my
16 career in the cable industry, I have worked
17 with those types of products.

18 Q. Anything other than coaxial
19 cables?

20 A. I'm trying to think of
21 different types. There may be. I don't
22 recall anything off the top of my head as far

1 as using. Certainly coax stands out because
2 it's known to be unbalanced. It's possible.
3 I just don't recollect off the top of my head
4 right now what they might be.

5 A. In Paragraph 27, in Exhibit
6 1081, you state, "A twisted pair was known to
7 produce far less electromagnetic emission and
8 therefore to significantly reduce crosstalk
9 problems for adjacent signal-transmitting
10 pairs."

11 Do you see that?

12 A. Again, where are we again, sir?

13 Q. Paragraph 27 in 1081.

14 A. Okay.

15 Q. It's kind of down towards the
16 end of the page, the last sentence.

17 A. Yes, I see that. I see that
18 now.

19 Q. What do you mean by "far less"?

20 A. I understand the question. I'm
21 just giving it some thought here, Tom.

22 I go on to talk about the -- in

1 this paragraph, the single wire versus
2 twisted pair, and then I have a diagram on
3 the -- at the end of Paragraph 27. But the
4 "far less," I do not have a number for you.
5 I do know that the magnitude could be a
6 factor of ten, maybe a factor of 100. It's
7 quite a bit less susceptible to and it's
8 common in an unbalanced transmission line.

9 Q. Does the degree to which a
10 twisted pair reduces crosstalk depend on the
11 respective design of that twisted pair cable?

12 A. Just to clarify, you're talking
13 about twisted pair or twisted pair crosstalk?

14 Q. Yes.

15 A. Okay. Now, there would --
16 that -- some of the examples -- again, I
17 could go to those. But I will say this, that
18 things like wavelength and those kind of
19 things between the different pairs, is one of
20 the known factors that would affect the
21 amount of crosstalk that occurs between
22 pairs.

1 Q. And by "crosstalk" in Paragraph
2 27 of Exhibit 1081, are you referring to near
3 end or far end crosstalk?

4 A. That's referring specifically
5 to either one. The near end and the far end
6 is where they are measured. And so I'm just
7 talking about in general, the crosstalk
8 between -- that occurs with twisted pairs.

9 Q. Well, what's the difference
10 between far-end crosstalk and near-end
11 crosstalk?

12 A. Well, my recollection is I have
13 some discussions about that in my
14 declaration, if I can find that section here.
15 So in Paragraph 34, I do talk
16 -- excuse me?

17 Q. Go off the record. I want to
18 make sure the court reporter is on. Her
19 screen just went dark.

20 (Discussion off the record)

21 THE WITNESS: So near-end
22 crosstalk, I talk about that a little

1 bit in Paragraph 34. And near-end
2 crosstalk is measured -- so a cable
3 has two ends. One is just called, for
4 reference, the near and one is called
5 the far.

6 So for near-end crosstalk, you
7 will inject the signal at the near end
8 of the cable or one end of the cable,
9 we'll call it. That's defined as
10 near-end where the signal is injected
11 into the cable.

12 And then to measure near-end
13 crosstalk, then you would measure
14 another twisted pair at the near end
15 and measure the induced energy upon
16 that other twisted pair from the
17 energy that's emitted by the first
18 energized pair.

19 Q. And far-end crosstalk is what?

20 A. Far-end crosstalk is a measure
21 of -- so one end is called the near end and
22 one is called the far end. And far-end

1 crosstalk is the crosstalk measured on the --
2 is injected on one twisted pair at the near
3 end. And the energy measured -- to measure
4 far-end crosstalk is measured at the far end
5 of the cable, other end of the cable.

6 Q. What factors determine the
7 amount of crosstalk between adjacent signal
8 transmitting pairs in a communications cable?

9 A. In Paragraph 31 of
10 Exhibit 1014, it talks about one of those
11 factors, which is far-end crosstalk tends to
12 be cumulative with cable length, and it goes
13 on to say the length can be the limiting
14 factor. So one of the factors in far-end
15 crosstalk in particular is the cable length.

16 Q. Would you expect to see higher
17 far-end crosstalk between adjacent pairs at
18 the signal originating end or the
19 transmitting -- we'll call it near end of the
20 cable or far end of the cable?

21 A. I didn't quite understand. Are
22 you trying -- the question is that the

1 signal -- is the transmitting signal on
2 the -- injected at the near end, is that
3 stronger or weaker than the signals at the
4 far end?

5 Q. Well, I'll rephrase the
6 question.

7 Would you expect to see higher
8 crosstalk between adjacent pairs at the
9 signal originating end or at the far end of
10 the cable?

11 A. I think it's somewhat
12 indeterminate depending on the cable design,
13 the length and a number of other factors.

14 Q. If you have the same cable in
15 all respects except but one is longer than
16 the other, would you expect to see crosstalk
17 between adjacent pairs at the originating end
18 of the cable that's higher or lower than that
19 of a -- of the longer cable?

20 A. Well, that's an
21 all-things-equal question. I understand
22 that. But it may indeed depend which things

1 are equal, which would give a different
2 answer to that question.

3 Q. Does the frequency of the
4 signal being transmitted impact crosstalk
5 between adjacent transmitting pairs?

6 A. It is generally known that the
7 frequency at which the signal is injected
8 over at the near end, call it that way, is a
9 factor in the amount of crosstalk that would
10 happen between -- between twisted pairs.

11 Q. And are adjacent pairs carrying
12 higher frequency signals more susceptible to
13 crosstalk than the adjacent pairs carrying
14 lower frequency signals?

15 A. I'm not sure that "susceptible"
16 is the right word here. What we have here is
17 we have got the -- just call it two pairs,
18 two twisted pairs of cable adjacent, et
19 cetera.

20 And in that particular design,
21 if whatever it is were to have two twisted
22 pairs, it is known that the crosstalk tends

1 to be more strongly coupled as the frequency
2 increases, as a general rule. Not all the
3 time, but generally speaking.

4 So it's just a factor of two
5 pairs twisted that -- that capacitance and
6 inductance, all of that stuff in the cable
7 that's formed the transmission line just
8 offer up ten more coupling, higher crosstalk,
9 more crosstalk on the -- as the frequency
10 increases.

11 Q. And then at what frequency does
12 crosstalk become a problem in communication
13 cables?

14 MR. KOHLHEPP: Object to form.

15 THE WITNESS: Again,
16 hypothetical, hard to tell. It would
17 depend on the cable application. It
18 is known that the crosstalk tends
19 to -- crosstalk coupling tends to
20 increase with frequency, as a general
21 rule.

22 But to say there is a length or

1 a point or some break point is -- it's
2 not -- it all depends on the
3 construction and the example.

4 Q. Is crosstalk generally a
5 problem in communication cables transmitting
6 below ten kilohertz?

7 MR. KOHLHEPP: Objection, form.

8 THE WITNESS: I just -- again,
9 a hypothetical kind of question. It
10 depends on the cable, the application.
11 Ten kilohertz might be an important
12 frequency for some applications. I do
13 not know. I'm just saying I just
14 don't know.

15 So it's difficult to tell you a
16 particular frequency, whether it be
17 ten kilohertz or any other frequency
18 that would be some kind of a break
19 point or something.

20 Q. (BY MR. HOEHNER) If the cable
21 were identical in all other respects, all
22 respects, it's the same cable, would a cable

1 operating at, say, 180 kilohertz experience
2 more or less crosstalk than a cable operating
3 at 100 megahertz?

4 MR. KOHLHEPP: Object to form.

5 THE WITNESS: I already
6 answered that the crosstalk between
7 twisted pairs does tend to become
8 stronger with increased frequency, so
9 you can peg numbers on that. And --
10 but all I can really say at this point
11 with the information I have, rather
12 than getting into hypotheticals or
13 specific detail, or whatever, with a
14 vast lack of any information or
15 knowledge about what you're thinking
16 about, I can still say that is a
17 general trend where the crosstalk does
18 become stronger at higher frequencies.
19 And the examples beyond that need --
20 really need context.

21 Q. (BY MR. HOEHNER) Does the
22 diameter of the constituent wires in a cable

1 impact crosstalk between adjacent signal
2 transmitting pairs?

3 A. Depends on -- again, I do not
4 know. Depends on the construction, depends
5 on the situation, frequency ranges, whatever
6 have you. I can't say that conductor
7 diameter -- it's a hypothetical. There's too
8 much stuff out there just generalized.

9 Q. What if you had a cable that's
10 identical in every respect except for the
11 constituent wires of one cable being a larger
12 diameter than the other? Which cable would
13 you expect to have more of a crosstalk issue
14 between transmitting pairs?

15 A. That would be indeterminate
16 because the design of the cable, whatever
17 else -- all the other -- whatever all of
18 those things that are equal, whatever they
19 are, may or may not have an effect on -- the
20 diameter may or may not have an effect on the
21 crosstalk.

22 Q. Does the spacing between pairs

1 in a cable impact the amount of crosstalk
2 between adjacent pairing?

3 A. Generally speaking, the spacing
4 between twisted pairs would tend to reduce
5 the crosstalk between the pairs. Increased
6 spacing tends to reduce crosstalk.

7 Q. So pairs that are closer to one
8 another tend to be more susceptible to
9 crosstalk than pairs that are farther away
10 from each other?

11 A. Well, pairs -- pairs that are
12 closer or farther apart may have stronger or
13 more or less crosstalk influence from another
14 pair based on the distance.

15 But a pair, it's not that it's
16 more susceptible. It's meaning that the
17 crosstalk level is not based on a
18 susceptibility issue. It's based upon, say,
19 the distance between the two pairs, distance
20 between the two pairs. And it is known that,
21 you know, in some of the art we talked about
22 that separating the pairs does tend to

1 improve crosstalk between two twisted pairs.

2 Q. Does the strength of a signal
3 being transmitted impact crosstalk between
4 adjacent pairs?

5 A. Generally speaking, crosstalk
6 is measured as a ratio of the signal versus
7 the amount induced on the other pair, then
8 signal strength would not affect crosstalk if
9 it's measured as a ratio, typically.

10 If it's not measured as a
11 ratio, then it would seem normal to expect a
12 stronger signal would have stronger influence
13 on the other pair.

14 Q. We have been talking about
15 several factors, how they may or may not
16 affect crosstalk. I have been asking my
17 questions in terms of pairs and you have been
18 answering as twisted pairs. I didn't specify
19 twisted pairs, although I understand that's
20 how you answered it, twisted pairs.

21 How would your answers change
22 if these pairs aren't twisted? Do the same

1 principles apply?

2 A. Well, I refer to both 27,
3 Paragraph 28 in particular in my declaration.
4 I referred to that a little while ago to talk
5 about the unbalanced signal transmission.

6 And there I have a -- in the
7 figure at the bottom of Paragraph 27, I do
8 have a diagram there that depicts the amount
9 of the emission. And I say emission because
10 of crosstalk, and crosstalk is based on
11 emission susceptibility. So a much stronger
12 emission, magnetic -- stronger magnetic field
13 external to the wire than, say, a twisted
14 pair.

15 Then in Paragraph 28, I go on
16 to talk about the magnetic -- strength of the
17 magnetic field, which is another way to say
18 that the emission around the -- signal around
19 the conductors. And this diagram shows how a
20 single wire unbalanced is -- tends to have a
21 very strong magnetic field surrounding the
22 wire.

1 And then to answer your
2 question, then, if two wires are not twisted,
3 then it shows that the magnetic strength
4 around those two wires is stronger than if
5 the wires were twisted together.

6 Q. Okay. So kind of going back to
7 the factors we were discussing. So you don't
8 have twisted pairs, say you have single wires
9 in an unbalanced system, would the frequency
10 of the signal being transmitted impact
11 crosstalk between adjacent signal
12 transmitting wires?

13 And I understand that you're
14 saying overall there will be more crosstalk.
15 I'm just saying, as a factor in determining
16 how much crosstalk, does the frequency of the
17 signal impact how much crosstalk there would
18 be between those single wires?

19 A. As a general rule, which,
20 again, I think you asked me before, but the
21 answer is the same, and that is as a general
22 rule the amount of crosstalk would tend to

1 increase with increasing frequency.

2 Q. Similarly, with spacing between
3 the wires, would increased distance lower the
4 amount of crosstalk between those wires?

5 A. It is generally -- generally
6 known and a general view that -- and it is a
7 general statement that the farther away the
8 two communication paths or signal paths, the
9 farther they are away and the amount of
10 crosstalk would tend to be decreased.

11 Q. Does the presence of shielding
12 between adjacent signal transmitting pairs
13 within a cable impact crosstalk between
14 adjacent signal transmitting pairs?

15 A. Yes, shielding, particularly
16 conductive shielding, such as aluminum,
17 metal, et cetera, would be a factor in --

18 THE REPORTER: Such as what?

19 THE WITNESS: Excuse me, I did
20 not catch that.

21 THE REPORTER: You said,
22 "Shielding such as ..." something.

1 THE WITNESS: Such as aluminum
2 or other conductive materials, and
3 those type of materials would, in
4 appropriate configurations, provide
5 some isolation in a cable design.

6 Q. (BY MR. HOEHNER) How does the
7 shield provide that isolation?

8 A. It provides the isolation
9 because it is a conductive material.

10 Q. Does the presence of the
11 dielectric material between adjacent signal
12 transmitting pairs within a cable impact
13 crosstalk between adjacent signal
14 transmitting pairs?

15 A. The dielectric material, in my
16 experience, is used to provide additional
17 spacing between the conductors, which we have
18 discussed the spacing between the conductors
19 -- between the pairs' transmission line is a
20 factor in how much crosstalk occurs between
21 the two.

22 Q. And is it only the spacing that

1 the dielectric material provides that affects
2 the crosstalk between two adjacent
3 transmitting wires?

4 A. In general, the dielectric
5 material does provide spacing, and that
6 spacing is known to separate the pairs and,
7 hence, reduce the interaction between the two
8 twisted pairs. And the spacing is the -- is
9 the main factor in the amount of reduction of
10 crosstalk the spacing provides.

11 Q. Are there any other factors
12 that it -- caused by the dielectric that
13 impact the amount of crosstalk?

14 A. It's possible. I'm not
15 prepared to speak to that detail. But I do
16 know in general that spacing is one of the
17 factors that -- that those separators
18 provide.

19 Q. Going back to Paragraph 27 in
20 Exhibit 1081, did you set up any experiments
21 or make any quantitative measurements for
22 purposes of your opinions in Paragraph 27?

1 A. I did not view experiments or
2 make any measurements for 27.

3 Q. So your statement in Paragraph
4 27 is based on generic principles as opposed
5 to any quantitative analysis, correct?

6 MR. KOHLHEPP: Object to form.

7 THE WITNESS: I was looking at
8 some diagrams here and thinking about
9 your question. I would like a
10 refresher on the question. I know
11 you're talking about measurements, et
12 cetera, on -- so just rephrase the
13 question -- or not rephrase it. Just
14 repeat the question, sir.

15 Q. (BY MR. HOEHNER) Sure.

16 So your statement in Paragraph
17 27, the opinions expressed there are based on
18 general principles as opposed to any
19 quantitative analysis that you conducted,
20 correct?

21 A. That is correct.

22 MR. KOHLHEPP: Object to form.

1 Q. (BY MR. HOEHNER) Can you turn
2 to Paragraph 29 on Exhibit 1081?

3 A. Okay.

4 Q. And here you state, "The fact
5 that single wire unbalanced transmission
6 produces far stronger electromagnetic
7 radiation than twisted pair balanced
8 transmission means that the crosstalk caused
9 on adjacent conductors is far more
10 significant and problematic for the single
11 wire transmission."

12 Do you see that?

13 A. I see that.

14 Q. And are you referring to
15 far-end crosstalk, near-end crosstalk here?
16 Which crosstalk are you referring to?

17 A. I'm talking about the crosstalk
18 in general in this paragraph. And so reading
19 the line in 29, "The fact that a single wire
20 unbalanced transmission produces far stronger
21 electromagnetic radiation than a twisted pair
22 balanced transmission means that the

1 crosstalk caused on adjacent conductors is
2 far more significant and problematic for the
3 single wire transmission."

4 So I'm talking about crosstalk
5 in a general sense. There is a crosstalk
6 measured at the near end, there is a measure
7 at the far end that we discussed. But, in
8 general, the crosstalk would be far more
9 significant in a single wire transmission.

10 Q. Did you set up any experiments
11 or conduct any quantitative analysis with
12 regard to your opinions in Paragraph 29?

13 A. I did not do any experiments or
14 analysis for 29.

15 Q. If we could turn to Paragraph
16 30, I'm not going to read the whole paragraph
17 into the record, but feel free to read it on
18 your own. Well, why don't you read it and
19 then I'll ask you a question. Let me know
20 when you're done.

21 A. I have read it.

22 Q. So you understand

1 Dr. Eldering's interpretation of Roberts as
2 operating in unbalanced mode, correct?

3 A. That's the way I understand --
4 that's -- reading from 30, that's what I
5 understand Dr. Eldering was saying.

6 Q. And why you take issue with
7 Dr. Eldering's interpretation as to the
8 operation of Roberts in unbalanced mode,
9 Dr. Eldering's proposed interpretation is
10 possible, right?

11 A. What's possible is not really
12 relevant to the art of when we're talking
13 about Roberts in particular now. So I
14 provided a lot of material on the declaration
15 we can go over that explains how the Roberts
16 cable would have been manufactured and made
17 and all of the -- in Roberts itself and in
18 references, they talk about cables like
19 Roberts. All of those examples are twisted
20 pair balanced mode.

21 And so -- so I just don't see
22 Roberts or the reference material that

1 describes cable in the Roberts style,
2 including single wires. So I do not agree
3 with Eldering that Roberts is teaching single
4 wire transmission.

5 Q. Right. And in your opinion in
6 Paragraph 30, you state that, "As I explained
7 above, a POSITA would have understood that if
8 Roberts had such a configuration -- groups of
9 straight wires transmitting in unbalanced
10 mode -- there would be far more crosstalk
11 within a group (at both the near and
12 far-ends) than there would be with twisted
13 pairs."

14 So here you're stating an
15 opinion on how Roberts would operate under
16 Dr. Eldering's interpretation, correct?

17 A. Yes, it is an opinion on how
18 Eldering would work based on my knowledge,
19 and even some of the reference there that
20 talks about how the crosstalk between wires
21 is greatly improved when you're using twisted
22 pairs.

1 Q. Did you set up any experiments
2 or conduct any quantitative analysis and
3 measurements for purposes of your statement
4 in Paragraph 30?

5 A. I did not do so.

6 Q. Roberts doesn't specifically
7 state that it's operating in a balanced mode,
8 does it?

9 A. If I can take a look at
10 Roberts, I can answer the question of whether
11 he uses the term "balanced" in that or not.
12 I can do so --

13 Q. That's Exhibit 1009 in your
14 stack.

15 THE REPORTER: What number?

16 I'm sorry, I didn't hear.

17 MR. HOEHNER: 1009.

18 THE REPORTER: Okay.

19 THE WITNESS: So looking at
20 Roberts, and I have it in front of me,
21 I'm looking in particular just to
22 refresh my memory on whether or not

1 Roberts talks about balance. So I'm
2 looking at Column 1 in the text. He's
3 talking about transmitting opposite
4 direction, et cetera.

5 And I want to look also --
6 again, he talks about the system again
7 in, I think, Column 13 a little bit.
8 But looking back over Roberts, I do
9 not yet see the word "balanced."

10 Q. (BY MR. HOEHNER) So it's your
11 opinion that Roberts discloses operating in a
12 balanced mode versus anything that Roberts
13 specifically states, correct?

14 A. Roberts states many things that
15 would lead me to have an opinion that he's
16 talking about balanced transmission.

17 Q. If you could turn to Paragraph
18 33 in Exhibit 1081, Paragraph 33 continues
19 onto Page 23, which is marked as Page 25.

20 Do you see where it states, "As
21 I also explained above, it was well known
22 that if these conductors were straight wires

1 transmitting in unbalanced mode, there would
2 be very high and problematic levels of
3 crosstalk within a group (which is why such
4 cables conventionally used twisted pairs)."

5 Do you see that?

6 A. Yes, I do.

7 Q. Did you set up any experiments
8 or perform any quantitative analysis as part
9 of your statement that there would be very
10 high problematic levels of crosstalk within a
11 group?

12 A. I did not set -- do any
13 measurements or do -- or experiments or
14 analysis on that. I do know and disclose in
15 the declaration that a single wire type
16 transmission is much more -- surrounding the
17 electrical field and emission around the
18 wires are much stronger than with twisted
19 pair.

20 Q. Is it possible, under
21 Dr. Eldering's interpretation of Roberts, for
22 a signal to be transmitted from one end of

1 the cable a sufficiently large power level
2 and those compared to the signal around it
3 such that crosstalk wouldn't be an issue at
4 the far end?

5 A. Are you saying that if you
6 increase signal strength on the wire that
7 would help mitigate crosstalk? Is that a
8 rephrasing of your question?

9 Q. Sure, yeah.

10 A. I would say not because it's
11 not just what -- not one wire transmitting.
12 All wires are transmitting in that
13 transmission mode. And so if you just crank
14 up the power on one wire, it just increases
15 the noise on the other wires with which you
16 need to increase the signal on the other
17 wires to compensate. And that goes round and
18 round and continues to increase and be a
19 non-acceptable solution.

20 So, no, increasing power would
21 not be an answer because it just creates more
22 crosstalk on other conductors, and those

1 other conductors would have to increase power
2 to manage their crosstalk. So it -- the
3 power level would not be a solution to the
4 problem in Roberts in a single wire
5 configuration.

6 Q. But if the power level of each
7 of the conducting wires was increased,
8 wouldn't you -- in the end of the other -- at
9 the receiving end, wouldn't you still be able
10 to recover a signal despite the crosstalk?

11 A. We are talking about
12 communication cable with Roberts and we are
13 talking about many twisted pairs. But in the
14 case of looking at Roberts as a single wire,
15 we do have acknowledgment that there's
16 multiple single wires in each of the groups
17 in the -- in Roberts. And in Roberts
18 terminology, the groups 14 and 16.

19 So power levels, again, would
20 not be a solution to the crosstalk problem
21 because multiple conductors in each of those
22 segments would have very strong crosstalk,

1 would be outlined in the diagrams. And so
2 power level, again, as I said, would just
3 be -- add to the noise. The other
4 conductors, the other signals in that same
5 chamber, say, 14 or 16, would need to
6 increase their level to be essentially
7 distinguished at the far end, which creates
8 more crosstalk energy. And the power level
9 would, in my view, not be a solution to the
10 problem.

11 Q. If we could bring up
12 Exhibit 1080, which is entitled
13 Expert Declaration of Kenneth Cornelison in
14 Support of Petitioner Reply.

15 Mr. Cornelison, you can find
16 that in your stack of documents.

17 A. I have that here.

18 Q. Do you recognize this document?

19 A. Yes, I do.

20 Q. Is this the declaration you
21 filed in IPR2023-01061?

22 A. That is correct.

1 Q. If you could turn to Paragraph
2 21, which is on Page 9 of Exhibit 1080, which
3 is marked as Page 11.

4 A. Yes.

5 Q. Here you state, "I pointed to a
6 different embodiment of Beggs that discloses
7 the S-shaped buffer shown in Figure 7, where
8 the buffer is formed of a 'tape," that is
9 undisputedly substantially flat."

10 Do you see that?

11 A. Yes, I do.

12 Q. As depicted in Beggs, the
13 S-shaped buffer shown in Figure 7 isn't flat,
14 is it?

15 A. I need to look at Beggs.

16 Q. Sure. That should be Exhibit
17 1015 in your stack.

18 A. Okay. I have now turned --
19 so I have opened up to the -- in particular,
20 the figures that are shown, the figures, and
21 discloses the preforms, et cetera, of that
22 construction. So I have that in front of me.

1 Q. Okay. So I'll repeat the
2 question.

3 As depicted and described in
4 Beggs, the S-shaped buffer shown in Figure 7
5 isn't substantially flat, is it?

6 A. Well, you have to put this in
7 context here. Beggs discloses this preform,
8 55. As I say in Paragraph 21, "The Patent
9 Owner points to my statement during
10 deposition that preform is not 'substantially
11 flat.'"

12 But I also point out, again, in
13 this declaration whether preform 55 was
14 substantially flat or not -- or not
15 substantially flat is not relevant to my
16 opinion.

17 So pointing to a different
18 embodiment that discloses the S-shaped buffer
19 shown where the buffer is formed from tape,
20 then that tape is undisputably substantially
21 flat.

22 Q. I'm talking about preform 58

1 shown in Figure 7, which is the S-shaped
2 buffer embodiment. As described in Beggs,
3 shown in Figure 7, the S-shaped buffer isn't
4 substantially flat, is it?

5 A. Well, I would look at the
6 buffer formed of the tape that Beggs provides
7 that construction in his art, and he talks
8 about doing a tape in a configuration, such
9 as shown in Figure 7, which is preform 58.
10 So that shape, when formed from a tape, I
11 would see as substantially flat.

12 Q. But Figure 7 to preform 58 are
13 not substantially flat, are they?

14 MR. KOHLHEPP: Object to form
15 and scope. Also asked and answered.

16 MR. HOEHNER: If you would
17 object as to form only, I would
18 appreciate it. Thank you, Counsel.

19 THE WITNESS: Well, for
20 additional context on your question, I
21 would -- I know I reference in Exhibit
22 1007, Paragraph 88, if I could look at

1 that and see what that context brings
2 to my declaration words. Do I have
3 that in the stacks, Tom?

4 Q. (BY MR. HOEHNER) I do not have
5 that. We can bring it up. It would be 1007
6 from the '537 patent. Where would you like
7 to look?

8 A. At Paragraph 88. Next page,
9 please, where 88 continues. Back a page.

10 So my opinion in Paragraph 88
11 and what I refer to in 1061, Paragraph 21 is
12 talking about the tape embodiment of Beggs
13 where -- and I go into detail there in
14 Paragraph 88 of the first declaration.

15 So Beggs is clear that the
16 shape of Figure 7, reading, again, from
17 Paragraph 88, may be replaced with a tape,
18 which is made of a dielectric material, which
19 is wrapped around the conductive pairs and
20 that -- and that tape would be substantially
21 flat and be formed into the shape such as
22 shown in Figure 7.

1 So my declaration, as I say in
2 Paragraph 21, is about the tape embodiment
3 that Beggs disclosed where the tape was
4 formed into the shape you see in Figure 7 of
5 Beggs.

6 Q. The tape embodiment you refer
7 to is another embodiment of Figure 7,
8 correct?

9 A. Well, Figure 7 specifically
10 calls out 58 preform. What I'm talking about
11 is where a tape is used and folded to form
12 the buffer system where it's from a tape,
13 which would be a substantially flat tape.

14 Q. Right. You keep bringing up
15 the tape. I didn't mention the tape. I'm
16 talking about Figure 7, preform 58, okay, and
17 it is shown in Figure 7 and described in
18 Beggs as being S-shaped, correct?

19 A. It is S-shaped.

20 Q. So it's not substantially flat,
21 is it?

22 MR. KOHLHEPP: Object to form.

1 THE WITNESS: Well, in
2 Paragraph 21, I'm not talking about
3 preform 58. I'm talking about the
4 different embodiment in Beggs that
5 discloses the S-shaped buffer shown in
6 Figure 7 where the buffer is formed of
7 a tape. In my view, that tape would
8 be a substantially flat tape, which
9 indeed is formed to form the shape.

10 I really don't have an opinion
11 about preform 58 because I'm talking
12 about the tape formed in -- the tape
13 that's used to form the profile that
14 Beggs described as a buffer system.

15 Q. (BY MR. HOEHNER) I understand
16 you want to keep talking about the tape, but
17 we're not talking about the tape.

18 We're talking about S-shaped
19 preform 58. My question is, is S-shaped
20 preform 58 substantially flat?

21 A. Included in my last answer was
22 I don't have an opinion on the shape of

1 preform 58.

2 Q. So you cannot answer today
3 under oath whether preform 58 is
4 substantially flat; is that correct?

5 MR. KOHLHEPP: Object to form.

6 THE WITNESS: I do not -- have
7 not yet formed an opinion about
8 preform 58 being substantially flat.

9 Q. (BY MR. HOEHNER) Where does
10 Beggs say what the shape of the tape
11 embodiment in Figure 7 is?

12 A. So I'm looking at Column 6,
13 Lines 52 to 56. Your question is where does
14 Beggs describe the shape of the tape.

15 In my scan here, I did not see
16 it yet where he actually describes the tape
17 shape. But as someone skilled in the art, I
18 would understand the tape to be flat,
19 potentially flat. And he does talk about the
20 -- which is wrapped, so he talks about
21 wrapping this tape.

22 So I would anticipate and

1 expect the tape that Beggs is referring to to
2 be a flat tape that is formed around the
3 conductors, as he describes.

4 Q. So the lines you just pointed
5 out in Beggs in Column 6 around Line 52, it
6 says, "Also the S-shaped preform 58 in Figure
7 7 may be replaced with a tape."

8 Right?

9 A. Correct.

10 Q. But you have no opinion today
11 as to whether preform 58 in Figure 7 is
12 substantially flat, correct?

13 A. No opinion about the preform
14 58. But my opinion would be that someone
15 skilled in the art using tapes, the tape
16 would be a flat tape and folded as Beggs
17 describes.

18 Q. Could you have a tape --
19 looking at Figure 7, could you have a tape
20 that's preformed into the shape shown in
21 Figure 7? Is that possible?

22 MR. KOHLHEPP: Object to form.

1 THE WITNESS: Again, a
2 hypothetical. What Beggs is talking
3 about is taking a tape and wrapping
4 it. So I'm trying to deal with what
5 Beggs talks about.

6 And with that concept and that
7 description, that disclosure, someone
8 skilled in the art would -- would know
9 him to talk about a flat tape being
10 wrapped as he describes.

11 Q. You would agree the only
12 description of what the tape is formed into
13 is the S-shaped preform 58 in Figure 7,
14 right?

15 A. He says the preform -- I'm
16 going to read the words here. "The S-shaped
17 preform 58 in Figure 7 may be replaced with a
18 tape which is made of a dielectric material
19 and which is wrapped around the conductor
20 pairs to cause each pair to be enclosed
21 substantially in a dielectric portion of the
22 buffer system."

1 What I do not see him say there
2 is that it's going to be, look, just like 58,
3 it's going to be wrapped tape.

4 Q. But you describe the tape
5 embodiment as a replacement for preform 58,
6 correct?

7 A. Your question again, Tom.

8 Q. Your understanding is that the
9 tape is a replacement for preform 58,
10 correct?

11 A. Yes, that's what Beggs states,
12 it's replaced with a tape.

13 Q. But you don't know whether
14 preform 58 is substantially flat, correct?

15 MR. KOHLHEPP: Object to form.

16 THE WITNESS: No opinion at
17 this time on that.

18 Q. (BY MR. HOEHNER) Looking at
19 Figure 7, is it possible to have a tape that
20 is shaped like an S?

21 MR. KOHLHEPP: Object to form.

22 THE WITNESS: Again, a

1 hypothetical. Many shapes perhaps a
2 flat -- the flat tape can be formed
3 into, certainly. And the one Beggs
4 discloses here is that 58 could be
5 replaced by the tape.

6 And he does not state that it
7 looks just the same or -- he just says
8 enclosed substantially in a dielectric
9 portion.

10 Q. (BY MR. HOEHNER) Right. And
11 can you answer the question, can a tape come
12 S-shaped as shown in Figure 7, such that the
13 wrapping is merely wrapping the portions of
14 the upper and lower S around the pairs, as
15 shown in Figure 7?

16 MR. KOHLHEPP: Object to form.

17 THE WITNESS: Again,
18 hypothetical. The -- what Beggs
19 disclosed as a tape and he disclosed
20 as wrapped, the form, some kind of a
21 profile or shape of a tape.

22 He does not disclose, at least

1 in these columns here, these words,
2 what that shape would exactly be. But
3 it's to replace preform 58 using what
4 someone skilled in the art would say,
5 again, is a flat tape being -- being
6 wrapped, as Beggs states.

7 So with a flat tape, there is a
8 myriad of shapes you may provide. But
9 in the case of Beggs, my declaration
10 we are talking about, Beggs'
11 construction, taking a flat tape,
12 wrapping it, as Beggs describes. But
13 he's not saying that it's going to
14 look just like 58.

15 Q. And he also doesn't say what
16 the shape of the tape is, does he?

17 A. As someone skilled in the art,
18 I would see that as a flat tape. Beggs does
19 not say it's flat, but as someone skilled in
20 the art, I would say it would be a flat tape.

21 Q. And is it your opinion that all
22 tapes are flat?

1 MR. KOHLHEPP: Object to form.

2 THE WITNESS: That's a question
3 asked and answered in the first
4 declaration -- first deposition, I
5 should say.

6 Q. (BY MR. HOEHNER) Well, I'm
7 asking you today for today's deposition based
8 on your new declaration.

9 The question is, is it your
10 opinion that all tapes are substantially
11 flat?

12 A. What I know is that -- is that
13 my answer -- my opinion has not changed about
14 all tapes and I do not recollect
15 specifically. I wasn't prepared to answer
16 that today. But I could go back and look at
17 the answer. And to the best of my
18 understanding right now, Tom, it would be the
19 same answer.

20 Q. What's the answer?

21 A. Well, we would have to look it
22 up. I don't remember exactly. I just didn't

1 know about the question.

2 Q. So you can't answer today
3 whether it's your opinion that all tapes are
4 substantially flat?

5 A. I can provide the same answer I
6 did from the first deposition. I do not
7 exactly remember what that was. I do
8 remember the question. And so we -- I'm
9 certainly available to refer to that first
10 deposition and see what it said.

11 Q. Unfortunately, you're not
12 allowed to just rely on your old testimony.
13 I'm asking you the question today based on
14 your new declaration and new statements you
15 made in this declaration. I'm asking you a
16 fairly simple question.

17 As a person skilled in the art
18 with 40 years of experience in the wire and
19 cable industry, are all tapes substantially
20 flat?

21 A. So I'm prepared to answer today
22 in today's deposition. I just know my

1 opinion has not changed from the last one.

2 And so by referring to the first one, I could
3 just answer today the same way and provide
4 the answer you request.

5 Q. So your answer is you don't
6 know the answer?

7 A. No, I know the answer. It's in
8 the deposition. I answered it already.

9 Q. You stated opinions in the
10 current declaration that the tape is
11 substantially flat. That's in this current
12 declaration of both IPRs in this proceeding,
13 declarations filed on July 9th after your
14 last deposition.

15 So I'm asking you now, is it
16 your opinion that all tapes are substantially
17 flat? And it's fine if you can't answer the
18 question. Just say, "I can't answer that
19 question."

20 MR. KOHLHEPP: Object to form.

21 THE WITNESS: Well, I remember
22 the question from the first

1 deposition, Tom. And I'm trying to
2 remember if actually it did -- that
3 did come up again in this declaration.

4 Q. (BY MR. HOEHNER) Well, I can
5 point you to Paragraph 1 in this declaration
6 where you say, "I pointed to a different
7 embodiment of Beggs that discloses the
8 S-shaped buffer shown in Figure 7 where the
9 buffer is formed of a 'tape' that is
10 undisputedly substantially flat."

11 A. In the declaration, 1061, the
12 issue of all tapes being substantially flat
13 was raised in Paragraph 25 at the top. If
14 you can turn to that, please.

15 Q. All right.

16 A. Yes.

17 Q. So your answer is all tapes are
18 substantially flat. Is that your answer?

19 A. So what I said -- this refers
20 back to what I answered in my first
21 deposition where I said that I did not know
22 whether all tapes are substantially flat.

1 And that is, to me, the
2 refresher was -- I thought that's how I
3 answered before and that is how I would
4 answer now. I don't know about all tapes.

5 Q. Okay. So you don't know if all
6 tapes are substantially flat?

7 A. That's what I answered then,
8 the same answer now.

9 However, "all tapes" is a
10 pretty big world. And what I do understand,
11 as someone skilled in the art, Paragraph 25
12 particularly talks about Jachimowicz, which
13 is certainly a flat tape.

14 And in Beggs, same thing holds.
15 Someone skilled in the art would see the tape
16 replacement we were discussing as being a
17 flat tape formed around -- wrapped around the
18 conductors.

19 Q. It is your opinion that in the
20 communications cable field, all tapes are
21 substantially flat?

22 A. Well, "all" is a pretty big

1 three-letter word. My -- my use of tapes over
2 the years and my cable experience, I would --
3 they are all characterized by substantially
4 flat, come on a roll, paved off,
5 substantially flat.

6 Q. Because they come on a roll,
7 that makes them -- or that is one of the
8 reasons they are substantially flat?

9 A. No, not particularly. But,
10 again, substantially flat -- substantially
11 flat by their form and their structure, the
12 ones I have used in my experience have been
13 substantially flat.

14 Q. We have been going over an
15 hour. Why don't we take another break.

16 A. Okay.

17 (Recess from 12:19 p.m. to 1:02
18 p.m.)

19 Q. (BY MR. HOEHNER)
20 Mr. Cornelison, today we have been discussing
21 various references, patents and publications
22 --

1 THE REPORTER: Wait, I couldn't
2 hear. Right after you said
3 "publications," it cut out -- sorry.

4 MR. HOEHNER: Is the audio
5 working now?

6 (Discussion off the record)

7 Q. (BY MR. HOEHNER) Mr.
8 Cornelison, we have been discussing various
9 patents and publications and these IPRs
10 contain various patent prior art references
11 and publications in the communications cable
12 field, correct?

13 A. Yes, I believe that's correct.

14 Q. And is it your opinion that in
15 order to understand and interpret those
16 various references, you need to be a person
17 of ordinary skill in the art?

18 A. Yes, I do believe so.

19 Q. So when translating a foreign
20 language document into English, does the
21 individual performing the translation need to
22 understand what that foreign language

1 document is saying in order to translate it
2 correctly?

3 MR. KOHLHEPP: Object to form
4 and scope.

5 THE WITNESS: Well, there is an
6 issue for translation. I have no
7 opinion about the translation skill or
8 whatever at this point. I just know
9 they need to be translated and I'm
10 reading the translated documents.

11 Q. (BY MR. HOEHNER) Do you speak
12 Japanese, Mr. Cornelison, or read Japanese?

13 A. I do not read or speak
14 Japanese.

15 Q. You are familiar with the
16 Yanagida reference that's part of these IPR
17 proceedings?

18 A. Yes, I am familiar with that
19 reference.

20 Q. And Yanagida is a -- the
21 original patent is a Japanese language patent
22 publication, correct?

1 A. That is my understanding. I'm
2 reading the English -- what I read as the
3 English translations of that.

4 Q. In Paragraph 50 of
5 Exhibit 1061 -- sorry, Exhibit 1080 in the
6 1061 IPR, if you could turn to that.

7 A. What was that reference number
8 again, Tom?

9 Q. Paragraph 50 in Exhibit 1080,
10 which is going to be 1061 IPR.

11 A. Okay.

12 Q. So in Paragraph 50, starting on
13 Page 25, which is marked Page 27, you include
14 a chart here that compares the certified
15 translation of Yanagita in Exhibit 1012 to
16 that of an uncertified previous translation
17 of Yanagita in Exhibit 1055; is that correct?

18 A. Yes, I do.

19 Q. The translations -- or the
20 excerpts of the translations you depict here
21 contain different language and use different
22 words and expressions, do they not?

1 A. Well, the language is -- on
2 each side is English, both, but they do have
3 different words as part of the translations.

4 Q. So looking at the translation
5 shown in the chart here in Paragraph 50, how
6 do you know which translation is more correct
7 and closer to the original Japanese language?

8 A. Well, I know there are two,
9 perhaps more, translations of this -- this
10 patent, but I relied for my opinion on
11 Exhibit 1012. And I listed the -- there is
12 knowledge of the fact that there is another
13 translation, 1055, which also explains,
14 corroborates what's in 1012. But for my
15 opinion, I relied on 1012.

16 Q. Do you know which translation
17 most closely represents the Japanese language
18 version of Yanagita?

19 MR. KOHLHEPP: Object to form
20 and scope.

21 THE WITNESS: Well, since I
22 don't either read or speak Japanese, I

1 would have no -- I could have no
2 opinion about that.

3 Q. (BY MR. HOEHNER) Do you know
4 if either of the translators for Exhibit 1012
5 or Exhibit 1055 were persons of ordinary
6 skill in the art with respect to the
7 materials disclosed in the Yanagita, as
8 you've defined it?

9 A. I do not.

10 Q. Would a translator who is not a
11 person of ordinary skill in the art, as
12 you've defined it, be able to accurately
13 understand and correctly translate the
14 underlying Japanese language document into
15 English?

16 MR. KOHLHEPP: Object to form,
17 scope.

18 THE WITNESS: Well, I view that
19 the translator would translate to the
20 best of their ability and they are
21 translating the words, meaning of the
22 words as they understand it.

1 I have no opinion or thought on
2 whether that requires some kind of a
3 skill set in -- a POSITA, kind of a
4 reference for this particular
5 technology. I don't know. I just
6 don't know.

7 Q. Looking in Paragraph 50 on Page
8 25 at the first row of text under the column
9 headed Exhibit 1012, you included the
10 language, "There is a trend to often using,
11 as communication cables, so-called
12 'alternatingly twisted cables,' wherein that
13 wherein a large number of strands of
14 insulated wires or pairs thereof or quad
15 strands, or units thereof, are twisted
16 together so as to reverse the direction of
17 twisting thereof with given periodicity."

18 Do you see that?

19 A. I think you said Paragraph 50
20 that you were reading from, 5-0?

21 Q. Yeah, Page 25, first column of
22 the chart.

1 A. Okay. You're in the chart,
2 okay.

3 Q. The second sentence in the
4 chart starting, "There is trend ..."
5 Do you see that?

6 A. Yes.

7 Q. So in that next sentence, what
8 does the term "wherein that wherein" mean?

9 A. So the question starts with the
10 words "wherein" --

11 Q. Just that phrase, "wherein that
12 wherein," what does that mean in that
13 sentence?

14 A. I'm looking, Tom. Just give me
15 a second here.

16 Well, I see what -- in 1012,
17 the "wherein" part, he is talking -- the
18 patent in English describes, "... Wherein a
19 large number of strands," et cetera, I can
20 read that. But he's talking about what is
21 inside the alternately twisted cables.

22 Q. So what's the difference

1 between the two "whereins" in that expression
2 or are they basically redundant?

3 A. I took that as redundant.
4 Where the words talk about the trend to use
5 communication as you see alternately
6 twisted cables, and I took it as wherein a
7 large number of strands of insulated wires or
8 pairs thereof or quad strands, or units
9 thereof, are twisted together, as shown in
10 that paragraph.

11 Q. Are you familiar with the term
12 "strand of hair"?

13 A. I am.

14 Q. In English, when somebody says
15 "strand of hair," they are referring to an
16 individual hair; is that true?

17 A. That is correct.

18 Q. Can a strand of a wire mean an
19 individual wire?

20 A. Well, "strand" is a noun. And
21 in the noun it can be a strand of hair, a
22 strand of wire. That's a thing, that's a

1 true thing.

2 Q. So like a strand of hair, a
3 strand of wire could mean an individual wire,
4 right?

5 A. It could be when using strand
6 as a noun.

7 Q. Looking at the next term in
8 this sentence that we're looking at, it says,
9 "... A large number of strands of insulated
10 wires."

11 Do you see that?

12 A. Yes.

13 Q. What is meant by "large number
14 of strands" there?

15 A. So it's describing the strands
16 of -- that can be either insulated wires or
17 pairs thereof or quad strands or units
18 thereof.

19 Q. You're agreeing, in other
20 words -- I want to focus just on the phrase
21 "large number of strands of insulated wires,"
22 that particular phrase. What does that

1 particular phrase mean?

2 A. Well, I read this to mean that
3 Yanagita and his claim and description
4 describes the cable as being alternately
5 twisted cable and you have a large number of
6 strands.

7 And to your question, insulated
8 wires where the strand -- the -- a strand
9 would consist of an insulated wire.

10 Q. You're saying a large number of
11 insulated wires?

12 A. Yes.

13 Q. At the end of that sentence, it
14 states, "... Are twisted together so as to
15 reverse the direction of twisting thereof
16 with given periodicity."

17 Right?

18 A. Well, what's important in this
19 paragraph here is that a strand can be an
20 insulated wire and a strand can be a pair --
21 a pair thereof of wires or quad strands,
22 which quad is known to be four -- four

1 insulated wires twisted together, or units
2 thereof, which I take as there could be
3 groups of pairs or quads or individuals --
4 individual insulated wires.

5 And then I read 1012 to mean
6 that those pairs or quads or even wires are
7 then twisted together so as to reverse the
8 direction of twisting there, as you see.
9 And, in turn, that forms the alternately
10 twisted cable, which could contain either
11 wires, pairs or quad strands.

12 Q. You didn't answer the specific
13 question I asked, which was the phrase "are
14 twisted together so as to reverse the
15 direction of twisting thereof with given
16 periodicity."

17 You see that particular phrase,
18 right?

19 A. Yes, that -- yes, that twisting
20 together is talking about the strands, which
21 may be several different types of strands,
22 are twisted together. That forms the cable

1 and such that the directions are reversing
2 with a given periodicity.

3 Q. And the twisting referred to
4 there is all of the components of the cable,
5 all of the wires, right?

6 A. Correct. All of the
7 components, yes.

8 Q. When you look in Paragraph 50,
9 the first row of text out of the column
10 headed Ex-1055, you included the language,
11 "... As communications cable, there is a
12 tendency to use a plurality of either
13 insulated element wires or else stranded
14 pairs or stranded quads of such or otherwise
15 to use so-called alternatedly stranded cable
16 with which units of the wires are stranded in
17 a manner so that the stranding direction is
18 reversed at points in time within a fixed
19 cycle."

20 Do you see that?

21 A. I do see that.

22 Q. Is "alternatedly" a proper

1 English word?

2 A. I'm not sure what proper
3 English word -- I'm not sure how you would
4 define a proper English word in that context.

5 Q. Is it a word in the English
6 language?

7 A. Given the -- given the text and
8 the drawings, I see both 1012 and 1055 in
9 that first line talking about reversing
10 directions and it goes on in both references.

11 Also, as I said, I did use 1012
12 as -- I relied on 1012, and so what I see
13 between 1012 and 1055 are equivalent
14 description of the present invention where we
15 have alternately twisted cables, we have a
16 cable consisted of insulated wires or pairs
17 or quads or units of those elements, and
18 those elements are then twisted together so
19 as to -- so as to reverse the direction of
20 twisting with the given periodicity.

21 So Eldering to me -- Yanagita,
22 it's distinctly clear to me that he's talking

1 about a cable-type assembly. It can contain
2 either wires, pairs, or quads, and then those
3 wires, pairs, or quads are then turn-twisted
4 together and in a reversing direction
5 alternatingly.

6 Q. Now, just answer a very simple
7 question.

8 Is "alternatedly" a word in the
9 English language?

10 A. I would have to, I guess, look
11 in the dictionary to be positive.

12 Q. But you don't know?

13 A. I don't know.

14 Q. In the excerpt, the phrase "the
15 wires are stranded in a manner so that the
16 strand direction is reversed at points in
17 time within a fixed cycle" is referring to
18 the wires in the cable collectively being
19 twisted together within the cable, such that
20 the direction of the twisting periodically
21 reverses, correct?

22 A. That's correct, although the

1 wires may consist of pairs or quads.

2 Q. And the phrase "or otherwise to
3 use so-called alternatedly stranded cable
4 with which units of the wires are stranded in
5 a manner so that the stranding direction is
6 reversed at points in time within a fixed
7 cycle," what is the "or otherwise" referring
8 to?

9 A. I believe he's talking about
10 the -- essentially the options of what can be
11 stranded together, or twisted together, as
12 they say, either wires, element wires or
13 twist -- in 1055, "... Stranded pairs or
14 stranded quad of such, or otherwise."

15 So he is giving the description
16 of an invention where it could have various
17 components and the point where this invention
18 is the ability to have the alternately
19 stranded cable.

20 Q. So in your opinion, the "or
21 otherwise" is referring to reversing the
22 stranding direction versus not reversing the

1 stranding direction?

2 MR. KOHLHEPP: Object to form.

3 THE WITNESS: No, what I said
4 was that in 1055, I'm reading it as
5 having a choice of what can be
6 assembled into the cable, which would
7 be wires, stranded pairs, stranded
8 quad of such, which means stranded
9 quad of wires, and -- or otherwise,
10 which may be some other embodiment of
11 wires or some assembly of wires.

12 And then on -- going on to use
13 "so-called alternatedly stranded cable
14 with which the units of the wire are
15 stranded in a manner," et cetera,
16 going in the opposite direction of the
17 cycle.

18 Q. Does Yanagita discuss crosstalk
19 in any way?

20 A. Well, I don't remember Yanagita
21 discussing crosstalk, but that doesn't mean
22 it doesn't. So I would have to look at

1 Yanagita to double-check.

2 Q. I would refer you to
3 Exhibit 1012.

4 A. I did look through the 1012
5 document, the text. I do not see Yanagita
6 talking about crosstalk.

7 Q. If we can bring up
8 Exhibit 1010, Mr. Cornelison, and you can
9 locate that in your stack of materials. This
10 is the GmbH 866 reference, correct?

11 A. Yes, I see that.

12 Q. In designing a communications
13 cable like that in GmbH 866, what factors
14 would a person of ordinary skill in the art
15 consider when deciding whether to utilize a
16 shield or a dielectric separator between
17 pairs?

18 MR. KOHLHEPP: Object to form.

19 THE WITNESS: There would be a
20 number of factors that is -- where
21 they use metallic or dielectric. Some
22 of them are insertion loss, it's

1 impedance, et cetera. But crosstalk
2 was certainly one of those decisions.

3 Q. (BY MR. HOEHNER) What other --
4 you mentioned a few of them. Are those the
5 only factors? You mentioned impedance,
6 signal loss, I believe is what it was,
7 insertion loss.

8 A. Yes.

9 Q. What else were the
10 considerations that come into play?

11 MR. KOHLHEPP: Object to form.

12 THE WITNESS: Well, the list,
13 as it were, those are some examples.
14 The list would vary -- would vary
15 depending on the cable requirements,
16 which we talked about a little bit
17 earlier today, objectives for the
18 cable design, et cetera.

19 So not getting all of the
20 details or examples or the what-ifs
21 here, I find it very difficult to give
22 you a list. But one thing I can say

1 that between metallic and dielectric
2 separators is that they tend to
3 provide different levels of crosstalk.

4 Q. (BY MR. HOEHNER) Can you turn
5 to Paragraph 57 in Exhibit 1080? Do you see
6 near the end -- let me know when you have
7 that in front of you.

8 A. I'm looking at 57.

9 Q. Near the end of that paragraph,
10 you state, "All of this evidence shows that
11 high-speed cables having twisted pairs either
12 with no separator or with a dielectric-only
13 separator would have been expected to work,
14 including in the transfer range GmbH
15 teaches."

16 Do you see that?

17 A. Yes, that's what I say.

18 Q. You state that it would be
19 expected to work. Did you perform any
20 experiments or take any measurements with
21 respect to GmbH 866 type cable?

22 A. No, I did not -- I did not do

1 analysis or measurements.

2 Q. So your statement here is based
3 on a generic principle as opposed to anything
4 quantitative; is that correct?

5 A. It's not based upon
6 quantitative analysis, no, but based on other
7 art and other types of cables that will
8 achieve the requirements and the description,
9 I should say, that GmbH provides for its
10 cable. And I know some of those
11 constructions don't have metallic separators.

12 Q. In a communications cable, is
13 there a difference in capacitance between
14 using metallic conductor pair or separator
15 and a foamed polymer conductor pair
16 separator?

17 A. Well, that would tend to -- I
18 do know in general that when you have a metal
19 in proximate to a twisted pair, the
20 capacitance is affected by the presence of
21 the metal. The amount of the capacitance
22 change would depend, of course, upon spacing,

1 a number of other different design factors
2 within the cable.

3 So my answer is that metal in
4 the cable can affect capacitance. To say
5 whether capacitance is higher or lower
6 depends on a lot of other factors.

7 Q. Did you make any calculations
8 with respect to GmbH 866, with that type of
9 cable with regard to the proposed
10 modifications you discussed in Paragraph 57?

11 A. I did not.

12 Q. Are you aware that CommScope
13 asserts in these IPR proceedings that Belden
14 admitted that GmbH 866 disclosed the twisted
15 pairs in previous litigation, reexamination
16 proceedings involving a company called
17 Superior Essex?

18 A. I did not look into that for
19 the purpose of this declaration.

20 Q. But you have reviewed materials
21 from both the reexamination proceedings and
22 the litigation in preparing your declarations

1 for these IPRs, correct?

2 A. Yes, I reviewed the material.
3 I have not reviewed that document, whatever
4 you were talking about recently. And so I
5 just don't remember what was in there, what
6 it said.

7 Q. Are you aware that Belden had a
8 different expert in those proceedings named
9 Dr. Mark Horenstein?

10 A. I could probably -- I have not
11 looked at the information for quite some
12 time. I wasn't -- it's not the focus of this
13 particular declaration, and so I just don't
14 remember.

15 Q. Let me bring up an exhibit
16 titled BELDEN_EX_C. This one is not marked.
17 Can we mark it as Belden EX 2012, 2012?

18 (Exhibit 2012 marked)

19 Q. Mr. Cornelison, if you can turn
20 to this document in your stack of materials.
21 It's in the manila folder, I believe.

22 A. Oh, okay.

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

2 A. I am there.

3 Q. So this is titled Belden
4 Technologies, Inc. s and Belden CTD (Canada)
5 Inc. s Rebuttal Expert Report of Mark
6 Horenstein, Ph.D. Regarding Validity.

7 I'll represent that the pages
8 in Exhibit 2012 were previously produced to
9 CommScope as part of discovery in these IPR
10 proceedings, and that was included in the
11 shared file containing documents from the
12 Superior Essex litigation. It's a file named
13 "Belden_EX_C - Horenstein Report."

14 And looking at the cover, you
15 will also note that the document was
16 designated at that time as highly
17 confidential subject to protective order and
18 that certain pages have again redacted or cut
19 from that document accordingly, so this is
20 just an excerpt of that document.

21 Have you seen this document
22 before?

1 A. I do not remember -- I do not
2 remember seeing this document. I don't
3 recollect that, no, sir.

4 Q. If you could turn to Page 99 of
5 that document.

6 A. Okay.

7 Q. We will bring up Paragraph 238
8 in Exhibit 2012. I'm waiting for it to come
9 up on the screen here.

10 A. Yeah.

11 Q. Can we go off the record for a
12 second?

13 (Discussion off the record)

14 Q. So, Mr. Cornelison, if you
15 could turn to Page 99 in Exhibit 2012,
16 Paragraph 238.

17 Do you see that?

18 A. I see -- I see the paragraph,
19 yes.

20 Q. Do you see that it states, "Mr.
21 Baxter opines that Claim 27 of the '095
22 Patent-In-Suit is invalid within the meaning

1 of 35 U.S.C. 102 because it is allegedly
2 anticipated by German Pat. DE 297 19 866 A1
3 (the "'866 patent")."

4 Do you see that?

5 A. I see that.

6 MR. KOHLHEPP: Counsel, I'm
7 just going to interject here. I'm
8 going to object to this whole line of
9 questioning on the basis of foundation
10 and scope. He has already told you he
11 has never seen this document.

12 Q. (BY MR. HOEHNER) So here
13 German Patent DE 297 19 866 A1 is identified
14 as the '866 patent, correct?

15 A. Well, this is new material to
16 me, and I am not prepared to evaluate or form
17 an opinion about this document on the fly
18 like this. I would need a chance to review
19 it and understand the document, which to me
20 is just not possible in the timeframe we have
21 today.

22 So I really am not able to

1 respond, explain, describe, whatever, because
2 I would be doing that without a full
3 understanding of what I'm actually reading or
4 understanding because it would be a segment
5 of a bigger picture. So I'm really not able
6 to address this.

7 Q. So you can't answer whether
8 this '866 patent that's referring to German
9 Patent DE 297 19 866 A1?

10 MR. KOHLHEPP: Object to form.

11 THE WITNESS: It's still --
12 sure, I can see a word, or whatever, I
13 can see numbers on there, I can see
14 all of that stuff.

15 To form an opinion or respond
16 to this document or try to incorporate
17 somehow this in some kind of -- and
18 end up with an opinion or statement or
19 conclusion, I just can't -- I'm not in
20 the position to do that today. So I'm
21 just not able to really comment on
22 anything about this because I haven't

1 seen this before. It's not part of
2 the material I used to form the
3 opinion that I have and the
4 declarations.

5 Q. Your opinion is based on the
6 Superior Essex litigation and reexaminations,
7 correct?

8 THE REPORTER: Wait, I couldn't
9 hear you. Can you re-ask that?

10 Q. (BY MR. HOEHNER) You have
11 based your opinions on prior Superior Essex
12 litigation and reexamination involving the
13 patents-in-suit, correct?

14 If it helps, I'll direct you to
15 your list of materials considered in your
16 report.

17 A. Okay.

18 Q. Your declaration.

19 A. Are you referring to Line 6
20 on -- or bullet Page 5 of 1061?

21 Q. Correct. You say, "I have
22 reviewed and am familiar with the materials

1 discussed in my First Declaration, as well as
2 any additional materials discussed in this
3 Reply Declaration."

4 And in your initial
5 declaration, you listed materials from both
6 the litigation -- Superior Essex litigation
7 and the reexaminations, correct?

8 A. I don't know. I would have to
9 go back and look at that.

10 Q. Okay. We can bring up
11 materials considered. If you would bring up
12 Exhibit 1007 in the '537 IPR, if you would
13 turn to Page 5, it's marked Page 6 --
14 actually, go back a page and point to Exhibit
15 1003, excerpt of inter partes reexamination.

16 Next page -- and I can list
17 them all for you or you can look through this
18 yourself, but you cite and rely on
19 information from the reexamination
20 proceedings and the Superior Essex litigation
21 in forming your opinions, correct?

22 A. Well, that was in the first

1 declaration, those are documents I reviewed.

2 I will say that I did not use this document
3 that we're looking at, as originally
4 referenced, as part of my forming an opinion
5 and largely -- which largely was this
6 declaration response to Eldering.

7 So I was looking at points for
8 the response and I have reference materials
9 in my declaration that I did use in
10 particular for forming the opinion. And
11 although it's on the list and so are a whole
12 bunch of other things, too, but I did not use
13 that as part of forming my opinion and it has
14 been a long time since I have seen that
15 document. So I'm not ready to form an
16 opinion or review that one at this time.

17 Q. So are you saying you used
18 certain documents from the prior
19 reexamination litigation, but not other
20 documents that were in the possession of
21 CommScope, correct?

22 A. The documents I used for this

1 declaration here, I did not -- so the
2 materials used, the materials considered --
3 so the point being -- that I'm trying to make
4 is it's been a long time since I've reviewed
5 this document that we -- that you brought up.
6 And I did not use this document -- this
7 particular document in forming my opinion on
8 the declarations being reviewed today.

9 And given that this document
10 has not been seen by me for quite some time,
11 if I saw it, probably -- maybe I did, I have
12 to admit and say I don't recollect seeing
13 that document, that I'm not ready to form
14 opinions or analyze or discuss that
15 particular document today. I did not use
16 that in -- for this declaration.

17 MR. KOHLHEPP: So -- sorry,
18 finish and I'll object.

19 THE WITNESS: I'm finished.

20 MR. KOHLHEPP: Okay. I'm going
21 to interject here. I would like to
22 see a copy of this document. I'm just

1 a little confused. Is 2012 something
2 you filed or is this a newly marked
3 exhibit for --

4 MR. HOEHNER: Newly marked.

5 MR. KOHLHEPP: I'm sorry?

6 MR. HOEHNER: It's newly marked
7 for cross-examination.

8 MR. KOHLHEPP: Okay. This is a
9 newly marked -- okay.

10 MR. HOEHNER: But it was served
11 to CommScope as part of the file share
12 on the discovery motion previously.

13 MR. KOHLHEPP: Okay. Can I see
14 it? It's not on my screen.

15 MR. HOEHNER: If you want to
16 look at this document, that's fine.

17 MR. KOHLHEPP: I would like to
18 see what we're talking about here.

19 MR. HOEHNER: I can bring up
20 the document, too. I can go back to
21 the other Exhibit 2012.

22 MR. KOHLHEPP: So, my

1 apologies, I'm just momentarily
2 confused. I see a document here that
3 does not have an exhibit number on it.

4 MR. HOEHNER: We just marked it
5 as Exhibit 2012.

6 MR. KOHLHEPP: Just marked it
7 as Exhibit 2012, okay.

8 MR. HOEHNER: It was previously
9 served to CommScope as part of our
10 share file.

11 MR. KOHLHEPP: Okay. Go ahead,
12 I'm sorry.

13 MR. HOEHNER: It was served as
14 part of the discovery motion on prior
15 litigation to you.

16 MR. KOHLHEPP: Okay. And as a
17 further clarification, you keep
18 referencing the reexamination
19 proceedings. The cover of this
20 document, it appears to be not from
21 the reexamination, but it appears to
22 be from a district court proceeding in

1 the district of Delaware.

2 Am I looking at the right
3 document?

4 MR. HOEHNER: Yes.

5 MR. KOHLHEPP: So I guess I'm
6 confused why you keep referencing the
7 reexamination proceedings.

8 MR. HOEHNER: If you could turn
9 to -- go back to Exhibit 1007, look at
10 Page 7, which is marked Page 8. Part
11 of what Mr. Cornelison has relied on
12 were documents from Superior Essex
13 that's identified here.

14 MR. KOHLHEPP: Okay. But this
15 document is not identified there,
16 correct?

17 MR. HOEHNER; No.

18 MR. KOHLHEPP: Okay. And he
19 has told you he hasn't seen this
20 document, right?

21 MR. HOEHNER: Correct.

22 MR. KOHLHEPP: Okay. I

1 reassert my objection, foundation and
2 scope.

3 Q. (BY MR. HOEHNER) And so,
4 Mr. Cornelison, my question is, you relied on
5 various documents from prior litigation with
6 Superior Essex and prior reexaminations
7 involving the patent-in-suit, but you did not
8 rely on this document, correct?

9 A. I did not --

10 MR. KOHLHEPP: Sorry. I'm also
11 going to object to the form of that
12 question.

13 THE WITNESS: I did not -- I do
14 not recollect seeing this document in
15 front of me. And I did say that I did
16 not use this document as part of the
17 materials I considered to come up with
18 the opinions I expressed in the
19 declarations.

20 I hope that's responsive. I
21 intend it to be responsive.

22 Q. (BY MR. HOEHNER) If we turn to

1 Page 145 in Exhibit 2012.

2 A. I could turn there, but I'm not
3 in a position to make any comments or
4 analysis of what I would see.

5 Q. Well, let's turn there and look
6 at Paragraph 334.

7 MR. KOHLHEPP: I guess if it's
8 not already clear for the record, I am
9 objecting to this line of questions
10 about this newly marked
11 Exhibit 1012 -- I'm sorry, Exhibit
12 2012.

13 Q. (BY MR. HOEHNER) Do you see in
14 Paragraph 334, it starts out, "The '866
15 Patent discloses stranding of the individual
16 conductors to form each twisted pair, and
17 specifically discloses using 'SZ' stranding.
18 The '866 Patent states that 'the stranding of
19 pair 1 can consist of a so-called helix
20 stranding or an SZ stranding.' See
21 (translation of the '866 patent at Paragraph
22 3, Page 3)."

1 Do you see that?

2 A. I see it.

3 Q. So I understand you say you are
4 not going to be able to state an opinion.

5 But here, Dr. Horenstein expresses the
6 opinion that the individual conductors are
7 stranded form twisted pairs, correct?

8 A. That would be -- that would be
9 evaluating and forming an opinion about what
10 he said, and I'm not in a position to do that
11 today.

12 Q. And he quotes from a
13 translation of the '866 patent as part of
14 that opinion, right?

15 MR. KOHLHEPP: Same objection.

16 THE WITNESS: Same answer. I'm
17 not ready to -- I'm not ready to
18 describe or discuss or analyze or form
19 an opinion about what is being said in
20 this document.

21 Q. (BY MR. HOEHNER) Okay. And
22 you didn't use anything in this document in

1 forming your opinions in any of -- either of
2 these proceedings; is that correct?

3 A. That is correct.

4 MR. HOEHNER: No further
5 questions.

6 MR. KOHLHEPP: Okay. Let's go
7 off the record for a moment.

8 (Recess from 2:07 p.m. to 2:46
9 p.m.)

10 EXAMINATION

11 BY MR. KOHLHEPP:

12 Q. Mr. Cornelison, if you could
13 pull back Exhibit 1081.

14 A. Okay.

15 Q. And then turn to Paragraph 11.

16 A. Okay.

17 Q. And earlier you were asked some
18 of questions about Paragraph 11.

19 Do you recall that, generally?

20 A. Yes, I do.

21 Q. And in Paragraph 11, you say,
22 "My opinions do not change and would not

1 change whether one or the other definition is
2 applied."

3 Do you see that?

4 A. Yes, I see that.

5 Q. Is that statement correct?

6 A. That is a correct statement.

7 Q. Okay. And then you were also
8 asked, "Do you show how either construction
9 would result in the same conclusion in your
10 analysis?"

11 Do you recall that?

12 A. Yes, I believe so.

13 Q. Okay. And you answered, "I do
14 not."

15 Do you recall that?

16 A. Repeat the question, please.

17 Q. So you were asked, and I'm
18 quoting from the realtime transcription here,
19 "Do you show how either construction would
20 result in the same conclusion in your
21 analysis?" You were asked that by counsel
22 for Belden.

1 Do you recall that?

2 A. I do recall that.

3 Q. And then your answer was, "I do
4 not."

5 A. Yes, I do recall that.

6 Q. So my question is, why did you
7 answer that way?

8 A. I answered that way because I
9 did not provide a paragraph or a text or
10 anything to try to go into detail about the
11 two phrases, claim constructions, whatever
12 it's called there, that we were talking
13 between what I had in Paragraph 9 and
14 Paragraph 10.

15 So because I didn't provide
16 that detailed level and all I provided was
17 that Paragraph 11, that's why I answered the
18 way I did. I did not do a detailed paragraph
19 trying to articulate those two definitions in
20 more detail.

21 Q. Okay. But did you apply both
22 of those definitions to your analysis of the

1 prior art?

2 A. Yes, I did apply both
3 definitions to the prior art.

4 Q. And did you reach the same
5 conclusion for either definition?

6 A. I did, which is also explained
7 in Paragraph 11 where it did not change -- my
8 opinions do not change and would not change
9 whether one or the other definitions is
10 applied.

11 Q. Okay. So why do your opinions
12 not change?

13 A. Well, in -- I talk about, in
14 particular, describing the twisted pair today
15 and the technology of twisted pair. And I'm
16 talking about Exhibit 1017, and I provide an
17 excerpt out of 1017. And 1018, I also did an
18 excerpt around there. And also 1029.

19 So you take the definition of
20 the words in nine, which describe what is
21 being described in 1017, 1018, and 29, and
22 they talk about the effect of having a

1 twisted pair, which I list there in
2 Paragraph 10 an excerpt where, in 1017, the
3 twist also helps keep the conductors of the
4 pair balanced. And then also in 1018 where
5 they decrease unbalanced mutual capacitance.
6 And also 1029 where cables with twisted pairs
7 are used where balanced signal transmissions
8 required.

9 So the use of twisted pair in
10 Paragraph 9 results in the features that I
11 describe and various other documents that
12 describe the benefits of having a twisted
13 pair. And I went through those in
14 Paragraph 10.

15 Q. And were those results you're
16 referring to -- in some of the art you cite
17 in Paragraph 10, were those results known to
18 be results of a twisted pair in the prior
19 art?

20 A. Yeah, these documents were
21 explaining the characteristics and the nature
22 of a twisted pair. And, again, I read some

1 excerpts. We can go back to those if we want
2 to review those as well in more detail.

3 Q. The references that you talked
4 about in your declaration, did they have
5 those characteristics of an ordinary twisted
6 pair that you're referring to in
7 Paragraph 10?

8 A. They did. They were twisted
9 pairs of conductors, twisted pair of
10 insulated conductors, as I cite in
11 Paragraph 9, and those references describe
12 the characteristics of such a construction,
13 as I talked about in various references
14 included in Paragraph 10.

15 Q. Okay. So did the references
16 that you were looking at for your
17 declarations have twisted pairs of conductors
18 where each conductor of the pair was twisted
19 around each other?

20 A. Yes, the various patents I
21 reviewed, art for the declaration, they all
22 had the consistent pattern -- the consistent

1 construction of using twisted pairs. And I
2 would see those twisted pairs and those
3 cables as having characteristics described in
4 1017, 1019, 1029.

5 Q. Because those are describing
6 ordinary twisted pairs?

7 A. Yes, ordinary twisted pairs.

8 MR. HOEHNER: Objection,
9 leading.

10 MR. KOHLHEPP: No further
11 questions.

12 We will reserve the right to
13 read and sign.

14 MR. HOEHNER: Just a couple
15 questions.

16 FURTHER EXAMINATION

17 BY MR. HOEHNER:

18 Q. Mr. Cornelison, did you discuss
19 your testimony during the break you just
20 took, did you discuss your testimony earlier
21 today with counsel for CommScope?

22 A. Let me clarify the question,

1 please.

2 Did I discuss the testimony I
3 made before -- before our break, before your
4 final question statement, is that your
5 question?

6 Q. Yes.

7 A. No, I did not.

8 Q. Did you discuss the testimony
9 you just gave with counsel?

10 A. I did briefly.

11 Q. And responding to CommScope's
12 counsel's questions just now, you said that
13 you applied both constructions that are shown
14 in Paragraphs 9 and 10 of Exhibit 1081,
15 correct?

16 A. I would say I did use both
17 constructions because both constructions --
18 because all of the art was twisted pair. I
19 did not need to try to distinguish between
20 the two.

21 Q. So in your analysis, in your
22 declarations in these IPRs, you did not show

1 separate analyses for these constructions
2 under Paragraph 9 or 10, correct?

3 A. I did not show separate
4 analyses. I did not need to show separate
5 analyses.

6 Q. So in response to counsel's
7 questions just now, you had stated with
8 regard to the construction pattern in nine
9 that the references you analyzed met that
10 construction of twisted pair, correct?

11 A. Yes, I did.

12 Q. But did you show how the
13 references met the construction of Paragraph
14 9 in your declaration?

15 A. References being the 1017 or
16 the various arts I discussed and the various
17 patents I discussed?

18 Q. The art that you discussed in
19 your declaration that you used to reach your
20 conclusions about the '095 and '537 patents.

21 A. The art is -- is twisted pair
22 and ordinary twisted pair, the ordinary

1 meaning of the twisted pair conductors, the
2 relevant time in Paragraph 10, using those
3 words.

4 And, again, I cite where the
5 ordinary meaning of a twisted pair conductor
6 at the relevant time such that the various
7 references, has the various
8 characteristics of -- I don't want to read
9 the same thing, but has the characteristics
10 there as I show in Paragraph 10.

11 So I did not run into a
12 situation through my analysis that I was -- I
13 had a need to try to decide whether
14 Paragraph 9 or Paragraph 10 was to be used
15 because they were -- as I say in
16 Paragraph 11, my opinions did not -- don't
17 change because they are consistent whether
18 one definition or the other was applied.

19 Q. In your declaration, while you
20 reached conclusions about the various
21 references under the different constructions
22 in Paragraph 9 and 10, you didn't show in

1 your written declarations how those
2 constructions reached those conclusions,
3 correct?

4 MR. KOHLHEPP: Object to form.

5 THE WITNESS: I think, Tom,
6 that your question is answered by
7 Paragraph 11. No matter which
8 definition I choose, nine or ten, it
9 got me the same conclusion. In
10 particular, like I do in the
11 declaration, it would not change --
12 did not and do not change -- or would
13 not change -- excuse me, I'm getting
14 too fast here.

15 But reading Paragraph 11, the
16 point is that it doesn't matter which
17 definition I applied in this case
18 because I got the same answer either
19 way.

20 Q. Okay. You reached those
21 conclusions, you came to that answer using
22 both declarations, but there is nothing in

1 your written report that shows how you
2 reached the same conclusion for each
3 construction, correct?

4 MR. KOHLHEPP: Object to form.

5 THE WITNESS: Well, it is true
6 there is nothing in my declaration
7 that kind of debates nine or ten back
8 and forth, which one should I use or
9 why is it different.

10 And the reason it's not in
11 there is I just never got -- I did not
12 have the need to try to decide or
13 discern between nine and ten because
14 they are consistent and I was never in
15 a conflict situation where I needed to
16 try to figure out which one.

17 MR. HOEHNER: Okay. No further
18 questions.

19 MR. KOHLHEPP: We will reserve
20 the right to read and sign.

21 (Proceedings concluded at 3:00 p.m.)

22

1 REPORTER'S CERTIFICATION OF THE ORAL

2 I, Donna Wright, a Certified Shorthand
3 Reporter and Notary Public in and for the
4 State of Texas, hereby certify to the following:

5 That the witness, KENNETH CORNELISON,
6 was remotely duly sworn by the officer and
7 that the transcript of the oral deposition is
8 a true record of the testimony given by the
9 witness;

10 That the original deposition was
11 delivered to Mr. Peter Kohlhepp;

12 That a copy of this certificate was
13 served on all parties and/or the witness
14 shown herein on _____;

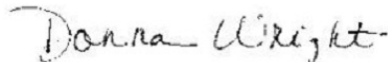
15 I further certify that pursuant to FRCP
16 Rule 30(3) that the signature of the deponent:

17 X was requested by the deponent or
18 a party before the completion of the
19 deposition and that the signature is to be
20 before any notary public and returned within
21 30 days from date of receipt of the
22 transcript. If returned, the attached
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changes and the reasons therefore:

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or a party before the completion of the
deposition.

I further certify that I am neither
counsel for, related to, nor employed by any
of the parties or attorneys in the action in
which this proceeding was taken, and further
that I am not financially or otherwise
interested in the outcome of the action.

Certified to by me on this, the 30th
day of July, 2024.

19 

20 Donna Wright, CSR No. 1971
21 Expiration Date: 11/20/24
22 Firm Registration No. 719

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1 Kenneth Cornelison, c/o
Carlson, Caspers, Vandenburg & Lindquist P.A.
2 Capella Tower, Suite 4200, 225 South Sixth Street
Minneapolis, Minnesota 55402

3
Case: CommScope Technologies LLC v. Belden Inc.
4 Date of deposition: July 25, 2024
Deponent: Kenneth Cornelison

5
6 Please be advised that the transcript in the above
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7 The deponent may come to this office to sign the transcript,
8 a copy may be purchased for the witness to review and sign,
9 or the deponent and/or counsel may waive the option of
10 signing. Please advise us of the option selected.
11 Please forward the errata sheet and the original signed
12 signature page to counsel noticing the deposition, noting the
13 applicable time period allowed for such by the governing
14 Rules of Procedure. If you have any questions, please do
15 not hesitate to call our office at (202)-232-0646.

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5 Witness Name: Kenneth Cornelison
Deposition Date: July 25, 2024

6
7 I do hereby acknowledge that I have read
and examined the foregoing pages
of the transcript of my deposition and that:

8
9 (Check appropriate box):
() The same is a true, correct and
10 complete transcription of the answers given by
me to the questions therein recorded.
11 () Except for the changes noted in the
attached Errata Sheet, the same is a true,
12 correct and complete transcription of the
13 answers given by me to the questions therein
14 recorded.

15
16 _____
17 DATE WITNESS SIGNATURE
18
19
20
21 _____
22 DATE NOTARY

Errata Sheet

Case: CommScope Technologies LLC v. Belden Inc.

Witness Name: Kenneth Cornelison

Deposition Date: July 25, 2024

Page No.	Line No.	Change
8	10-11	Replace "Casper Carlson" with "Carlson Caspers". [Reason for edit: misspoke]
67	7	Replace "kin" with "in". [Reason for edit: typographical error in question]
90	8	Replace "offer up ten" with "often ends up with". [Reason for edit: typographical error]
129	4	Replace "paved" with "payed". [Reason for edit: typographical error]
176	22	Replace "declarations" with "definitions". [Reason for edit: typographical error in question]

Kenn Cornelison

Signature

Aug 14, 2024

Date

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