

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

4
5 YEALINK (USA) NETWORK TECHNOLOGY CO., LTD., and

6 YEALINK NETWORK TECHNOLOGY CO., LTD.,

7 Petitioners,

8 v.

9 BARCO N.V.,

10 Patent Owner

11
12 U.S. Patent No. 10,684,972

13 IPR2025-00491

14
15 DEPOSITION OF
16 MICHAEL C. BROGIOLI, PH.D.
17 REMOTELY HELD VIA VIDEOCONFERENCE TECHNOLOGY
18 DECEMBER 18, 2025

19
20 REPORTED BY:
21 LYNETTE MARIE NELSON,
22 CA CSR No. 11585, OR CSR No. 250121,
TN LCR No. 896, RPR, CRR, CCRR, CRG,
REALTIME SYSTEMS ADMIN.

1 DEPOSITION OF MICHAEL C. BROGIOLI, PH.D.,
2 taken by the Petitioner, commencing at the hour of
3 9:03 a.m. Central Time on Thursday, December 18,
4 2025, held remotely via videoconference, before
5 Lynette Marie Nelson, Certified Shorthand Reporter
6 in and for the State of California, Oregon, and
7 Tennessee.

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I N D E X

WITNESS: MICHAEL C. BROGIOLI, PH.D.	PAGE
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1 REMOTE DEPOSITION;
2 THURSDAY, DECEMBER 18, 2025, 9:03 CENTRAL TIME
3 -o0o-
4 THE STENOGRAPHER: Good morning.
5 This marks the beginning of the
6 deposition of Michael C. Brogioli, Ph.D., in the
7 matter of Yealink Network Technology, petitioners,
8 versus Barco NV, patent owner, IPR2025-00491, U.S.
9 Patent No. 10,684,972 in the United States Patent
10 and Trademark Office, before the Patent Trial and
11 Appeal Board.
12 This deposition is being held via Zoom
13 videoconference technology on December 18, 2025.
14 The time is 9:03 Central.
15 My name is Lynette Nelson, RPR, CSR No.
16 11585, with principal offices in Knoxville,
17 Tennessee.
18 Would counsel state your appearances for
19 the record.
20 MR. GREENLEAF: This is Kevin Greenleaf,
21 counsel for petitioner Yealink.
22 MR. ANDREWS: And this is Joshua Andrews,

1 counsel for patent owner Barco-NV, and I'm joined
2 today by my colleague Erik Halverson.

3 THE STENOGRAPHER: Please raise your
4 right hand to be sworn.

5 (Witness sworn.)

6 THE WITNESS: Yes, I do.

7 THE STENOGRAPHER: Thank you.

8
9 MICHAEL C. BROGIOLI, Ph.D.,
10 having been duly sworn by the Certified Shorthand
11 Reporter, was examined and testified as follows:

12 EXAMINATION

13 BY MR. GREENLEAF:

14 Q. Good morning, Dr. Brogioli. How are you?

15 A. Good. Good morning. I'm doing well.

16 Q. Nice to hear. And you're in K&L Gates'
17 offices in Austin, I'm assuming?

18 A. That's correct.

19 Q. All right. How much time did you spend
20 preparing for this deposition today?

21 A. Maybe 20 hours, something in that range.

22 Q. Okay.

1 A. 25.

2 Q. And I see you have a computer in front of
3 you. You have all of the exhibits in this
4 proceeding; is that correct?

5 A. I -- I should. I've got at least
6 unmarked copies, electronic copies, of my report,
7 the patent, and the various references in my
8 declaration. And then I have physical copies as
9 well.

10 Q. All right.

11 So I'll just assume that you have things
12 that we're going to discuss as you've listed.
13 There may be an exhibit or two that I might
14 upload, but other than that, if you need
15 something, let me know, but I'll just otherwise
16 assume that you have it. Is that okay?

17 A. Sure. Thanks.

18 Q. All right. So there are a couple of
19 grounds in this case, one based on the Beel
20 reference and another using a combination of
21 Kaplan and Van de Laar; is that correct?

22 MR. ANDREWS: Objection. Form.

1 THE WITNESS: That's -- mostly correct.
2 One of the -- Ground 1 involves a Beel reference,
3 whereas -- and others, whereas Ground 2, I
4 believe, does not involve the Beel reference.

5 BY MR. GREENLEAF:

6 Q. Yeah. All right. Let's talk about the
7 Beel reference first of all.

8 Do you have a copy of that?

9 A. I do.

10 Q. And for Ground 1, one of the arguments in
11 your declaration is that the combination of Beel
12 and Dinka does not disclose the limitation
13 starting out the base unit and the first
14 peripheral device being adapted to transmit and
15 receive data respectively.

16 Is that correct?

17 A. That's one of the topics I discussed in
18 my Ground 1; that's correct.

19 Q. All right. If you go to paragraph --
20 let's just start at page 43 of your declaration.

21 We have a picture with highlighted
22 portions of Figure 1A of Beel?

1 A. Okay.

2 Q. And you identify microphones in red and
3 cameras in yellow; correct?

4 A. That's correct, yes.

5 Q. If you could turn to paragraph 120 in
6 Beel. Let me know when you're there.

7 A. Okay.

8 Q. The last sentence of that paragraph
9 states:

10 "Another optional item is a
11 microphone or microphones 38 that can
12 be used to transfer audio, e.g., to
13 the processing devices 31."

14 Do you see that?

15 A. I do.

16 Q. And your position is that the microphones
17 transfer audio data directly to the processing
18 device 31 and -- and -- is that correct?

19 A. Let me just go back to my declaration for
20 you.

21 Q. I think it's on the next paragraph that
22 we were just looking at. It's actually 102, I

1 think.

2 A. That's what I discussed in this
3 paragraph 1 of 2 of my declaration, that the
4 microphones you were asking about can talk or
5 communicate on the processing device.

6 Q. So if you go to Figure 10 of Beel.

7 A. Okay.

8 Q. What does Figure 10 illustrate?

9 A. It looks like it is a picture of a
10 Barco -- one of the Barco dongles.

11 Q. And that's the same as the claimed
12 peripheral device or an example of a claimed
13 peripheral device; correct?

14 MR. ANDREWS: Objection. Form.

15 THE WITNESS: I would say this is a
16 picture of a Barco dongle as it's used in the Beel
17 reference in the '972 patent. I don't recall
18 seeing an image -- that same image in the '972.

19 BY MR. GREENLEAF:

20 Q. But you understand that Beel discusses a
21 peripheral device; correct?

22 A. That Beel uses the phrase "peripheral

1 device" in various places, yes.

2 Q. And Figure 10 is an example of a
3 peripheral device; correct?

4 A. Let me just go back to Beel's description
5 of that figure for you.

6 Q. Paragraph 103.

7 A. Okay. So paragraph 103 of Beel states:

8 "Figure 10 shows an embodiment of
9 a peripheral device in accordance
10 with an embodiment". . .

11 Of this invention here in the Beel
12 reference.

13 Q. And then if you look at Figure 5 of Beel,
14 what does Figure 5 illustrate?

15 A. Figure 5 of Beel describes as it's in
16 Beel's paragraph 98:

17 "Show a base node and a
18 peripheral device."

19 Let me start over.

20 "Figures 3 to 5 show a base node
21 and a peripheral device and a client
22 processing device in accordance with

1 embodiments of the present
2 invention."

3 And in Figure 5 we see this block C
4 labeled "Computer" with various components within
5 it.

6 BY MR. GREENLEAF:

7 Q. Figure 5 is an example of a client
8 device; correct?

9 MR. ANDREWS: Objection. Form.

10 THE WITNESS: It states that Figure 5
11 is -- or 3 to 5 are showing peripheral device and
12 client processing device as described in the
13 Beel -- or as part of embodiments in the Beel
14 reference.

15 MR. GREENLEAF: Josh, what was the
16 objection? Could you explain your objection,
17 please, to my question?

18 MR. ANDREWS: Your question -- my
19 objection to your question?

20 MR. GREENLEAF: Yeah. What was the
21 problem with its form?

22 MR. ANDREWS: I thought it presupposed

1 facts. And I'm happy to give a more -- do you
2 need more than that?

3 MR. GREENLEAF: Yes, please.

4 MR. ANDREWS: Yeah. So my understanding
5 is that it presupposed facts that Dr. Brogioli had
6 not already testified to.

7 BY MR. GREENLEAF:

8 Q. So in paragraph -- right above
9 paragraph 170, Dr. Brogioli, in Beel. Do you see
10 the word "client device" there?

11 A. "Client" in paragraph --

12 Q. It's paragraph 169. It's right above
13 paragraph 170. Paragraph 169 is kind of long. So
14 just go to paragraph 170 and look at the sentence
15 above it, you will see the term "client device";
16 is that correct?

17 A. I see that phrase in paragraph 169,
18 that's correct.

19 Q. Can you identify an example of a client
20 device in the figures of Beel, please?

21 A. So it looks like the way Beel describes
22 various figures in paragraph 96 referring to

1 Figure 1A talks about a combination of a client
2 processing device; continuing down, paragraph 98
3 describes Figures 3 to 5 where we were discussing
4 a moment ago mentioning Beel reference client
5 processing device.

6 It looks like paragraph 101 refers to
7 Beel's Figure 8, which is showing Beel's
8 processing device in accordance with embodiment of
9 present invention.

10 Figure 9 is also mentioning Beel's client
11 processing device.

12 And then I guess I would stop there, at
13 least for the figures in Beel.

14 Q. So it is your opinion that Figure 5 does
15 not illustrate a client processing device?

16 MR. ANDREWS: Objection. Form.

17 THE WITNESS: It looks like what Figure 5
18 is showing, according to Beel, a reference to a
19 client processing device in Beel for what Beel
20 states in paragraph 98 at least.

21 BY MR. GREENLEAF:

22 Q. From the embodiment of Figure 5, how

1 would a client processing device receive
2 microphone data in Beel's system?

3 MR. ANDREWS: Objection. Form.

4 MR. GREENLEAF: Can you please explain
5 the objection?

6 MR. ANDREWS: Yeah, I think that it's a
7 very vague question, and there's no -- you're
8 asking a very open-ended question not tied to any
9 specific passage or testimony already provided by
10 Dr. Brogioli.

11 BY MR. GREENLEAF:

12 Q. Dr. Brogioli, do you recall talking about
13 paragraph 120 and the disclosure of about:

14 "Microphones 38 that can be used
15 to transfer audio data, e.g., to the
16 processing devices 31."

17 Correct?

18 A. I believe that was a discussion in
19 reference to, I think, my paragraph 102.

20 Q. Yes. And it's discussion of
21 paragraph 120 of Beel; correct?

22 A. That's -- at least 120 of Beel references

1 the microphone; correct.

2 Q. And we've already established that
3 Figure 5 illustrates a client processing device;
4 correct?

5 MR. ANDREWS: Objection. Form.

6 THE WITNESS: Looks like.

7 MR. GREENLEAF: Can you explain your
8 objection, Josh?

9 MR. ANDREWS: Yep, I'm happy to.

10 So the -- this is just presupposing --
11 it's mischaracterizing Dr. Brogioli's testimony.
12 You can refer to the record, but that's not on the
13 exact language he provided so I objected to the
14 form of that question.

15 MR. GREENLEAF: Dr. Brogioli testified,
16 according to the record:

17 "Figures 3 to 5 show a base node
18 and peripheral device and a client
19 processing device."

20 Does that clarify the fact that your
21 objection was improper, Josh?

22 MR. ANDREWS: That's your

1 characterization.

2 I'm here to reserve the rights --
3 preserve the rights of my client. I think we can
4 move on.

5 MR. GREENLEAF: I'm just reading you the
6 transcript. That's not my characterization. I
7 read verbatim from the transcript.

8 So you can continue to object. I just
9 would like to avoid frivolous objections and
10 coaching is my concern. And if this continues,
11 I'm willing to call the Board on your objections
12 to my very simple questions that are seemingly --

13 MR. HALVERSON: Your objections are
14 not -- the objections are not frivolous.

15 You're welcome to call the Board if you
16 would like to do that. Why don't we start it now
17 because it oftentimes takes a couple of hours to
18 get that taken care of. But so far, the
19 characterization of certain testimony that has
20 then been reiterated in different context as
21 something that has been said when it has not been
22 said is not a proper question. So if you would

1 like to call the Board, why don't we go off the
2 record and you can start that process now.

3 MR. GREENLEAF: I do not want to call the
4 Board right now. If you want to call the Board
5 right now, you're welcome to do it, but I'm just
6 warning you that character -- mischaracterizations
7 of my questions as mischaracterizing the record
8 when I am literally reading verbatim from the
9 court reporter's transcript, make the appearance
10 of coaching the witness. And I will call the
11 Board.

12 MR. HALVERSON: If you don't want to call
13 them, you don't have to call them. We can keep
14 going.

15 MR. GREENLEAF: Mr. Halverson, I will, at
16 some point, be willing to call the Board, but I do
17 not want to do that right now. It's up to you
18 whether to call the Board at this point. I'm not
19 ready, but I may soon.

20 MR. HALVERSON: Sounds good.

21 BY MR. GREENLEAF:

22 Q. Dr. Brogioli, according to your own

1 testimony, Figure 5 shows a base node and
2 peripheral -- let me -- let me restart that just
3 to make sure I get it correct. Scratch that
4 question.

5 You testified earlier it looks like what
6 Figure 5 is showing, according to Beel, a
7 reference to a client processing device; is that
8 correct?

9 A. I was reading back the -- what Beel
10 states in his paragraph 98 that:

11 "Figures 3 to 5 show a base node
12 and a peripheral device and a client
13 processing device in according with
14 the present embodiments" of the
15 invention of Beel.

16 Q. So does Figure 5 display a base node, a
17 peripheral device, or a client processing device?

18 A. It looks like if we go back to Figures 3
19 through 5, Beel, Figure 3 has text within the
20 larger labeled B block, it says "Base Unit."

21 Figure 4 has a block, a block D labeled
22 "Dongle."

1 And it has a Figure 5 as the outer block
2 labeled C as "Computer."

3 It looks like this may be a high-level
4 Figure 5 being a high-level illustration of a
5 client processing device showing that there is a
6 GUI and a WAN, things like that.

7 Q. The question again was: Does Figure 5
8 display a base node, a peripheral device, or a
9 client processing device?

10 A. It looks like Figure 5 is illustrating
11 what would be, at a high level, a -- per the
12 language of paragraph 98, client processing
13 device.

14 Q. If we go to Figure 1A, it illustrates
15 elements 31. Do you see that?

16 A. Figure 1A, there's a block 31. That's
17 right.

18 Q. And Beel describes them alternatingly as
19 processing devices or user processing devices or
20 client processing devices. For example, in
21 paragraph 127, it describes 31 as a client
22 processing device; is that correct?

1 A. Paragraph 127 of Beel, second-to-third
2 line down, does reference client processing device
3 31.

4 Q. So if we go back to paragraph 120, it
5 discusses processing devices 31; is that correct?

6 A. It mentions processing devices 31;
7 correct.

8 Q. An example of a processing device is
9 Figure 5 of Beel; correct?

10 A. That sounds right. Figure 5 is that
11 high-level illustration of a client processing
12 device or processing device of Beel.

13 Q. In that example of a processing device,
14 how would it receive audio as described in
15 paragraph 120 of Beel?

16 MR. ANDREWS: Objection. Form.

17 MR. GREENLEAF: What is the problem with
18 my question, Mr. Andrews?

19 MR. ANDREWS: So the question is asking
20 for testimony limited to a specific paragraph and
21 to the extent that there are other avenues or
22 other -- other potential ways audio can

1 communicate -- be communicated, not just to -- not
2 just in the ways described in paragraph 120, I was
3 objecting to show that.

4 I still am permitting Dr. Brogioli to
5 answer the question, of course, but I'm preserving
6 our rights for the record.

7 MR. GREENLEAF: So you're attempting to
8 show that Dr. Brogioli -- sorry. Let me clarify.

9 You're attempting to show that I'm asking
10 a question for testimony limited to a specific
11 paragraph and that there are other avenues or
12 potential ways that audio can be communicated.
13 And you're attempting to show that to
14 Dr. Brogioli?

15 MR. ANDREWS: I'm not attempting to show
16 anything to Dr. Brogioli. I'm merely raising an
17 objection to the form of the question.

18 MR. GREENLEAF: Who are you attempting to
19 show what you're attempting to show?

20 MR. ANDREWS: I'm not attempting to show
21 anything. I am preserving our rights based on the
22 form of the question.

1 MR. GREENLEAF: Well, you said you were
2 objecting to show something, and I'm wondering who
3 you are objecting to show something to.

4 The point, Mr. Andrews, is I believe that
5 you are leading the witness and it's getting a bit
6 absurd.

7 So we can continue and, again, renew my
8 call -- my suggestion that we call the Board to
9 avoid these --

10 MR. HALVERSON: Go ahead. Do it, Kevin.
11 If you want to call the Board, call the Board.
12 Stop threatening Josh, call the Board. His
13 objection is a proper objection.

14 BY MR. GREENLEAF:

15 Q. Dr. Brogioli, the question is: How would
16 the processing device illustrated in Figure 5 of
17 Beel receive audio data as described in
18 paragraph 120 of Beel?

19 A. I would say I could connect a microphone
20 by a physical wire connection or otherwise.

21 Q. For example, a USB microphone could be
22 connected to that interface 2 to receive audio

1 data at the client device; correct?

2 A. I guess I was referring to an audio
3 input/output jack that's on laptops, things like
4 that, or I could connect a microphone directly to
5 the laptop in other ways, Bluetooth, something
6 like that.

7 Q. So you're saying it would be obvious to
8 include an audio jack or Bluetooth receiver on the
9 computer illustrated in Figure 5?

10 MR. ANDREWS: Objection. Form.

11 THE WITNESS: No, I would say that a
12 person of skill reading Beel at the time of Beel
13 would realize that things such as laptops have
14 that functionality.

15 BY MR. GREENLEAF:

16 Q. So it would not be obvious to use a USB
17 microphone, that's your opinion; correct?

18 MR. ANDREWS: Objection. Form.

19 THE WITNESS: I would say taken outside
20 the confines of the claims of the patent we're
21 talking about, there are USB-flavored microphones
22 that were available for purchase or USB-wired

1 headsets or something like that to connect
2 directly to a -- a laptop.

3 BY MR. GREENLEAF:

4 Q. Are there other ways that a person of
5 ordinary skill in the art would have understood,
6 based on the disclosure of Beel, that the
7 processing device illustrated in Figure 5 could
8 receive audio data from a microphone?

9 A. So in the context of the processing
10 device receiving, in this example, microphone
11 audio directly from a microphone, two examples are
12 a wired connection or some, you know, Bluetooth or
13 something like that. There may be other examples.
14 I haven't performed that analysis.

15 Q. Would a person of ordinary skill in the
16 art understand that the dongle illustrated in
17 Figure 4 could be connected to the USB interface 2
18 illustrated in Figure 5?

19 A. As I recall, and I'm looking at Figure 4
20 and 5, they both disclose a USB interface 2.

21 Q. Would a person of ordinary skill in the
22 art have understood that the dongle in Figure 4

1 could be plugged into the USB interface of
2 Figure 5?

3 A. I think that's fair. That's what it's
4 illustrating in -- in these various figures that
5 they have the same USB interface -- or a USB
6 interface.

7 Q. You testified a moment ago that in the
8 context of the processing device receiving in this
9 example microphone audio data directly from a
10 microphone, two examples are a wired connection or
11 some, you know, Bluetooth or something like that.

12 Would Wi-Fi be another example of a way
13 that audio data could be transferred to the
14 processing device?

15 A. It sounds like there's two different
16 questions in there.

17 What I was talking about earlier was, and
18 as I discuss in my declaration in -- at least in
19 paragraph 102, is that a microphone can connect
20 directly to a processing device such as a laptop.

21 Q. Does paragraph 120 of Beel use the word
22 "directly"?

1 Let me reask the question.

2 Paragraph 120 of Beel does not use the
3 word "directly"; correct?

4 A. I don't see the word "directly" used
5 verbatim in that paragraph.

6 Q. But it's your opinion that the audio data
7 would not be transferred through the processing --
8 sorry, let me restate the question.

9 It's your opinion that the person of
10 ordinary skill in the art reading paragraph 120
11 would not have understood that the audio data
12 being transferred would go through the dongle
13 illustrated in Figure 4 to the processing device
14 of Figure 5; correct?

15 A. I would answer that in that what
16 paragraph 120 is disclosing, and as I talk about
17 in my paragraph 102, is that the microphone can be
18 used to transfer audio to the processing device
19 just as I say in my 122 and as Beel says in
20 paragraph 120.

21 Q. You gave the example of a USB microphone
22 or a Bluetooth interface on the processing device.

1 But those aren't illustrated in Figure 5; correct?

2 A. If I go back to Figure 5, looks like what
3 Figure 5 is illustrating is a graphical user
4 interface 18, an app icon 17, and a run-time
5 execution context client software and RAM 25. And
6 the upper label says "Computer."

7 Q. You're familiar with Barco system;
8 correct?

9 A. That's -- well, at least the Barco
10 systems I talk about in my declaration; that's
11 correct.

12 Q. I would like to go to page 64 of your
13 declaration. Let me know when you're there,
14 please.

15 A. Okay.

16 Q. This is discussing the limitation that
17 we've been discussing here about the first
18 peripheral device being adapted to transmit and
19 receive data respectively; correct?

20 A. That looks correct. And in one note on
21 my end, I have the Subheading D above that. I
22 stated '951 patent, it should be '972. And I may

1 have that in one or two other places as well.

2 Q. Okay.

3 A. But we're talking about the '972 patent.

4 Q. Thank you.

5 Are there any other mistakes you want to
6 identify at this point?

7 A. I think it's just there may have been
8 places where I said '951 versus '972 in one or two
9 other places.

10 Q. So if you go to the next page on 65,
11 what -- would it -- well, here, why don't I just
12 share my -- well, no, I won't do that. I can
13 share my screen if you want me to, but on page 65,
14 it has a picture of the Barco dongle and your
15 laptop; correct?

16 A. That's right.

17 And actually, I want to add to my prior
18 answer. I think in my Ground 2 somewhere, I
19 mention the combination of references from Ground
20 1, maybe one of the first sentences, versus the
21 combination for Ground 2. It should be pretty
22 self-evident, but I think that was the other --

1 one other issue that I noticed.

2 Q. Those are pretty obvious typos. That's
3 fine.

4 So back to page 65, again, it illustrates
5 Barco's dongle connected to your laptop; correct?

6 A. That's correct. Barco dongle connected
7 to the test machine.

8 Q. And that's fairly similar to Figure 10 of
9 Beel; correct? The dongle, that is?

10 A. I would say they look visually similar.
11 In terms of the visual in Figure 10 and the visual
12 of the -- or the picture in my report and the
13 physical appearance of the dongle I used.

14 Q. And Figure 4 of Beel is a more abstract
15 illustration of the dongle illustrated in Beel's
16 Figure 10; correct?

17 A. It looks like a -- an abstraction of the
18 dongle or components that comprise that dongle of
19 Beel and it looks like where Figure 10 has -- an
20 illustration of a Barco dongle in relation to
21 Beel.

22 Q. And it's your opinion that the dongle

1 illustrated on page 65 of your declaration is
2 configured to transmit and receive data over the
3 communications network from the functional device;
4 correct?

5 A. I think you're reading back the language
6 I have for Claim Limitation 1C in my
7 paragraph 148, that is the base unit and
8 peripheral device.

9 Q. I was. And the question again is --

10 THE STENOGRAPHER: Mr. Greenleaf, I think
11 you were frozen.

12 MR. GREENLEAF: Yeah, let's keep going.
13 Man. Let's go off the record for a minute.

14 THE STENOGRAPHER: We're off the record.

15 (A recess was taken.)

16 MR. GREENLEAF: Are we back on the
17 record? All right.

18 BY MR. GREENLEAF:

19 Q. Sorry for the technical difficulties. So
20 back to the question.

21 That the dongle illustrated on
22 paragraph -- sorry, page 65 of your declaration is

1 configured to transmit and receive data over the
2 communications network from a functional device;
3 correct?

4 A. The dongle that I discuss in this section
5 of my report per the claim, that's correct.

6 Q. And it's your opinion the dongle
7 illustrated in Figure 10 of Beel is not configured
8 to transmit and receive data over the
9 communications network from a functional device;
10 correct?

11 A. That's per the claim language, the dongle
12 or peripheral described in Beel is not -- does not
13 do that.

14 Q. And the basis for your opinion is the
15 fact that paragraph 120 of Beel does not say
16 microphone data goes through the peripheral
17 device; correct?

18 MR. ANDREWS: Objection. Form.

19 THE WITNESS: I would say it would be the
20 opinions in my declaration as a whole. But one of
21 the things I discuss is that paragraph 120 and I
22 think the surrounding paragraphs of Beel.

1 BY MR. GREENLEAF:

2 Q. If you look at Figure 9 of Beel.

3 A. Okay.

4 Q. It states it's a "Client operating
5 device"; correct?

6 A. I see that. Yes.

7 Q. And we could also call that a client
8 processing device; correct?

9 A. One moment.

10 That looks like, in fact, what Beel
11 states in paragraph 102 that it refers to a client
12 processing device.

13 Q. And it illustrates a Wi-Fi interface;
14 correct?

15 A. That's correct, yes.

16 Q. So one way that the client operating
17 device in Figure 9 could receive microphone audio
18 data is through that Wi-Fi interface; correct?

19 A. I would say it looks like Beel is
20 describing this client operating device that has a
21 Wi-Fi interface. Looks like that could be used to
22 connect to a Wi-Fi network of some kind.

1 Q. And the processing device could receive
2 audio data, for example, through the Wi-Fi
3 interface; correct?

4 A. I guess in a general sense if I were to
5 use a laptop and stream Capital Music or something
6 over a Wi-Fi network, I could receive music over a
7 Wi-Fi network.

8 Q. Or an example of paragraph 120 of Beel,
9 the processing device could receive the microphone
10 audio data using Wi-Fi interface; correct?

11 A. I don't think that that's what 120 is
12 talking about. The sentence I was discussing
13 earlier talks about the microphone used to
14 transfer audio to the processing device.

15 Q. And how would the processing device
16 receive the audio data?

17 A. Just as we talked about before the break,
18 I mean, I could have a microphone that's wire
19 connection to the processing device or some other
20 connection. I think we had discussed something
21 like a Bluetooth microphone.

22 Q. Where does Beel disclose a wire

1 connection from the processing device to a
2 microphone?

3 Wait. Let me ask a different question.

4 Beel does not disclose a wired connection
5 between a processing device and a microphone;
6 correct?

7 A. I would answer that back in the context
8 of paragraph 120 of Beel, it talks about a
9 microphone or microphones that can be used to
10 transfer audio, e.g., to the processing device.
11 At the time of Beel, laptops had, you know, audio
12 in-and-out jacks, things of that nature. They
13 still do today.

14 (Discussion held off record.)

15 BY MR. GREENLEAF:

16 Q. So I would like to talk to you,
17 Dr. Brogioli, about the limitation beginning "at
18 least one fixed or configurable endpoint."

19 A. Okay.

20 Q. Do you recall that limitation from the
21 '972 patent?

22 A. I do.

1 Q. What is an "endpoint"?

2 A. Go back to the patent.

3 So it talks about this in a few places,
4 one being in the summary of the invention, or
5 around line 58, where it describes having fixed or
6 configurable endpoint. It's an endpoint of the
7 functional device and that's going to be exposed
8 on the peripheral device.

9 And let me see a few other places for
10 you.

11 There's other descriptions, I guess,
12 starting bottom of Column 7, again, in the '972.
13 It talks about endpoints, it sources or sinks. It
14 makes reference to USB devices in this section and
15 then says in another example at the bottom,
16 line 66 of Column 7:

17 "In the present invention,
18 endpoints should be interpreted
19 broadly as data sources and data
20 sinks."

21 And continues on the top of Column 8.

22 Q. You didn't provide a construction of

1 endpoint in your declaration; correct?

2 A. That's correct. I don't believe I
3 provided any constructions in my declaration.

4 Q. So in the petition on page 14, it
5 provided some analysis and a construction of
6 endpoint.

7 Do you have a copy of the petition you
8 can refer to?

9 A. Give me one moment. I should.

10 Okay. Can you repeat the paragraph
11 again?

12 Q. It's page, sorry, 14 to 19.

13 A. So I've got the -- sorry. Go ahead.

14 Q. And if you go to page 19 of the petition,
15 there's a final construction of the term. Let me
16 know when you're there.

17 A. Okay. I'm on page 19.

18 Q. It says:

19 "Accordingly, this limitation
20 means a data source or sink that is
21 fixed or configurable and used to
22 transfer data between the peripheral

1 device and the functional device."

2 Do you see that?

3 A. Just reviewing the paragraph above. I
4 see that last sentence that you just read.

5 Q. Do you disagree with that construction?

6 A. I haven't performed an analysis or
7 opinion on it one way or the other.

8 Q. Let's go to paragraph -- sorry. Let's go
9 to page 15, which includes a portion of Figure 6
10 of the '972 patent. Let me know when you're
11 there.

12 A. Okay.

13 Q. It illustrates a mass storage device
14 endpoint -- well, I guess before we do that, in
15 the -- in the sentence above that figure, it talks
16 about peripheral device 130 having endpoints 132,
17 134, and 136.

18 Do you see that?

19 A. The last few words directly above the
20 figure, I see that.

21 Q. Do you agree that 132, 134, and 136 are
22 endpoints?

1 A. I'm going back to this portion of the
2 patent.

3 Q. You can look at example -- for example,
4 at Column 19, line 37, talks about the mass
5 storage device 132 and USB endpoint 134.

6 A. Okay. So 132, 134, 136.

7 Q. If you look at the next column, 20, at
8 the top, it talks about speakerphone endpoint 136.

9 The question, again, was whether 132,
10 134, and 136 are endpoints.

11 A. Bear with me one moment. I'm just
12 figuring out where I am here.

13 Okay. So we have Figure 6 of the '972
14 here and then top of Column 20, it looks like the
15 bottom of 19 and top of Column 20 are a reference
16 to the Figure 6 mentioned at line 30 of 19.

17 Okay. So maybe I can hear your question
18 once more. I was just figuring out where I was.

19 Q. Sure.

20 The question was whether 132, 134, and
21 136 illustrated in Figure 6 of the '972 patent are
22 endpoints.

1 A. So looks like around Column 19 at 39
2 says:

3 "The client software 70 also has
4 a USB endpoint 134, which can be a
5 USB HID endpoint and, if necessary, a
6 vendor-specific endpoint."

7 That's at least within regard -- one
8 statement with regard to 134. And -- give me a
9 moment.

10 Q. And then in Column 20, it identifies that
11 the speakerphone 136 has USB endpoint, too;
12 correct?

13 A. It says at line 9 of that column:

14 "In this embodiment, the
15 speakerphone" -- I'm sorry -- "In
16 this embodiment, the speaker of the
17 speakerphone has its USB endpoint 136
18 on the peripheral device 130."

19 Q. And 136 is the speakerphone; correct?

20 A. 136 is a speaker of the speakerphone has
21 its USB endpoint 136 on that first peripheral
22 device 130.

1 Q. And then if we look at line 37 of
2 Column 19, it talks about:

3 "A generic driver allows the client
4 software 20 [sic] to transfer data to and receive
5 data from a mass storage device 32 [sic]."

6 Correct?

7 MR. ANDREWS: Objection. Form.

8 THE WITNESS: So it says -- I think the
9 numbers were not quite correct. So it says:

10 "A generic driver allows the
11 client software 70 to transfer data
12 to and receive data from mass storage
13 device 132 on the first peripheral
14 device 130 via a USB interface 131."

15 BY MR. GREENLEAF:

16 Q. I apologize for the mistake, you're
17 right, it's 132.

18 So mass storage device 132, is that a USB
19 endpoint?

20 And just for the sake of efficiency, I'm
21 pretty sure 132, this is the only portion that
22 uses that number, 132, for the mass storage

1 device. And it obviously does not use the word
2 "endpoint" there, but my question to you, would a
3 person of ordinary skill in the art have
4 understood the mass storage device 132 to be an
5 endpoint?

6 A. I would say I don't see that it's
7 referring to the mass storage device here at the
8 top of -- starting at line 1 -- at line 37, that
9 is an endpoint in this section. I would say -- in
10 this section in the context of the '972.

11 Q. So in the context of the '972 patent, a
12 person of ordinary skill in the art would not have
13 understood the mass storage device 132 to be an
14 endpoint; correct?

15 A. I don't see that the patent is saying
16 that in this context, at least in these sentences
17 here.

18 Q. Are you familiar with what a USB endpoint
19 is?

20 A. Yes.

21 Q. What is a USB endpoint?

22 A. They are constructs where you can send

1 from a host side, send data to or get data from.
2 They have different characteristics associated
3 with them.

4 Q. And those characteristics can include
5 descriptor fields; correct?

6 A. I -- we need to go back and confirm on
7 the exact language there. But they're used as --
8 there's information associated with them that's
9 part of an enumeration process for organizational
10 or kind of bookkeeping purposes within USB.

11 Q. And as part of the enumeration, the
12 descriptor fields can identify a device type;
13 correct?

14 A. They have information related to
15 different devices, I would say, within USB.

16 Q. One device type is a mass storage device;
17 correct?

18 A. Within USB, that's correct.

19 Q. And so a mass storage device is a type of
20 endpoint in the USB specification; correct?

21 A. As I recall, that's correct.

22 Q. So the person of ordinary skill in the

1 art would have understood that the mass storage
2 device 132 of the '972 patent would be an
3 endpoint; correct?

4 A. I would say a person of skill reading the
5 USB specification would probably see language
6 describing mass storage devices in relation to
7 endpoints within that specification.

8 I don't see that per where we were just
9 reviewing in the '972 patent and how endpoints fit
10 into the overall claims whether -- that that mass
11 storage device was described as the endpoint one
12 way or the other.

13 Q. Because it didn't use the word
14 "endpoint"; correct?

15 A. At least in that discussion of element --
16 item 132, I didn't see that.

17 Q. So it's your opinion that to disclose an
18 endpoint, you must use the word "endpoint,"
19 otherwise, it doesn't describe an endpoint;
20 correct?

21 A. That wasn't what I said. We were talking
22 about the language and I think it was perhaps

1 Column 19 you had referred me to. I haven't
2 performed an analysis of what the universe of
3 things that may or may not be endpoints within the
4 confines of the patent. I don't believe
5 Dr. Almeroth did either.

6 Q. All right. I disagree.

7 Dr. Almeroth testified that element 132
8 was an endpoint because he agreed with the claim
9 construction in the petition we were just looking
10 at that identified element 132 as being an
11 endpoint. So you disagree with Dr. Almeroth's
12 opinion that 132 is an endpoint, then; correct?

13 A. I guess where in my declaration are you
14 referring to?

15 Q. Well, you don't really address this
16 directly. You stated earlier you did not form an
17 opinion one way or the other of whether the claim
18 constructions were correct. And so you did not
19 opine explicitly in Dr. Almeroth's construction.
20 So I assume you applied some sort of construction
21 to the term "endpoint" when you formed your
22 opinions; correct?

1 A. That's right.

2 Q. And so I'm trying to understand what you
3 mean when you use the word "endpoint." So I want
4 to understand whether you disagree with
5 Dr. Almeroth's opinion that element 132 is an
6 endpoint.

7 A. I would say I don't recall discussing
8 Dr. Almeroth's specific statements around
9 item 132, either they were in his declaration or
10 perhaps something he spoke about in his
11 deposition.

12 Q. Do you have Dr. Almeroth's declaration
13 with you?

14 A. Yes, if you give me one moment.

15 Okay.

16 Q. Can you go to his construction of
17 endpoint, please. Looks like on page 52.

18 A. Yeah.

19 Q. Beginning on page 52. And he has the
20 same figure we were just looking at from the
21 petition and he testifies paragraph 53, for
22 example, peripheral device has endpoints 132, 134,

1 and 136. And it seems you agree elements 134 and
2 136 are endpoints because the '972 refers to them
3 using the word "endpoint." Is that correct?

4 A. That is how the patent describes them.

5 Q. And it's your opinion that the patent
6 does not describe element 132 as an endpoint;
7 correct?

8 A. I don't see that explicit language.

9 I also note that the block 132 of
10 Figure 6 is arranged a bit differently where it
11 seems to just be the arrow to the client. But
12 I -- presumably for the loading of information and
13 storage.

14 I don't know -- I guess what I'm saying
15 is I haven't offered an opinion as to whether the
16 '972 is characterizing mass storage 132 as an
17 endpoint in the context of how the claims are
18 discussed.

19 Q. And you're not prepared to offer an
20 opinion right now whether 132 is an endpoint; is
21 that correct?

22 A. What I discuss in my declaration, that's

1 correct.

2 Q. Let's look at the next page of
3 Dr. Almeroth's declaration. It has a portion of
4 Figure 17 of the '972 patent.

5 Do you see that?

6 A. I see Figure 17, yes.

7 Q. And it has element 130, which is labeled
8 "USB device."

9 Do you see that?

10 A. I do.

11 Q. It also uses the term "USB peripheral" so
12 130 is a USB peripheral device; correct?

13 A. I think that's right. It's a peripheral
14 device that, as illustrated here, would connect to
15 this PC using a USB interface.

16 Q. And the PC is an example of a processing
17 device; correct?

18 A. That's -- in the context of the '972,
19 that's correct.

20 Q. And then the two elements highlighted in
21 yellow are a fixed USB endpoint and a configurable
22 USB -- sorry, it says:

1 "Fixed USB endpoints and
2 configurable USB endpoints."

3 Do you see those?

4 A. I do.

5 Q. What's an example of a fixed USB
6 endpoint?

7 A. Going back to the patent. Some
8 descriptions, it refers to in Column 2 around
9 line 5, the configure -- it talks about one fixed
10 or configurable endpoint in reference to a human
11 interface device. And continuing on -- trying to
12 find the passage I'm looking for.

13 And so in talking about contrast to the
14 fixed endpoint, in paragraph 16 -- I'm sorry,
15 Column 16, around 57, it talks about:

16 "The configurable USB endpoints"
17 of the patent "are configured either
18 when pairing a first peripheral
19 device with a base unit or over the
20 wireless connection between the
21 processing device and the base unit."

22 Q. Let's go to Column 2, line 12, please.

1 A. Okay.

2 Q. It says:

3 "The at least one fixed or
4 configurable endpoint of the
5 functional device exposed on the
6 first peripheral device can be a mass
7 storage device."

8 Correct?

9 A. That's correct.

10 Q. So would you like to change your opinion
11 of whether the mass storage device illustrated in
12 Figure 6 of the '972 patent is a endpoint?

13 A. What I had said earlier was I didn't
14 recall offering an opinion on that one way or the
15 other.

16 I would say the sentence that you just
17 referred me to in Column 2 says what it says, that
18 at least one fixed or configurable endpoint of
19 this functional device exposed -- of the
20 functional device exposed on the first peripheral
21 device can be a mass storage device.

22 I know that this sentence is referring to

1 endpoints of functional devices that are exposed
2 on that first peripheral device.

3 Q. So a mass storage device on a functional
4 device can be an endpoint, but a mass storage
5 device on a peripheral device is not an endpoint?

6 A. It looks like this sentence at Column 2
7 at 12 is stating that the -- the fixed or
8 configurable endpoint of that functional device
9 exposed on the first peripheral device can be a
10 mass storage device. That's right.

11 Q. Is a peripheral device a functional
12 device?

13 A. I don't think that's something I've
14 addressed in my declaration.

15 The peripheral device has -- that I
16 talked about is with regard to the patent the
17 peripheral device described in the patent.

18 Q. Let's look at paragraph 14 of the '972
19 patent, please.

20 A. Did you say paragraph 14 or Figure 14?

21 Q. Sorry. Figure 14.

22 A. Okay.

1 Q. You see element 132 listed there as well;
2 correct?

3 A. I do.

4 Q. You don't have an opinion one way or the
5 other whether element 132 is a endpoint; correct?

6 A. I would say I don't have an opinion one
7 way or the other whether element 132 of Figure 14
8 is the endpoint described in the claims.

9 Q. Do you have an opinion one way or the
10 other whether element 138 is an endpoint?

11 A. I would need to go back to my declaration
12 for you on that.

13 Q. How about I suggest you go to Column 1 --
14 sorry, Column 20, line 21, of the '972 patent.

15 A. I'm just rereading.

16 Okay. I see that paragraph at line 21.

17 Q. Element 138 is an endpoint; correct?

18 A. I'm just rereading the paragraph. And
19 your question is about the -- I'm sorry, the
20 speaker or the speakerphone? It's the speaker
21 you're asking about?

22 Q. 138 is a speaker. The question is

1 whether that's an endpoint.

2 A. I see that the sentence at -- starting at
3 line 24 of this column states:

4 "But if there is additional audio
5 data which is not part of the UC
6 call, this data is sent by the
7 speaker endpoint 138."

8 I don't think I have addressed this item
9 in my declaration as to whether it's an endpoint
10 of the claims or not.

11 Q. So you don't have an opinion one way or
12 the other whether element 138 is an endpoint?

13 A. Whether it's the endpoint of the claims,
14 that sounds correct. It sounds outside what I
15 analyzed in my -- in my declaration.

16 MR. GREENLEAF: All right. We've been
17 going for about an hour. Anybody want to take a
18 break? I can keep going. Lynette?

19 MR. ANDREWS: Take a break.

20 MR. GREENLEAF: All right.

21 (A recess was taken.)

22

1 BY MR. GREENLEAF:

2 Q. All right. Dr. Brogioli, so we've taken
3 two breaks today. Have you spoken with counsel
4 about the subject matter of our depositions during
5 the breaks?

6 A. No, I haven't.

7 Q. So if we go back to Figure 7 of the '972
8 patent, you testified earlier that elements 134,
9 138, and 136 are endpoints; correct?

10 A. So I'm back at Figure 7, and you're
11 asking about 132, 134, and 136?

12 Q. No. Sorry. 134, 138, and 136.

13 A. So it looked like, as we discussed
14 earlier, for example, if I look for 138 in the
15 patent, and I think we may have talked about this
16 earlier, there was language in reference to
17 Figure 7 has a similar configuration to that of
18 Figure 6 in that there are two USB endpoints the
19 patent refers to, 136 and 138, for that
20 speakerphone and the speaker.

21 Q. 134 is also identified as a vendor HID
22 endpoint; correct?

1 A. In that same paragraph where I was,
2 Column 20, at 12, it states the language of the
3 patent is the:

4 "As previously, the HID
5 endpoint 134 makes the HDMI display
6 available to any processing device
7 160 with first peripheral device
8 130."

9 Q. Are those three endpoints you identified
10 of the functional device?

11 A. I don't think I've addressed this in my
12 declaration. The language of this paragraph uses
13 the phrase "endpoint" in regard to some USB
14 endpoints. I haven't -- point me in my
15 declaration if I did, but I don't recall doing an
16 analysis of claim -- I'm sorry, Column 20, the
17 paragraph at line 12, as to whether these
18 components are the endpoints of the claims.

19 Q. I don't think you did that analysis. I
20 think all you did was identify that the prior art
21 did not disclose endpoints of the functional
22 device. I don't think you explained what the

1 endpoint of a functional device is. And I would
2 like to understand better where in these figures I
3 can find an endpoint of the functional device.

4 A. So what is your question again?

5 Q. Please identify an endpoint of the
6 functional device in any figure of the '972
7 patent.

8 A. I would say the figures speak for
9 themselves and talk about various components
10 within the system. For example, the processing
11 device or laptop and base unit peripherals, et
12 cetera.

13 And just as the claims talk about, that
14 there's base unit and a first peripheral device
15 and they can:

16 . . . "transmit and receive data
17 respectively over that communications
18 network from the functional device to
19 the processing device via the" -- you
20 know, "at least one configurable or
21 fixed endpoint."

22 Q. Were you reading from somewhere --

1 A. I was.

2 Q. -- just now?

3 A. Column -- I was in Claim 1, Column 23, at
4 line 11 -- or the limitation at line 11.

5 Q. Can you identify what element number is
6 consistent with the claim limitation of the
7 functional device referring to, in your opinion,
8 the endpoint?

9 A. I guess I would refer to the
10 specification as a whole. There's also language
11 in Column 3 at 41 and 44 talking about:

12 "The method can include
13 presenting the at least one fixed or
14 configurable endpoint of the
15 functional device exposed on the
16 first peripheral device."

17 And talks about:

18 "As one of a human interface
19 device, a mass storage device, a
20 composite device, a microprocessor,"
21 et cetera.

22 I haven't done analysis of, to your

1 question, the subblocks of the visual figures as
2 to which of those blocks are or are not. I think
3 your question was around the fixed or configurable
4 endpoint.

5 Q. Could you please do that analysis now?

6 A. Is there a specific example you want to
7 point me to? This sounds like an analysis I
8 haven't done within my declaration.

9 Q. It is not. I'm asking you to do it now.
10 Because I need to understand what a endpoint of
11 the functional device is. So if we look at, for
12 example, Figure 7, could you please identify an
13 endpoint of the functional device?

14 A. So we discussed Figure 7 earlier. As to
15 the various components described within, I guess,
16 the larger block 130, I haven't done an analysis
17 as to which of those are the endpoints of the --
18 of Claim 1, for example.

19 Q. How long would it take you to do that
20 analysis?

21 A. I don't know.

22 Q. So if we go to Column 12 of the '972

1 patent.

2 A. Okay.

3 Q. It says at about line 15:

4 "Group 90 can be used to expose,
5 for example, the peripheral devices.
6 a webcam 91; a speakerphone 92; a
7 number of HID endpoints 93."

8 Do you see that?

9 A. I do.

10 Q. Is the speakerphone 92 an endpoint of the
11 functional device?

12 A. Looks like all I see the paragraph -- the
13 paragraph above is stating that:

14 "With reference to Figure 1,
15 group 90 is a microprocessor or
16 FPGA-based device comprising one or
17 more peripheral devices" that can be
18 connected -- "which can be connected
19 to, e.g., plugged into that base
20 unit 100."

21 Q. You don't have an opinion one way or the
22 other whether speakerphone 92 is an endpoint of

1 the functional device; is that correct?

2 A. I have not addressed the speakerphone 92,
3 no.

4 I should say I haven't done an analysis
5 of that speakerphone 92 specifically I think in my
6 declaration.

7 Q. Let's go to line 64 of that column.
8 Which reads:

9 "Audio signals from
10 speakerphone 92 connected to base
11 unit 100 are decrypted in block 32,
12 processed and exposed as microphone
13 signal from the USB speakerphone
14 endpoint 92."

15 So there, it refers to 92 as a USB
16 speakerphone endpoint. So now is it your opinion
17 that Speakerphone 92 is an endpoint?

18 A. I would say the sentence speaks for
19 itself. It talks about the speakerphone 92
20 connected to the base unit and process and exposed
21 as a microphone signal from the USB speakerphone
22 endpoint 92.

1 I haven't done an analysis of that block
2 92 in the larger context of this column and
3 whether that's something covered in the claim
4 language or not.

5 Q. The '972 patent be used in the context of
6 data conferencing -- let me ask a different
7 question.

8 Can the invention of the '972 patent be
9 used in the context of data conferencing? You can
10 look at, for example, Column 6, line 31.

11 A. I'm reading the paragraph. I see what it
12 describes for data conferencing. I haven't -- I
13 haven't done an analysis of these claims --
14 through the specific lens of what the patent
15 describes as data conferencing.

16 Q. Claim 1 recites:

17 "Unified communication between
18 two or more processing devices."

19 Correct?

20 A. That's -- that's right. The very last
21 limitation of Claim 1.

22 Q. Is data conferencing an example of a

1 unified communication?

2 A. I haven't -- I haven't done that
3 analysis.

4 Q. Is Skype an example of a unified
5 communication?

6 A. I think that's been talked about in some
7 of the various references and even within the
8 patent, I'm just finding the cite for you. I
9 think it's at the bottom of Column 6. Skype is
10 one example given of unified communication system
11 or tools.

12 Q. Is Skype an example of data conferencing?

13 A. I don't think I've done that analysis.

14 Q. How long would it take you to do that
15 analysis?

16 A. I'm not sure. I'd need to look at what's
17 data conferencing in the patent and what Skype was
18 or was not comprised of at the time of the patent.

19 Q. Would the unified communication of Claim
20 1 allow for participants to join a meeting from
21 remote destinations?

22 A. I'd need to go back and look. This may

1 be a concept that's discussed in the -- possibly
2 in the context of Figure 5. Maybe you can refer
3 me back to my declaration on that.

4 Q. I don't think I have a cite for you.
5 Sorry.

6 A. Excuse me one second.

7 Q. I think you have a point. Figure 5 might
8 be good. It has an illustration of a box and then
9 a line that says "Skype." So presumably this
10 160-4 would be user joining the meeting from a
11 remote destination.

12 Would that be your interpretation of the
13 figure?

14 A. So I'm -- I'm pointing us back, I guess,
15 we were on Figure 5. And in my declaration at 50,
16 I refer to Figure 5 where there's the four laptops
17 and one of those processing devices, 160-4,
18 participates remotely in a meeting over a unified
19 communication while the other -- another laptop,
20 160-3, in the same location as the remaining
21 laptops.

22 Q. Does Figure 5 illustrate an example of

1 data conferencing?

2 A. I haven't done that analysis as to
3 whether the patent's definition of data
4 conferencing is something encompassed in Figure 5
5 specifically one way or the other.

6 Q. So in that Figure 5, we have what appears
7 to be two computers, 160-1 and 160-2, that have
8 media content on them; correct?

9 A. It looks like the way 160-1 and 160-2 are
10 visualized, there's some content being displayed
11 on the -- the screen.

12 Q. It looks like the roadrunner on one and,
13 unfortunately, we can't make out what the image is
14 on 160-2; is that correct?

15 A. That's -- that's my impression as well.

16 Q. And those images are appearing on the
17 display 126; correct?

18 A. That looks correct, yes.

19 Q. And those images are also appearing on
20 the processing device 160-3; correct?

21 A. That looks correct in a -- sort of in a
22 window frame on 160-3.

1 Q. And those images also appear on the
2 processing device 160-4; correct?

3 A. That's correct.

4 Q. All right. So let's go to Column 16,
5 line 29. Let me know when you're there.

6 A. Okay.

7 Q. Actually let's look at the heading there:

8 "Sending Data from the Processing

9 Device to the Base Unit."

10 Do you see that?

11 A. I do.

12 Q. So how does the data from the processing
13 device 160-1 get to the base unit 100?

14 A. Let's go back to the figure for you. And
15 your question is from the processing device
16 160-1 to the base unit 100?

17 Q. Yes.

18 A. I would go back to an example in Claim 1
19 perhaps.

20 Q. Okay.

21 A. I think. One moment.

22 I would point at least in part to Claim 1

1 at that limitation starting at 11, line 11, where
2 there is a base unit in the first peripheral
3 device to transmit/receive data respectively over
4 that communication -- communications network from
5 the functional device to the processing device by
6 at least one fixed or configurable endpoint using
7 imaginary communications protocol for
8 communicating data between processing device and
9 that first peripheral. There's this flow of the
10 processing device, peripheral device,
11 communication network, and the base node. For the
12 direction going from the processing device to the
13 base node in that example.

14 Q. Could the data from the processing device
15 160-1 be transmitted to the base unit 100 via a
16 Wi-Fi transceiver integrated into the processing
17 device 160-1?

18 A. I don't see that that's what the claims
19 are talking about. At least as I'm addressing
20 them.

21 Q. So you don't have an opinion one way or
22 the other whether the image of the roadrunner in

1 processing device 160-1 could be transmitted to
2 the base unit 100 via a Wi-Fi transmitter
3 integrated into the processing device 160-1; is
4 that correct?

5 A. As I recall in addressing claims, as I
6 recall, all of the claims involve the -- well,
7 they all include the peripheral device.

8 Q. So I didn't get that last part you said,
9 they all include the what?

10 A. In looking at the claims of the '972, it
11 looks like each of them include the use of the
12 peripheral device.

13 Q. I'm referring to Figure 5. Do each of
14 the processing devices in that Figure 5 use the
15 peripheral device to transmit and receive data to
16 and from the base unit 100?

17 A. It looks like the units 160-1, 160-2, and
18 160-3 of Figure 5 are shown having a peripheral
19 device.

20 Q. And how is data received by processing
21 device 160-4?

22 A. I'm sorry, how is what?

1 Q. Data received by processing device 160-4.

2 A. It looks like 160-4 is described in

3 Column 17, 62:

4 "One processing device, 160-4,
5 can be the host of a unified
6 communications call such as a Skype
7 call" --

8 (Stenographer clarification.)

9 THE WITNESS: (Reading:)

10 "One processing device 160-4 can
11 be the host of a Unified
12 Communication (UC) call such as a
13 Skype call or a Skype For Business
14 call."

15 BY MR. GREENLEAF:

16 Q. And by what means does the processing
17 device 160-4 communicate data to the unified
18 communication?

19 A. I'm just revisiting this section.

20 Q. I have a citation that might be helpful.

21 A. Okay.

22 Q. Column 18, line 13 states:

1 "The host processing device 160-4
2 has preinstalled UC client software.
3 This software interacts with USB
4 endpoints on the peripheral
5 device 130 connected to, e.g.,
6 plugged into the host."
7 Do you see that?

8 A. I do.

9 Q. So do I understand this correctly that
10 the communication between the processing devices
11 130-3 and 1- -- sorry -- the processing devices
12 160-3 and 160-4 is through the unified
13 communication software?

14 A. The unit 5 communication client software
15 installed on the device 160-4.

16 Q. Yes. So the communication between those
17 two processing devices is through the unified
18 communication client software; correct?

19 A. That looks like what the first and second
20 sentence of this paragraph in Column 18 seem to be
21 referring to.

22 Q. Do you have any opinion by what means

1 that unified communication data is being
2 transmitted from the processing device 160-4?

3 A. I don't recall doing an analysis of what
4 the patent says about that.

5 Q. Could it be through an ethernet
6 connection and then through the Internet onto the
7 processing device 160-3?

8 A. I don't know that the patent says that
9 device 160-4 is specifically connected to an
10 ethernet connection or otherwise.

11 Q. Could the connection from processing
12 device 160-4 to the unified communication session
13 be through Wi-Fi?

14 A. I don't -- I'm looking back to the
15 language of what the patent says or doesn't say
16 about 160-4. I don't think it's specific around
17 that specific phrase "Wi-Fi."

18 Q. I would like to return to the idea of the
19 at least one fixed or configurable endpoint.

20 Do you recall that claim limitation?

21 A. Yes.

22 Q. What's an example of a fixed endpoint?

1 A. I think an example is just the line the
2 patent states in it, the peripheral device would
3 have at least one fixed or configurable endpoint
4 in where those fixed endpoint or the configurable
5 endpoint is a data source or a data sink able to
6 store or emit data. In this case of a functional
7 device.

8 Q. Let's look at Column 16, line 44.

9 A. Okay.

10 Q. Where it talks about Figures 1 to 4.

11 A. Okay.

12 Q. And then at about line 49, it says:

13 "In embodiments of the present
14 invention, fixed USB endpoints on the
15 peripheral device 130 are provided
16 for the basic functionality."

17 Do you see that?

18 A. Yes.

19 Q. And if we look at Figure 4, we see a
20 peripheral device 130; correct?

21 A. There's block 130 labeled "External USB
22 dongle."

1 Q. And it's labeled -- yeah, 130, which
2 corresponds to the first peripheral device, 130;
3 correct?

4 A. One second. That's -- that sounds right,
5 yes, Column 12. It mentions over a first
6 peripheral device 130.

7 Q. And that sentence that we just read
8 referred to fixed USB endpoints on the first
9 peripheral device 130.

10 My question is: Where are the fixed USB
11 endpoints on the first peripheral device 130 in
12 this illustration in Figure 4?

13 A. I don't see, at least explicitly, how
14 that block 130 of Figure 4 is visualized. It has
15 a label for the -- the fixed endpoint or the fixed
16 USB endpoint referenced at -- starting at line 49
17 of this column.

18 Q. You don't have an opinion one way or the
19 other whether Figure 4 illustrates a fixed
20 endpoint?

21 A. What I'm saying is there isn't a block
22 there that uses that language. As the passage in

1 this column states when these are fixed and are a
2 combination of vendor-specific endpoints a number
3 of standard endpoints and here it says can be
4 interpreted or understood as a custom driver, a
5 default OS driver or other host application that's
6 been described with reference.

7 So some of this is referring to an OS
8 driver which would be on the machine running an
9 operating system.

10 And I note that this paragraph really is
11 referring to Figures -- refers back to Figures 1
12 through 4.

13 Q. It does. And at the end, it says -- with
14 reference to Figure 4, specifically without
15 mentioning the other figures; correct?

16 A. It states -- I'll just read the sentence:

17 "There are fixed and are a
18 combination of vendor-specific
19 endpoints and a number of standard
20 endpoints that can be interpreted or
21 understood as a custom driver, a
22 default OS driver, and/or a host

1 application as has been described
2 with reference to Figure 4 do screen
3 sharing and audio."

4 Q. Do you have an opinion one way or the
5 other whether any of the elements in Figure 4
6 illustrate a endpoint?

7 A. I don't see that the sub -- you're asking
8 about Figure 4 as a whole or block 130?

9 Q. Either.

10 A. I don't see it in Figure 4.

11 Q. Any element of --

12 A. Yeah, I'd have to go back and look as to
13 whether the elements or the couple dozen or two
14 dozen elements within Figure 4 as a whole are
15 described as the endpoints of the patent or not.

16 Q. Well, you know, I would hope that with
17 your decades of experience in engineering, you
18 could identify a endpoint in this figure without
19 having to read the word "endpoint" in the
20 specification.

21 You're welcome to read the specification,
22 but I'd like a yes-or-no answer of whether you can

1 identify an endpoint in Figure 4 anywhere.

2 MR. ANDREWS: Objection. Form.

3 THE WITNESS: I would say I haven't done
4 an analysis of Figure 4 in 28 or 29 or 32 blocks
5 that comprise it as to which of those are the
6 endpoints of the claims.

7 BY MR. GREENLEAF:

8 Q. All right. So let's go back to Claim 1.
9 And the limitation beginning in Column 23, line 4.
10 Are you there?

11 A. Okay.

12 Q. Says:

13 "The base unit having a
14 transmitter and the first peripheral
15 device having a receiver and at least
16 one fixed or a configurable
17 endpoint."

18 And then there's a phrase there, says,
19 comma, "where," and then it ends "of the
20 functional device."

21 Do you see that?

22 A. Yes.

1 Q. And you're aware of this issue of my
2 confusion of whether the claim requires the
3 endpoint to be on the peripheral device or the
4 functional device.

5 Are you aware of this issue?

6 A. I -- I am, yes.

7 Q. And what is your opinion of where the
8 functional device exists, whether it's on the
9 functional device -- maybe I'll reask that
10 question. I messed it up.

11 What is your opinion of which device has
12 the endpoint? Is it the functional device or the
13 peripheral device?

14 A. That it is the -- there's the first
15 peripheral device per this claim limitation with
16 the receiver and has a fixed or configurable
17 endpoint. That endpoint is the data point or data
18 sink, and that is exposed on or made available on
19 that first peripheral device.

20 Q. Is the endpoint hardware or software?

21 MR. ANDREWS: Objection. Form.

22 THE WITNESS: I don't recall having a

1 section discussing whether the endpoint itself is
2 limited -- the endpoint of the patent is a
3 software construct or a software-hardware
4 construct.

5 BY MR. GREENLEAF:

6 Q. Is it your opinion that the endpoint can
7 be any combination of hardware and software,
8 whether it's all hardware, all software, or a
9 combination of the two?

10 A. In terms of the endpoint of the patent, I
11 haven't done that analysis.

12 Q. Can you do that analysis now, please?

13 A. I don't know that I can. I would need to
14 start reviewing the patent again through that
15 lens. I don't recall Dr. Almeroth having -- going
16 from recollection of his declaration, I don't
17 recall him addressing that.

18 Q. Can you identify in any figure an
19 endpoint as defined by Claim 1 of the '972 patent?

20 A. I think we discussed that earlier. I
21 didn't perform an analysis of the figures of the
22 '972 patent and their subcomponents as to which of

1 those blocks may or may not be the endpoint of the
2 claims of the patent.

3 Q. What's the difference between a fixed and
4 configurable endpoint?

5 A. Just going back to the specification for
6 you. And I think we talked about this earlier in
7 the context of Column 16 where it talks about
8 configurable USB endpoint configured either when
9 pairing a first peripheral device, 130 device,
10 with a base unit 100 or over a wireless connection
11 between a processing device 130 and a base
12 unit 100.

13 Q. Can you identify a fixed endpoint in any
14 of the figures of the '972 patent?

15 A. I would say similar answer to before. I
16 haven't done an analysis of the figures of the
17 patent and the components that comprise them as to
18 which of those may or may not be the endpoints of
19 the claims or, to your question, the fixed
20 endpoints of the claims.

21 Q. Can you identify a difference between a
22 fixed and configurable endpoint?

1 A. That was what I was -- I believe I was
2 just answering that question a moment ago
3 referring back to -- I think my Zoom session
4 dropped -- back to that language in Column 16.

5 Q. Which line of Column 16?

6 A. When we were discussing earlier at least
7 the passage starting at line 57 around the
8 configurable USB endpoints, at least talking about
9 configurable USB endpoints here.

10 Q. What is a "configurable USB endpoint"?

11 MR. ANDREWS: Objection. Asked and
12 answered.

13 THE WITNESS: Excuse me. I guess I would
14 go back to our discussion in Column 16 again where
15 it talks about the configurable USB endpoints
16 roughly starting around line 57.

17 BY MR. GREENLEAF:

18 Q. What are some of the functions of a
19 configurable USB endpoint?

20 A. I think the patent talks about endpoints
21 in Column 7 at the bottom saying the endpoints can
22 be described as data sources or data sinks and are

1 defined for USB devices which can be physical
2 devices or virtual devices. The paragraph there
3 continues to the top of Column 8 as well.

4 Q. Is that disclosure referring specifically
5 to fixed USB endpoints only?

6 Sorry. Let me -- let me reask that
7 question.

8 So the question before was what are some
9 functions of configurable USB endpoints and you
10 read some disclosure here in Column 7.

11 Is that disclosure limited to
12 configurable USB endpoints?

13 A. I would say, as I look at this paragraph,
14 it's referring to endpoints as a whole.

15 Q. So it could be fixed or configurable?

16 A. I don't see that this paragraph of -- or
17 this description of the patent is talking
18 specifically about fixed or configurable, but
19 rather, talking about endpoints.

20 Q. Is there another type of endpoint that is
21 not a fixed or configurable?

22 A. I haven't -- I haven't done that

1 analysis. The patent mentions fixed endpoints; it
2 mentions configurable endpoints.

3 MR. GREENLEAF: We've been going about an
4 hour. I'm assuming people want a break; is that a
5 correct assumption?

6 MR. ANDREWS: Yeah. I think a break is
7 good.

8 Do you anticipate this being a break for
9 lunch or . . .

10 THE STENOGRAPHER: Did you want to go off
11 the record?

12 MR. GREENLEAF: Yes, please.

13 MR. ANDREWS: Yes.

14 (A lunch recess was taken.)

15 MR. GREENLEAF: All right. Let go back
16 on the record.

17 BY MR. GREENLEAF:

18 Q. So did you have a good lunch,
19 Dr. Brogioli?

20 A. Yes.

21 Q. Did you have Taco Deli?

22 A. Unfortunately, we did not.

1 Q. Too bad.

2 So one of the limitations of the claims
3 of the '972 patent says:

4 "The functional device exposed or
5 made available on the first
6 peripheral device."

7 Do you recall that limitation?

8 A. Give me one second.

9 I see that, yes.

10 Q. What does that limitation mean?

11 MR. ANDREWS: Objection. Form.

12 THE WITNESS: I would say just as the
13 claim states; that the functional device that's
14 talked about in the system is exposed or made
15 available on that first peripheral device.

16 BY MR. GREENLEAF:

17 Q. Is there a difference between being
18 exposed and being made available?

19 A. Not that I have analyzed in my
20 declaration one way or the other.

21 Q. Do you recall our discussion earlier
22 about the endpoint being fixed or configurable?

1 A. I do.

2 Q. Is there a third option for an endpoint
3 to be fixed or configurable or something else?

4 A. I don't recall discussing that in my
5 declaration or analyzing that in the patent.

6 Q. Do you have an opinion today on whether
7 there's a third option between fixed or
8 configurable?

9 A. I haven't done that analysis. I don't
10 have an opinion today.

11 Q. Do all USB devices have endpoints?

12 A. I -- if you're asking in the context of
13 the USB specification, I would need to go back and
14 look. If there are cases where a USB device
15 doesn't have an endpoint as defined in the USB
16 specification.

17 Q. Do you know whether there are any USB
18 devices that do not have endpoints?

19 A. Going from memory, I don't recall if
20 there are USB devices that within the USB
21 specification wouldn't have some form of endpoint.

22 Q. Do you have an opinion on whether it's

1 inherent to every USB device that it must have an
2 endpoint according to USB specification?

3 A. Similar answer. I don't recall the
4 universe of the USB spec or, more specifically, a
5 specific version as to whether there are some
6 cases where a USB device might not have an
7 endpoint zero or something like that.

8 Q. Do you have the Dinka patent with you?

9 A. I do. One moment.

10 Q. Exhibit 1006. I would like to draw your
11 attention to Figure 1, please, when you have it.

12 A. Okay. I've got it up.

13 Q. The elements 103 -- well, let me just
14 pull up the spec. Make sure I use the correct
15 terminology.

16 Dinka describes 103 as television sets;
17 correct?

18 A. I'm sorry, did you say 103?

19 Q. Yes. In Figure 1.

20 A. That's correct, in Column 6.

21 Q. And Figure 1 only illustrates one element
22 labeled 102; correct?

1 A. Figure 3. Sorry. I was looking at
2 Figure 1.

3 Q. Yeah, I was talking about Figure 1.
4 The question is whether Figure 1 only
5 illustrates one element labeled 102.

6 A. Okay. One minute.
7 That looks correct, yes.

8 Q. I would like to draw your attention to
9 Column 5 around line 45, please.
10 It says:

11 "A plurality of computer
12 terminals 102 are shown coupled to
13 the Internet 101."

14 Do you see that?

15 A. I see that at line 45, 46.

16 Q. Is your opinion that Dinka does not
17 include a plurality of computer terminals 102
18 communicating via Skype?

19 A. I don't recall in my declaration talking
20 about Dinka in a plurality of computer terminals.

21 Q. You don't have an opinion one way or the
22 other whether Dinka contemplates a plurality of

1 computer terminals communicating via Skype?

2 A. I don't -- I'm just getting back to my
3 declaration for you. Yeah, I don't think I
4 discuss that in my declaration, no.

5 Q. I see that you didn't discuss it in your
6 declaration, but do you have an opinion, sitting
7 here today, whether Dinka contemplates a plurality
8 of computer terminals communicating via Skype?

9 A. No, not beyond what's in my declaration.

10 Q. Is it your opinion that Dinka is limited
11 to communication from a computer terminal to a
12 plurality of televisions?

13 A. Your question one more time.

14 Q. Is it your opinion that Dinka's invention
15 is limited to communication between a computer
16 terminal and a plurality of television sets?

17 A. I don't -- I don't recall talking about
18 that aspect of Dinka in my declaration. It was
19 mostly about the television set device itself.

20 Q. I would like to turn your attention to
21 paragraph 118 of Beel, please.

22 A. Okay.

1 Q. And in the middle of it, it says that:

2 "A second connection unit 49 that
3 provides access to the network 50,
4 thus linking all of the processing
5 devices 31, 36 together."

6 Do you see that?

7 A. I do.

8 Q. Why are all of the processing devices
9 linked together?

10 A. I don't see that this paragraph says
11 beyond what this sentence reads:

12 The "second connection unit 49
13 that provides access to the network,
14 thus linking all of the processing
15 devices 31, 36 together."

16 Q. Let's look at Figure 10 of Beel, please.
17 The picture of the dongle.

18 A. Okay.

19 Q. Figure 10 illustrates an internal Wi-Fi
20 antenna. Actually, it says "internal Wi-Fi
21 antenna's" with an apostrophe. And then it also
22 says "transceiver."

1 Do you see that?

2 A. I see that in Figure 10, yes.

3 Q. What is a "transceiver"?

4 A. It's generally something that's used to
5 send and receive.

6 Q. So the dongle in Figure 10 is adapted to
7 both send and receive data; correct?

8 MR. ANDREWS: Objection. Form.

9 THE WITNESS: I'll say all I see is that,
10 for instance, in 48 of Beel, that halfway down, it
11 states the transmitter can be a wireless
12 transmitter or receiver. Sorry. A wireless
13 transmitter or transceiver. So I see it just uses
14 the word "transceiver" in certain places.

15 BY MR. GREENLEAF:

16 Q. You don't have an opinion one way or the
17 other of whether the dongle in Figure 10 is
18 adapted to transmit and receive data?

19 A. I don't recall discussing that. I recall
20 discussing the transmit aspect of Beel.

21 And I just note that as you pointed out,
22 it does use the phrase "transceiver" in certain

1 places. In other places it talks about receivers
2 are preferably -- that's with regard to the base
3 node. So I see it uses that word "transceiver."

4 Q. But do you have an opinion one way or the
5 other whether the dongle in Figure 10 is adapted
6 to transmit and receive data?

7 A. I don't recall doing that analysis in the
8 context of Beel. Beyond the language of the
9 transceiver.

10 As I talk about in my declaration, Beel
11 is the -- discussing in certain parts the
12 transmission of this information to the base node.

13 Q. I'd like to direct your attention to
14 paragraph 119 of Beel, please.

15 A. Okay.

16 Q. It discusses a camera 35 and states:

17 "That data from the whiteboard
18 can be recorded and stored or
19 transmitted to other networks via
20 Router 42."

21 Do you see that?

22 A. I will read it back. I didn't follow you

1 entirely.

2 "Connecting the camera 35 to the
3 network 50 so that the data from the
4 whiteboard can be recorded and stored
5 or transmitted to other networks via
6 router 42."

7 Q. Why would the data from the camera be
8 transmitted to other networks via the router 42?

9 A. Not sure that this paragraph 119 is -- is
10 specific about that.

11 I note that in the background section of
12 Beel -- I'll point us there -- it talks about the
13 notion of lecture hall or seminar formats and the
14 presentation or involving a presentation or
15 presentation of software. But I don't see, at
16 least in the confines of 119, additional
17 description on the, quote, other networks via
18 router 42.

19 Q. Is it possible that the camera data
20 transmitted to other networks as described in
21 paragraph 119 would go to remote users where they
22 can view what's being written on the whiteboard?

1 A. One more time, please.

2 Q. Is it possible that the camera data that
3 is sent to the other networks as described in
4 paragraph 119 could be sent to remote or local
5 users to view what's being written on the
6 whiteboard?

7 A. I don't know. It's just saying that the
8 camera is involved in its connecting a camera 35
9 to a network 50 and so that the data can be
10 recorded and stored or transmitted to other
11 network via a router.

12 Q. I would like to turn your attention to
13 paragraph 253, please.

14 Talks about a remote meeting participant.
15 It also says:

16 "In this embodiment, one or
17 multiple client operating devices are
18 not in the direct vicinity of the
19 base node but on a remote location."

20 Do you see that?

21 A. I do.

22 Q. So we talked earlier about the camera

1 data and the possibility of whether it could be
2 sent to a remote meeting participant.

3 Does this refresh your recollection at
4 all about whether Beel's disclosure includes the
5 possibility of remote meeting participants
6 receiving media data?

7 A. I don't see that it explicitly says that
8 one way or the other. But it's stating that one
9 or more of these client operating devices aren't
10 local to the base node but in some remote
11 location.

12 Q. It also talks about in the next
13 paragraph:

14 "To accommodate this case, the
15 following adaptations are needed:
16 Further compression and/or scaling of
17 the arbitrary media content to allow
18 use of low bandwidth connection."
19 Do you see that?

20 A. I do.

21 Q. Could you please explain to me what that
22 means?

1 A. It looks like it's saying there may be
2 somebody -- a client operating device from 253
3 that may be on a low bandwidth connection so they
4 can't get as many bits effectively at a certain
5 rate, for example, and so you may want to compress
6 the media content that's being sent to them or
7 scale it -- probably scale it down, I think it's
8 referring to.

9 Q. Scaling is a form of compression, right?

10 A. Sounds like you're talking about
11 compression and scaling or scaling.

12 Q. So, for example, the resolution of the
13 stream could drop from 10 ADP to whatever the
14 other one is, seven ADP?

15 A. That's what I was referring to, something
16 like that. Changing a resolution.

17 Q. So then that way, that would allow the
18 remote meeting participant to view the video data
19 from the meeting; correct?

20 A. I would say that whatever's referred to
21 here is they -- they are describing using either a
22 compression and/or scaling to accommodate for this

1 lower bandwidth connection. And that's being done
2 on the arbitration media content.

3 Q. Let's look at Figure 1A, please.

4 It illustrates a display of 44; correct?

5 A. That's right.

6 Q. Could the display 44 be a television?

7 A. I think the patent just -- the Beel
8 reference, sorry, just discusses the display as
9 being just that, a projector or a screen. I don't
10 see that it describes it as a television.

11 Q. So you don't have an opinion one way or
12 the other whether display 44 could be a
13 television?

14 A. I haven't done that analysis and I know
15 the phrase "television" is used in certain ways in
16 some of the other references. I haven't looked at
17 the similarities or differences there.

18 Q. I would like to turn your attention to
19 paragraph 75 of your declaration, please.

20 A. Okay.

21 Q. And the last sentence talks about
22 "higher-quality functional devices" and it's

1 talking in the context of microphones, for
2 example, speakers, et cetera; correct?

3 A. That is -- that's correct. Those are two
4 examples.

5 Q. And it's your opinion that Beel utilizes
6 low-quality microphones, speakers, video cameras,
7 and other functional devices; correct?

8 A. I don't recall discussing that in the
9 context of Beel.

10 Q. So this section is titled "Dinka Teaches
11 Away."

12 Do you see that?

13 A. That's correct.

14 Q. So what's the relevance of this paragraph
15 in that context?

16 A. I'm just reviewing the prior paragraph.

17 Well, this paragraph 75 needs to be taken
18 in context to paragraph 74 and 76 where the '972
19 is talking about these low-quality, for example,
20 microphone, speakers, et cetera, and the ability
21 to provide higher-quality functional devices to
22 laptops, for example. And Beel -- sorry, Dinka is

1 in contrast to this.

2 Dinka is talking about using this
3 television or set-top box with all of its
4 functionality embedded. Also discover the use of
5 laptops which may have these lower-quality
6 microphones, et cetera.

7 Q. The claims of the '972 patent require
8 higher-quality functional devices?

9 A. I don't -- in skimming through the claims
10 for you, the claims frame it in terms of
11 functional devices. I don't recall the claims
12 using the specific word "higher quality" or "lower
13 quality." That's discussed elsewhere in the
14 specification.

15 Q. Would you construe the word "functional
16 device" in the context of Claim 1 to require a
17 high-quality functional device based on the
18 description of the '972 patent?

19 A. I haven't offered a construction on that
20 term.

21 Q. So you don't have an opinion one way or
22 the other whether the functional devices of Claim

1 1 must be high or low quality?

2 A. I don't see the Claim 1 specifies that
3 one way or the other. The notion of low-quality
4 devices is mentioned in the specification.

5 Q. I'd like to turn your attention to
6 paragraph 76, please.

7 It says:

8 "Dinka discourages use of laptops
9 to host a virtual meeting."

10 Do you see that?

11 A. Yes.

12 Q. And if you go back to Figure 1 of Dinka,
13 we had the computer terminal 102. Could computer
14 terminal 102 be a laptop?

15 A. I don't see Dinka saying that; although,
16 maybe there is somewhere in Dinka you're referring
17 to.

18 Q. You don't have an opinion one way or the
19 other of whether the computer terminal 102 can be
20 a laptop?

21 A. I don't see Dinka saying the phrase
22 "laptop" with regard to Box 102 of Dinka that you

1 are asking about in Figure 1 -- or, yeah,
2 Figure 1.

3 Q. All right. Back to paragraph 74, sorry,
4 76 of your declaration.

5 You say:

6 "Dinka discourages use of laptops
7 to host the virtual meeting and
8 instead advocates for participating
9 in packet-based communication from a
10 television or set-top box."

11 Do you see that?

12 A. With these embedded functions, yes.

13 Q. And then paragraph 79 talks about this
14 packet-based issue again; correct?

15 A. What I -- what I discuss Dinka teaches
16 access in packet-based communications:

17 "A laptop is disadvantageous
18 because the user may be sufficiently
19 technically competent to download,
20 install, and operate the call on a
21 personal computer."

22 Q. And it's your opinion that saying

1 something is disadvantageous is equivalent to
2 teaching away from a proposed combination?

3 A. That sounds right, that these aspects of
4 Dinka are teaching away from such a combination.

5 Q. All right. Do you have a copy of
6 Exhibit 1007, Van de Laar?

7 A. I do. One moment.

8 Okay.

9 Q. And Van de Laar disclosed embodiments
10 that communicate through the Wi-Fi direct
11 protocol; correct?

12 A. I'm just confirming that for you.

13 Q. For example, paragraph 98.

14 A. That's -- that's correct.

15 Q. In your opinion, is Van de Laar limited
16 to embodiments that use the Wi-Fi direct protocol?

17 A. Looks like my declaration I discuss Van
18 de Laar around paragraph 115, 116 in the Wi- --
19 around Van de Laar's Wi-Fi direct, use of Wi-Fi
20 direct.

21 If there are other aspects of or
22 embodiments of Van de Laar that don't use Wi-Fi

1 direct, I don't recall discussing them. I don't
2 recall if Dr. Almeroth did either.

3 Q. You don't have an opinion one way or the
4 other of whether Van de Laar's invention could be
5 used in systems that do not rely on Wi-Fi direct?

6 A. I don't recall. It doesn't look like I
7 addressed that in my declaration. I'm guessing
8 because from memory, it wasn't a point
9 Dr. Almeroth raised.

10 Q. Sitting here today, you still don't have
11 an opinion one way or the other whether Van de
12 Laar's invention could be used in systems that
13 don't rely on Wi-Fi direct; correct?

14 A. I don't have an opinion on that today,
15 no.

16 Q. Let's look at paragraph 86 of Van de
17 Laar, please.

18 Talks about:

19 "Sharing of content and messages
20 between all docked devices."

21 Do you see that?

22 A. I do.

1 Q. So Van de Laar contemplates sharing of
2 media data amongst several docked devices
3 simultaneously; correct?

4 A. Looks like in the sense that paragraph 86
5 is talking about broadcast multicast, things like
6 that, to send the content messages.

7 Q. The docked devices can both send and
8 receive content; correct?

9 A. As I talk about in my declaration, give
10 me one moment. That there's a host device that
11 enables the sharing in Van de Laar as I talk about
12 in 15 or shared usage of peripherals and let me go
13 back up in my declaration for you a bit.

14 MR. ANDREWS: Did we lose Kevin?

15 THE STENOGRAPHER: It looks that way.

16 MR. GREENLEAF: I'm sorry, I'm still
17 here. I just muted myself for a second. Go back
18 on the record.

19 BY MR. GREENLEAF:

20 Q. My question, again, being whether the
21 docked devices in Van de Laar can both send and
22 receive content.

1 A. So as I discuss in my paragraph 116,
2 there are primary dockees, secondary dockees in
3 Van de Laar, and the primary are able to control
4 at least one peripheral. The secondary dockees
5 don't gain control, they just receive the rendered
6 AV data.

7 Q. Does Van de Laar contemplate docking
8 multiple primary dockees?

9 A. I don't recall discussing that in my
10 declaration.

11 Q. You don't have an opinion one way or the
12 other whether Van de Laar contemplates docking
13 multiple primary dockees?

14 A. That's not something I recall discussing
15 or offering an opinion on in my declaration.

16 Q. That's dockees, D-O-C-K-E-E-S.

17 A. That's right.

18 Q. If you look at paragraph 59 of Van de
19 Laar, please.

20 A. Okay.

21 Q. First sentence, it says:

22 "Optionally, the docking

1 processor is arranged for docking
2 multiple primary dockee devices."

3 Do you see that, Dr. Brogioli?

4 A. I do. I'm just reading the paragraph. I
5 see that sentence.

6 Q. So Van de Laar does contemplate allowing
7 for the docking of multiple primary dockee
8 devices; correct?

9 A. I see it has the sentence:

10 "Optionally, the docking
11 processor is arranged for docking
12 multiple primary dockee devices."

13 Q. So in Van de Laar's system, multiple
14 devices can both send and receive data; correct?

15 A. I don't know that it says that. It just
16 says that in this.

17 "Optionally, the docking
18 processor is arranged for docking
19 multiple primary dockee devices."

20 And it talks about:

21 "Shared control over the at least
22 one peripheral for determining the AV

1 data to be rendered."

2 Q. Can you give me an example of shared
3 control over at least one peripheral?

4 A. Van de Laar just states:

5 "The shared control may, for
6 example, enable multiple primary
7 dockees to control the volume of a
8 shared loudspeaker system."

9 I also note that this passage seems to be
10 talking about a docking processor. Or this
11 paragraph.

12 Q. It does talk about a docking processor.
13 What is a "docking processor"?

14 A. It's not something I believe I addressed
15 in my declaration. There seem to be statements
16 about it in Van de Laar's paragraph -- yeah, Van
17 de Laar's paragraph 60.

18 Q. So what is a "docking processor"?

19 A. One thing Van de Laar states in
20 paragraph 60 is:

21 "Optionally, the docking
22 processor is arranged for, upon

1 instruction of a primary and/or
2 secondary dockee device, transforming
3 a secondary device into a primary
4 dockee device or a primary dockee
5 device into a secondary device."

6 It seems to be mentioned in a few other
7 paragraphs here.

8 Q. Do you have an opinion one way or the
9 other of whether a secondary docking device can
10 transmit and receive data?

11 A. It looks like in my declaration I discuss
12 the secondary dockee where it receives the AV data
13 rendered on the peripherals.

14 Q. Do you have an opinion of whether a
15 secondary dockee can also transmit data?

16 A. I don't recall discussing the secondary
17 dockees transmitting data. Beyond what's in my
18 declaration, I don't have an additional opinion.

19 Q. Do you have an opinion about whether the
20 docking processor can modify an assignment of a
21 dockee from being primary to secondary?

22 A. I don't offer an opinion on that in my

1 declaration.

2 Q. Do you have any additional opinions today
3 about whether the docking processor can modify an
4 assignment of a dockee from being primary to
5 secondary?

6 A. No additional opinions, no.

7 Q. Do you have a copy of the Kaplan
8 reference, Exhibit 1008?

9 A. I do.

10 Q. All right. So I'd like to direct your
11 attention to Figure 1.

12 A. Okay.

13 Q. What is element 110?

14 A. It looks like it is described as the
15 receiver by Kaplan in paragraph 16.

16 Q. Can the receiver be a transceiver?

17 A. It looks like Kaplan's language is
18 continuing in that sentence, page 2, left-hand
19 column, his words are:

20 "Includes a receiver 110 operable
21 to communicate with a display device.
22 The receiver, which may be a

1 transceiver."

2 I note the figures of Kaplan, which I
3 discuss, for example, in Figure 2 on that block
4 110 just shows outputs for an HDMI out.

5 Q. A transceiver can both transmit and
6 receive; correct?

7 A. In a -- I would say in the general
8 engineering sense, it is something that can
9 transmit and receive.

10 Q. Figure 2 illustrates a receiver 110
11 communicating bi-directionally with the
12 transmitter 120; correct?

13 A. I would say there's a bi-directional
14 arrow in this figure.

15 Q. Would a person of ordinary skill in the
16 art have understood that there is bi-directional
17 communication between the receiver 110 and the
18 transmitter 120?

19 A. I would say Kaplan talks about, as I
20 discuss in my declaration, the sharing of this
21 content from the right-hand-side terminal 220 to
22 the display we see connected on the left-hand side

1 at 210.

2 Q. Do you have an opinion one way or the
3 other of whether there would be bi-directional
4 communication between the transceiver 110 and the
5 transceiver 120?

6 A. I would say, as I discuss in my
7 paragraph 112, that Kaplan is a system where the
8 video content is transmitted between the computer
9 and the display device using that transmitter and
10 receiver.

11 Q. So you don't have an opinion one way or
12 the other whether there is any bi-directional
13 communication between those elements, 110 and 120?

14 A. I don't see any bi-directional
15 communication in terms of the video content that
16 Kaplan is -- is targeted towards transmitting.

17 Q. Would there be bi-directional
18 communication, at least for initialization or a
19 handshake to establish the connection?

20 A. I don't know. I don't know that Kaplan
21 discusses that.

22 MR. GREENLEAF: Why don't we take a break

1 until 20 to, and I think we're going to wrap up
2 soon.

3 MR. ANDREWS: Did you say 22?

4 MR. GREENLEAF: 20 -- 20 to the hour, so
5 2 -- I guess it's 1:40 your time.

6 MR. ANDREWS: Perfect. Thanks.

7 MR. GREENLEAF: Thank you.

8 (A recess was taken.)

9 MR. GREENLEAF: Back on the record.

10 BY MR. GREENLEAF:

11 Q. Would you please go to paragraph 96 of
12 your declaration, Dr. Brogioli.

13 A. Okay.

14 Q. Well, I guess, first of all, why don't we
15 look at the '972 patent. And Figure 5, let me
16 know when you're there.

17 A. Okay.

18 Q. So we talked about the roadrunner
19 earlier. And the data the roadrunner picture is
20 on processing device 160-1; correct?

21 A. That's right.

22 Q. And that data is transmitted to the

1 display 126; correct?

2 A. Well, the -- the data is going through
3 that peripheral device and that base node within
4 the '972, but is ultimately showing up on that
5 display 126.

6 Q. So that display 126 is a functional
7 device; correct?

8 A. I don't know that the '972 talks about
9 that as a functional device or not. I'm trying to
10 see where that is for you.

11 It looks like it just refers to it as a
12 main display 126.

13 Q. So you don't have an opinion one way or
14 the other whether display 126 is a functional
15 device?

16 A. So I guess I'm referring next to
17 Column 19 where it is referring to -- well, in the
18 context of Figure 6, there are various functional
19 devices such as display 126, but that's referring
20 to in Figure 6.

21 Q. Because of that sentence, you now believe
22 that display 126 is a functional device; correct?

1 A. Well, I'm saying that's the language that
2 the '972 is using with regard to the display, it
3 looks like 126 and Figure 6.

4 Q. So do you have an opinion of whether
5 element 126 is a functional device?

6 A. I don't recall discussing that in my
7 declaration, if that display of Figure 1 is a
8 functional device or not in the confines of the
9 patent.

10 Q. The roadrunner data, is that -- well,
11 let's just kind of make sure we have an
12 understanding.

13 The roadrunner image is data; correct?

14 A. In the sense that it's data that
15 comprises the image that's on the screen here.

16 Q. Is that roadrunner image data of the
17 processing device 160-1?

18 A. In the sense that the data -- if it's
19 being transmitted, would be sent out over the
20 peripheral device 130.

21 Q. So the roadrunner that appears on the
22 display 126, the roadrunner data, is that of the

1 display or of the processing device?

2 MR. ANDREWS: I'm going to object to the
3 form of the question.

4 THE WITNESS: I guess I would say the
5 roadrunner image being shown on 160-1 is as it's
6 sitting on that what's illustrated as a laptop
7 would be, at that point, data of the laptop.

8 BY MR. GREENLEAF:

9 Q. But then when it's displayed on the
10 display 126, is it data of the display?

11 A. I don't recall. Sounds like you're
12 asking as data may move throughout the topology of
13 Figure 1, is it data of "X" or is it data of "Y"
14 or something like that. I don't recall offering
15 an opinion on that in my declaration.

16 Q. Let's go back to paragraph 96 of your
17 declaration.

18 This is talking about audio data. But
19 for our purposes, I'm not trying to split hairs
20 between audio data and video data. I'm just
21 talking about data generically.

22 And here in this paragraph 96, you're

1 talking about audio data and we were just talking
2 about video data, but we could have just as easily
3 have talked about audio data.

4 The point here that I understand you're
5 trying to make is that the peripheral device of
6 Beel:

7 "Acts as an audio-out device for
8 the processing device, and it is the
9 data of the processing device, not
10 the data of the functional device,
11 that is then communicated through the
12 peripheral device to the base unit."

13 Do you see that?

14 A. Sounds like you're reading my sentence
15 about six lines from the bottom.

16 Q. Yes.

17 A. Okay.

18 Q. So here you are distinguishing between
19 data of the processing device and the data
20 received by the speaker. So the example we were
21 talking about with the roadrunner was data of the
22 processing device or data of the display, which,

1 you know, is essentially a functional device in my
2 opinion. But he didn't have that opinion.

3 So I'm wondering in the example of the
4 '972 patent, Figure 5, you know, what the data of
5 the processing device is versus what is the data
6 of the devices attached to the process -- the base
7 unit is.

8 So you seem to have formed an opinion
9 here that Beel's data originates from the
10 processing device and is therefore of the
11 processing device. And the functionality of the
12 '972 patent is essentially the same. You're
13 transmitting data from the processing device, you
14 know, and eventually it ends up on some sort of
15 peripheral device or functional device attached to
16 the base unit. So, you know, this is my
17 long-winded way to explain, you know, what the
18 issue here is.

19 So the question kind of goes back to what
20 we were talking about, it says -- you said
21 something along the lines of you didn't form an
22 opinion in your declaration about this issue about

1 where the -- what the data is of. And here, I
2 think you did. In terms of Beel.

3 Now I'm asking you to form that same
4 analysis in terms of the '972 patent if you're
5 able to; if you're not, you can say you don't have
6 an opinion, which is fine. But I just wanted to
7 refresh your recollection on this issue in the
8 context of Beel and then maybe go back to the '972
9 patent and see whether you can do an additional
10 analysis of whether similar data is of the
11 processing device or of the display or the speaker
12 of Figure 5 of the '972 patent.

13 Did that make sense to you?

14 MR. ANDREWS: Objection. Form.

15 THE WITNESS: Pieces of it. I'm not --
16 I'm not sure I'm understanding what the ultimate
17 question is.

18 BY MR. GREENLEAF:

19 Q. So back to paragraph 96, I read you that
20 sentence that begins with "Instead."

21 A. Okay.

22 Q. And you say:

1 "Instead, the peripheral device
2 acts as an audio-out device for the
3 processing device, and it is the data
4 of the processing device, not the
5 functional device."

6 And that's the key phrase I want us to
7 focus on here.

8 "It is the data of the processing
9 device not of the functional device."

10 And let's just say that it's the display,
11 the functional device is the display just for sake
12 of clarity. It is the data of the processing
13 device, not the display -- or here, it would be a
14 speaker. So it is the data of the processing
15 device, not the data of the speaker.

16 So Beel discloses sending data -- audio
17 data from the peripheral device to a speaker. Is
18 that your understanding of Beel?

19 MR. ANDREWS: Objection. Form.

20 THE WITNESS: I'm having a difficult time
21 following you.

22 But Beel talks about a processing device

1 and a peripheral device.

2 BY MR. GREENLEAF:

3 Q. So let's look at Beel paragraph 317. And
4 if you just read the first couple of sentences
5 about scraping audio data.

6 A. Okay.

7 Q. Do you see that?

8 A. I see it, but give me one second to read
9 it.

10 Okay. You're at paragraph 317 of Beel;
11 is that right?

12 Q. Yes.

13 A. Okay. I've read the first two sentences.

14 Q. So this is discussing how the -- Beel
15 discloses scraping of audio data that is sent to a
16 virtual audio speaker that could be used to, for
17 example, play that audio data via speaker in the
18 room as illustrated in Figure 1A; correct?

19 A. So it looks like it's talking about
20 scraping audio, like the prior art. And capturing
21 audio on the peripheral device and then that
22 peripheral device preferably acts as a composite

1 device comprising, for instance, a virtual audio
2 speaker.

3 Q. And then that data is transmitted to the
4 base unit; correct?

5 A. The peripheral device captures the audio
6 stream with the device driver and then that is
7 streamed -- or the peripheral streams the audio to
8 the base unit.

9 Q. And then the base unit will perform a
10 lip-syncing function that will tie both audio and
11 video together so that it's displayed in sync via
12 the display and the speaker; correct?

13 A. It talks about halfway down the paragraph
14 lip synchronization and then a use of a timer
15 "present in a processing device." It time stamps
16 audio and video. And the ALSA is, I believe, a
17 Linux audio system, communicates stream to the
18 peripheral device. It's then the peripheral
19 device that encodes the time stamp into the
20 stream, audio stream, sends it to the base unit.

21 And then at the receiving end, the audio
22 and video are then recombined to take into account

1 the time stamp to reach lip synchronization.

2 Q. And the base unit would then play that
3 video and audio data via a display and a speaker;
4 correct?

5 A. I don't see that this paragraph says
6 that, but I would think that the video is on
7 the -- on the display like the roadrunner image,
8 and the audio may go to a speaker connected to
9 this base unit.

10 Q. When you say -- oh, connected to the base
11 unit. Never mind.

12 And it's your opinion that the audio data
13 that we just discussed in paragraph 317 is of the
14 processing device; correct? That's exactly what
15 you testified in paragraph 96.

16 A. Revisiting the paragraph for you.

17 It -- right. The audio data being the
18 data of the processing device. Not -- in this
19 case, not of the functional device.

20 Q. All right. I'd like to turn your
21 attention to Column 15 of the '972 patent at the
22 bottom.

1 It says:

2 "Sending Data from the Processing

3 Device to the Base Unit."

4 Let me know when you're there.

5 A. Okay.

6 Q. All right. And then at the end of that
7 section, there's another section that has the same
8 label:

9 "Sending Data from the Processing
10 Device to the Base Unit."

11 But right above that second label, it
12 talks about lip synchronization.

13 Do you see that?

14 A. Give me one second. You said at the end
15 of the section?

16 Q. Well, I mean, there's -- right about
17 Column 16, line 24.

18 A. Oh, oh, I was looking below.

19 I see the lip synchronization at line 24,
20 yes.

21 Q. So here this disclosure, to me, seems
22 substantively identical or at least extremely

1 similar about sending data from the processing
2 device, audio data, to the base unit. And so
3 here, too, your opinion would be that the audio
4 data on the processing device as stated on
5 Column 15, line 62, is data of the processing
6 device and not data of a functional device such as
7 a speaker; correct?

8 A. That sounds like a similar scenario in
9 the case of sending data from the processing
10 device to the base unit and that the data is that
11 of the processing device here.

12 Q. How does one send data -- go ahead.

13 A. And not of a functional device.

14 Q. So how does -- let's look at the claim
15 limitation, Claim 1.

16 "Limitation. The base unit and
17 the peripheral device being adapted
18 to transmit and receive data
19 respectively over the communications
20 network from the functional device to
21 the processing device" --
22 That's -- that's -- let me read a little

1 bit of the prior limitations. Scratch that
2 question.

3 The prior limitation:

4 "The base unit having a
5 transmitter and the first peripheral
6 device having a receiver."

7 And:

8 . . . "at least one fixed or
9 configurable endpoint" --

10 Okay. Let's -- let's look at Figure 5 of
11 the '972 patent. It has a microphone 96.

12 Do you see that?

13 A. One moment.

14 I see that.

15 Q. The data -- is the microphone a
16 functional device?

17 A. Looks like that is characterized in
18 Column 19 around line 35.

19 Q. So the data -- sorry, the question again,
20 is the microphone a functional device?

21 A. In the sentence of Column 19 starting at
22 33 states:

1 "Various functional devices such
2 as a display, a speakerphone, or
3 microphone and speaker set 96, 97,"
4 dot, dot, dot "are connected to the
5 base unit 100."

6 Q. So a microphone is a functional device;
7 correct?

8 A. As it's described in this paragraph,
9 looks like -- that looks like what it's saying.
10 Or the microphone speaker set.

11 Q. All right. And that -- what happens to
12 that data when it gets to the base unit 100?

13 A. What data are you referring to?

14 Q. The data generated by the microphone. So
15 the microphone will generate data based on the
16 received sounds; correct?

17 A. I would say generally if I'm speaking
18 into a microphone, it puts out an electrical
19 signal and Figure -- Figure 1 looked like it shows
20 the microphone 96 being connected to the base
21 unit 100.

22 Q. You mean Figure 5?

1 A. Figure 5, that's right.

2 Q. And that electrical signal is data
3 representation of the sound the microphone picked
4 up; correct?

5 A. I don't see that the '972 gets that
6 specific. But there is a representation of my
7 voice or some audio that the microphone is picking
8 up generally.

9 Q. And then what does the base unit do with
10 that representation of the audio?

11 And I think look at Column 18, line 31,
12 it says:

13 "The microphone 96 can pick up
14 this signal, or the base unit 100 can
15 inject it in the microphone signal to
16 the first peripheral device 130
17 connected to the host 160-4."

18 Do you see that?

19 A. I see that, that paragraph. It looks
20 like it's referring to some of the illustrations
21 of Figure 1 with regard to the UC client software
22 that runs on that node, 160-4.

1 Q. And then in Figure 5, the 160-4, has the
2 word "hello" to the left of it.

3 Do you see that?

4 A. Just a second.

5 In Figure 5, I see the illustration
6 160-4. It has "hello" coming to the -- I guess
7 pointed to the left of it.

8 Q. It's kind of interesting, I'm looking at
9 this webcam and it has -- you know, to the right
10 of the webcam is sort of -- it looks like a camera
11 image of a conference room. And you can see that
12 same image on 160-4.

13 Do you see that?

14 A. I think you're pointing to the -- there
15 seems to be an image to the right of -- in
16 Figure 5, webcam 95, it's pretty low resolution,
17 and I think a similar graphic may be shown on the
18 lower right of the display 160-4.

19 Q. Yeah. And there's a similar set of, you
20 know, angled lines, skewed lines in the
21 microphone, but it's blank, it's empty. But on
22 the 160-4, it has the word "hello" so presumably

1 the microphone is hearing the word "hello" and
2 "hello" is being sent to the processing device,
3 160-4. Would you agree?

4 A. That's something I haven't looked at up
5 until now.

6 Q. So you have no opinion one way or the
7 other whether the hello that's coming out of 160-4
8 is a representation of the sound heard at the
9 microphone?

10 A. I haven't looked at that in the context
11 of this figure.

12 Q. Let's just assume that it is how I
13 understand it, that the word "hello" is going into
14 the microphone and then is being played, the
15 processing device 160-4, that "hello" data would
16 be of the functional device, the microphone
17 functional device; correct?

18 A. Not sure I'm following you. I mean, it
19 sounds like you're saying someone is saying hello
20 into the microphone 96 of Figure 5?

21 Q. Yes. And that word "hello" is then
22 transmitted via the path from the base node to the

1 processing device 160-4 and that data, the word
2 "hello," represented digitally and then -- analog
3 form is data of the functional device; correct?

4 A. I would say there, someone might say the
5 microphone 96, as a functional device, would pick
6 up a hello. It would traverse through base
7 unit 100 to, ultimately, the 160-4 computer and be
8 played as "hello."

9 Q. The signal representing the word "hello,"
10 is that data of the functional device?

11 A. I don't recall if I've done that analysis
12 in my declaration or not. If you can point me
13 there.

14 Q. I don't think you have either.

15 A. Yeah, I don't recall performing this
16 analysis around this "hello" scenario in Figure 5.
17 So I don't believe I have an opinion on your
18 question one way or the other.

19 Q. Let's go back to paragraph 120 of Beel.
20 And I want to focus specifically on the microphone
21 38.

22 Let me know when you're there.

1 A. Okay.

2 Q. I think it seems that we agree, at least,
3 that the data from the microphone can be used to
4 transfer audio to the processing devices 31;
5 correct?

6 A. So in the context of Beel, and I think we
7 talked about this earlier this morning, in
8 paragraph 120, there's a microphone or microphones
9 that are used to transfer audio to the processing
10 device 31.

11 Q. Do you have an opinion one way or the
12 other of whether the data from the microphone here
13 would be data of the microphone?

14 A. I -- I didn't perform that analysis in
15 the context of Beel as to if it's the data of the
16 microphone, et cetera, but that the microphone
17 data -- or sorry, the microphone or microphones
18 can be used to transfer audio to the processing
19 device here.

20 Q. I'm going to share my screen, try to
21 speed things up.

22 All right. So I'm on page 31 of the

1 petition and we're talking again about this data
2 of the functional device. No, this is the --
3 that's the wrong one here.

4 Let me unshare for a second. Okay.

5 MR. GREENLEAF: Let's take a five-minute
6 break so I can get organized.

7 MR. ANDREWS: Sounds good.

8 (A recess was taken.)

9 BY MR. GREENLEAF:

10 Q. All right. So I've got the '972 patent
11 up here, Dr. Brogioli, to try to speed us up.

12 I'm looking at Claim 1, Column 23. This
13 claim limitation at line 11, it talks about:

14 "The base unit and first
15 peripheral device being adapted to
16 transmit and receive data
17 respectively over the communications
18 network from the functional device to
19 the processing device."

20 So I misspoke earlier, I was talking
21 about data of the functional device, I should have
22 been saying from the functional device so I'm

1 going to kind of repeat a little bit of what we
2 just talked about by using the proper language.

3 So if we go back to -- well, first off,
4 you understand this claim limitation about the
5 data from the functional device?

6 A. Yes.

7 Q. So let's go back and look at Figure 5.

8 And talking again about the microphone
9 example, 96, the microphone is the functional
10 device, I think we agreed on that; right?

11 A. That sounds right, yes.

12 Q. And then we talked about the potential
13 for the word "hello" to be received by the
14 microphone, being converted into an electrical
15 signal representing that word "hello," which is
16 then received by the base unit 100, and then
17 ultimately received by the processing device
18 160-4, which then reproduces that sound, the word
19 "hello" on the laptop.

20 Do you recall that discussion?

21 A. Yes.

22 Q. And that data, the word "hello," is from

1 the microphone functional device; correct?

2 A. That would be from the functional device
3 96.

4 Q. Mm-hmm.

5 A. Originating at the functional device 96.

6 Q. Then let's look at the petition, page 35,
7 we have this from the functional device limitation
8 again.

9 Do you see that?

10 A. I see that, yes. What page are you on?
11 Just it's easier for me to see on this.

12 Q. 35. I'll make it bigger.

13 A. Okay.

14 Q. And it -- the analysis states:

15 "Beel discloses the base unit
16 transmitting audio/visual data to the
17 first peripheral device."

18 And we're, again, talking about this
19 paragraph 120. It says:

20 "A microphone or microphones 38
21 that can be used to transfer audio,
22 e.g., to the processing devices 31."

1 Do you see that?

2 A. Yes.

3 Q. And am I correct that you don't have an
4 opinion one way or the other whether these
5 microphones 38 are functional devices?

6 A. I think that's what we were talking about
7 earlier. It sounds, in the scenario you're
8 asking, and we discussed, the microphone is just
9 something directly communicating to that
10 processing device, that is what we talked about
11 earlier.

12 Q. So this -- and the processing devices
13 presumably would play the audio data that was
14 received at -- generated by the microphones 38;
15 correct?

16 A. So I don't recall that it says that.
17 In this scenario of Beel, I'm going to
18 click back there on my end to 120, it's talking
19 about a scenario of recording the progress of a
20 meeting. I don't know that it's saying that audio
21 would be played by the processing device in that
22 scenario.

1 Q. We talked earlier about this processing
2 device in Figure 5 of Beel, which I have up on the
3 screen.

4 Do you recall that discussion?

5 A. I do.

6 Q. And you recall how you testified that
7 this processing device could include, for example,
8 3.5-millimeter audio out -- output?

9 A. I think I, a little more generally, said
10 there would be audio in -- hardware audio in or
11 out kind of thing, 3.5-millimeter is an example.

12 Q. So this processing device, Figure 5 -- in
13 Figure 5, a person of ordinary skill in the art
14 would have understood could play audio; correct?

15 A. As a device, you know, consumer computer
16 laptop could play audio at that time.

17 Q. So the microphone data received at the
18 processing device could have played through a
19 speaker on the computer as illustrated in
20 Figure 5; correct?

21 A. I would say a laptop at the time, I could
22 connect a microphone to it with a cable and have

1 that -- my voice come out of a speaker locally.

2 Q. So it's your opinion that these
3 microphones disclosed in Beel must be connected
4 locally to the computer; correct?

5 A. That -- as it -- as this citation states
6 from Beel 120 that the microphone or microphones
7 can be used to transfer audio to processing
8 devices; correct.

9 Q. It does not use the word "directly";
10 correct?

11 A. I do not see the word "directly" used
12 explicitly here, no.

13 Q. Why did you add the word "directly" into
14 your statement?

15 A. Because that's what's being described
16 here, rather than different flows that may be
17 comprised at different references. It's the
18 microphone transferring audio to the processing
19 device.

20 Q. And is that data of the microphone -- or
21 sorry, is that data from the microphone?

22 A. In this scenario, regarding this sentence

1 of Beel, it's data from that microphone, you know,
2 on my lapel or something going to the processing
3 device.

4 Q. Mm-hmm.

5 And a person of ordinary skill in the art
6 wouldn't have understood that the microphone is
7 connected to the base node which then transmits
8 the audio data to the processing devices via a
9 packet-based network; correct?

10 A. I don't believe a person of skill reading
11 this sentence would understand it other than the
12 microphone is transferring audio to the processing
13 device.

14 Q. Well, the scenario that I just described
15 would be transferring data from the microphone to
16 the processing device via packet-based network.
17 How -- how is that not transferring audio?

18 A. I'm not sure I understand the use case
19 you're describing.

20 Q. Well, I'm trying to describe, more or
21 less, the exact same scenario we talked about in
22 the context of the '972 patent. You said the '972

1 patent transfers data from the microphone
2 functional device to the laptop; correct?

3 MR. ANDREWS: Objection.

4 THE WITNESS: No, that wasn't what I
5 said.

6 BY MR. GREENLEAF:

7 Q. Does -- does the microphone in Figure 5
8 of the '972 patent transfer audio data to the
9 processing device in 160-4?

10 A. The patent talks about the functional
11 device communicating through a base node that
12 involves communication path to a peripheral device
13 that is connected to a processing device.

14 Q. Is the microphone 96 of the '972 patent a
15 virtual audio device?

16 A. I don't recall discussing that in my
17 declaration. And/or perhaps in the passages we
18 have discussed in the '972, I guess I would have
19 to go back and look for you.

20 Q. So you have no opinion one way or the
21 other of whether the '972 patent describes virtual
22 audio devices?

1 A. I don't recall discussing virtual audio
2 devices of the '972.

3 Q. Let's go to Column 22 of the '972 patent.

4 A. Okay.

5 Q. Line 8, it talks about a virtual
6 microphone.

7 A. Okay.

8 Q. Is element 96 of Figure 5 an example of a
9 virtual microphone?

10 A. I don't recall discussing that in my
11 declaration.

12 It looks like Figure 5 is illustrating a
13 microphone with a USB connection to the base node.
14 At least in terms of how it's illustrated.

15 Q. Do you have an opinion one way or the
16 other of whether the microphone is a virtual
17 microphone as the term is used here in the '972
18 patent?

19 A. I don't think I discussed that in my
20 declaration, no.

21 Q. Do you have an opinion otherwise beyond
22 the scope of your declaration?

1 A. Sitting here today, I do not.

2 Q. Let's turn to paragraph 43 of Beel,
3 please. Let me know when you're there.

4 A. Okay.

5 Q. All right.

6 "An embodiment" -- "In an
7 embodiment, audio data is captured
8 through a virtual sound card."

9 Do you see that?

10 A. I do.

11 Q. Actually it says "virtual sound card
12 interface."

13 What is a "virtual sound card interface"?

14 A. It looks like it's describing some kind
15 of logical device that's overlaid on the physical
16 sound card, physical sound card interface to some
17 degree. I haven't -- I haven't analyzed this
18 aspect of Beel.

19 THE WITNESS: One moment. Do you mind if
20 we adjust the blinds?

21 MR. ANDREWS: Yeah.

22 MR. GREENLEAF: Do you want to take a

1 break?

2 THE WITNESS: No, we should be okay.

3 MR. GREENLEAF: Okay.

4 THE WITNESS: Do I look tan?

5 BY MR. GREENLEAF:

6 Q. Let's look at the claims of the '972
7 patent.

8 Do any of the claims require multiple
9 processing units transmitting data to a base unit?

10 A. As I talk about in my declaration, the
11 claims talk about processing. Excuse me,
12 processing device. And I don't recall analyzing
13 the other independent or dependent claims if they
14 require processing devices.

15 Q. You don't have an opinion one way or the
16 other of whether any claim in the '972 patent
17 requires multiple processing devices configured to
18 transmit data to the base unit; correct?

19 A. I don't recall having an opinion on that
20 in my declaration, no.

21 MR. GREENLEAF: Thank you, Dr. Brogioli.
22 I have no further questions.

1 MR. ANDREWS: Can we take, like, a
2 five-minute break?

3 MR. GREENLEAF: Yes.

4 (A recess was taken.)

5 MR. ANDREWS: Back on the record. Just a
6 brief redirect.

7 EXAMINATION

8 BY MR. ANDREWS:

9 Q. So Dr. Brogioli, can you go to
10 paragraph 140 of your declaration for me.

11 A. Okay.

12 Q. Below paragraph 140, there's an image of
13 a ClickShare button.

14 A. That's right.

15 Q. And do you see a big button in the middle
16 of the ClickShare button?

17 A. I do. This is under the image under
18 paragraph 140.

19 Q. And do you see or recall a smaller button
20 toward the top left in that image?

21 A. There is -- the -- there's a little
22 artifact on the lower part that, I think, is how

1 the device is molded, but on the upper left in
2 this image, there's another smaller button there.

3 Q. Can you please turn now to Beel, so
4 Exhibit 1005, Figure No. 10. Let me know when
5 you're there.

6 A. Okay.

7 Q. Do you see that same small button in
8 Figure 10?

9 A. No.

10 Q. Do you recall when Barco released the
11 conference version of the ClickShare button?

12 A. As I recall, it was around 2020.

13 MR. GREENLEAF: Objection. Vague.

14 BY MR. ANDREWS:

15 Q. Dr. Brogioli, there were a lot of
16 questions about analysis that was not included or
17 that you did not do in your declaration.

18 Do you recall that?

19 MR. GREENLEAF: Objection. Vague.

20 THE WITNESS: Throughout the day, yes.

21 BY MR. ANDREWS:

22 Q. Why was it you hadn't done that analysis?

1 A. My declaration was responding to
2 statements Dr. Almeroth made. To the extent I
3 didn't discuss something in my declaration or
4 analyze it, it would be because he hadn't made
5 arguments about it one way or the other for me to
6 respond to.

7 MR. ANDREWS: No further questions.

8 THE STENOGRAPHER: Any redirect or
9 recross?

10 FURTHER EXAMINATION

11 BY MR. GREENLEAF:

12 Q. Dr. Brogioli, what is the conference
13 version of a ClickShare button?

14 A. I guess I need to go back and look at the
15 Barco literature around those versions of the
16 buttons. They would have been the ones I used in
17 my -- as I recall, the ones I used in my
18 declaration, in my testing if you will.

19 Q. What version of the Barco ClickShare
20 button is illustrated in Figure 10 of Beel?

21 A. I'm not sure that Beel says; however, I
22 would think it is prior to the filing date of Beel

1 if the image is included in there. If it was, you
2 know, a physically available device.

3 Q. How do you know about the conference
4 version of the ClickShare button?

5 A. I would say it would have been in the
6 course of the various product uses I did in
7 relation to my declaration -- in relation to my
8 declaration here.

9 Q. Did you identify that document in your
10 declaration?

11 A. I don't see in the "Materials Considered"
12 section I have that. Perhaps it would have been,
13 I would think, included with the -- possibly with
14 the materials in the boxes of the Barco equipment
15 that I used. There were various instruction
16 manuals and things like that.

17 Q. What does that button on the so-called
18 conference version of the ClickShare button do,
19 the small one in the upper left that Mr. Andrews
20 directed you to?

21 A. I'd have to go back and look for you. I
22 recall using it in areas of the testing, but I

1 don't know that I discussed the functionality of
2 it in this declaration in regard to my product-use
3 scenario.

4 Q. Are you aware of any differences between
5 the operation of the ClickShare button illustrated
6 in Figure 10 of Beel and the conference version of
7 the ClickShare button that you took pictures of in
8 your declaration?

9 A. I don't recall performing a side-by-side
10 analysis of those different devices.

11 Q. So besides that button and any other
12 obvious esthetic differences between the
13 ClickShare button illustrated in Figure 10 of Beel
14 and the conference ClickShare button illustrated
15 in your report on page 59, you're unaware of any
16 other difference between those two devices?

17 A. I would say the analysis in my
18 declaration was as to whether this ClickShare
19 system practice, the claims of the '972. I didn't
20 do an analysis of the various releases of the
21 ClickShare button.

22 Q. Do you know whether the conference

1 version of the ClickShare button includes an
2 internal mass storage device?

3 A. I -- I recall the button has the software
4 image of the application that can be run, it's
5 stored on some nonvolatile memory and if I go back
6 to my declaration, I'm just flipping through my
7 last section here on the Barco system. I'm just
8 looking at the table or the screen capture I have
9 on the internal page 63 from USB dead view tool.
10 And I don't see that I -- I think you're asking
11 about a mass storage device?

12 Q. Yes. Right towards the bottom, USB store
13 dot sys mass storage device.

14 A. I see that.

15 Q. Is that referring to the Barco ClickShare
16 device?

17 A. It may be referring to the storage device
18 within the ClickShare button.

19 Q. And the conference version of the
20 ClickShare button has a USB device interface;
21 correct?

22 A. The end of the dongle is a USB connector,

1 that's correct.

2 Q. And the conference version of the
3 ClickShare button also has a button; correct?

4 A. That's correct.

5 Q. The conference version of the ClickShare
6 button also has a visual indicator; correct?

7 A. That is correct.

8 Q. The conference version of the ClickShare
9 button also has an internal Wi-Fi antenna;
10 correct?

11 A. As I recall, it does.

12 Q. And that Wi-Fi antenna is a transceiver;
13 correct?

14 A. I don't recall specifically if that's how
15 it's phrased.

16 Q. Well, it necessarily must transmit and
17 receive; correct?

18 A. That sounds correct, yes.

19 Q. And therefore, it must have a
20 transceiver; correct?

21 A. That may be the case, yes.

22 Q. It also has a flexible connection for

1 data signals and power; correct?

2 A. That sound correct. There's a flexible
3 connector on it.

4 MR. GREENLEAF: No further questions.
5 Thank you, Dr. Brogioli.

6 We'll close the record.

7 THE STENOGRAPHER: Mr. Andrews, did you
8 need a copy of the transcript?

9 MR. ANDREWS: Yes. And we'd like to sign
10 as well, read and sign.

11 THE STENOGRAPHER: And did you want a
12 rough?

13 MR. ANDREWS: Yes, please.

14 THE STENOGRAPHER: Thank you.

15 Off the record?

16 MR. GREENLEAF: I do as well.

17 MR. ANDREWS: Yeah.

18 - - -

19 (Deposition was concluded at 3:06 p.m.)

20 - - -

21

22

1 DEPONENT'S CHANGES OR CORRECTIONS

2 Note: If you are adding to your testimony, print
3 the exact words you want to add. If you are
4 deleting from your testimony, print the exact
5 words you want to delete. Specify with "Add" or
6 "Delete" and sign this form.

7 DEPOSITION OF: MICHAEL C. BROGIOLI, Ph.D.

8 CASE: YEALINK (US) V BARCO N.V.

9 DATE OF DEPOSITION: DECEMBER 18, 2025

10 PAGE LINE CHANGE/ADD/DELETE

11 _____

12 _____

13 _____

14 _____

15 _____

16 _____

17 _____

18 _____

19 _____

20 _____

21 Deponent's Signature

22 _____ Date _____

1 Declaration Under Penalty of Perjury

2

3

4 I, MICHAEL C. BROGIOLI, Ph.D., the
5 witness herein, declare under penalty of perjury
6 that I have read the foregoing in its entirety;
7 and that the testimony contained therein, as
8 corrected by me, is a true and accurate
9 transcription of my testimony elicited at said
10 time and place.

11

12 Executed this _____ day of _____
13 20__, at _____, _____.
14 (city) (state)

15

16

17

18

19

20 _____
MICHAEL C. BROGIOLI, Ph.D.

21

22

1 CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC

2 I, LYNETTE MARIE NELSON, Certified Reporter
3 for the State of California, Oregon, and
4 Tennessee, Registered Professional Reporter, do
5 hereby certify:

6

7 That MICHAEL C. BROGIOLI, Ph.D., the
8 witness whose deposition is hereinbefore set
9 forth, was duly sworn by me before the
10 commencement of such deposition and that such
11 deposition was taken before me and is a true
12 record of the testimony given by such witness.

13

14 I further certify that the adverse party,
15 Barco N.V., was represented by counsel at the
16 deposition.

17

18 I further certify that the deposition of
19 MICHAEL C. BROGIOLI, Ph.D., occurred
20 via Zoom videoconference technology
21 on Thursday, December 18, 2025, commencing at
22 9:03 a.m. to 3:06 p.m. Central Time.

1 I further certify that I am not related to
2 any of the parties to this action by blood or
3 marriage, I am not employed by or an attorney to
4 any of the parties to this action, and that I am
5 in no way interested, financially or otherwise, in
6 the outcome of this matter.

7

8 IN WITNESS WHEREOF, I have hereunto set my
9 hand this 2nd day of January, 2026.

10

11

12 *Lynette Marie Nelson*

13 LYNETTE MARIE NELSON

14 CA. CSR NO. 11585

15 OR. CSR NO. 230121

16 TN. LCR NO. 196

17 RPR, CRR, CCR, CRG

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