

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

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

Petitioners,

vs.

BARCO N. V. ,

Patent Owner.

U. S. PATENT NO. 10,762,002

IPR2024-01436

TESTIMONY CONCERNING PATENT 10,762,002

ORAL DEPOSITION OF
MICHAEL C. BROGIOLI, PH. D.
SEPTEMBER 9, 2025

ORAL DEPOSITION OF MICHAEL C. BROGIOLI, PH. D.,
produced as a witness at the instance of the
Defendants and duly sworn, was taken in the above
styled and numbered cause on Tuesday, September 9,
2025, from 8:24 a.m. to 12:57 p.m., before TAMARA
CHAPMAN, CSR, RPR-CRR in and for the State of Texas,
reported by computerized stenotype machine, at the
offices of K&L Gates, 2801 Via Fortuna, Austin,
Texas, pursuant to the Federal Rules of Civil
Procedure and any provisions stated on the record
herein.

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

2 FOR THE PLAINTIFFS:

3 Erik J. Halverson
4 K&L GATES LLP
5 4 Embarcadero Center, Suite 1200
6 San Francisco, California 94111
7 415-882-8238
8 erik.halverson@klgates.com

6 FOR THE DEFENDANTS:

7 Kevin Greenleaf
8 DENTONS US LLP
9 1900 K Street NW
10 Washington, D.C. 20006
11 650-798-0381
12 kevin.greenleaf@dentons.com

13 Stephen Yang
14 DENTONS US LLP
15 1221 Avenue of the Americas
16 New York, New York 10020
17 212-398-4890
18 stephen.yang@dentons.com

14

15

16

17

18

19

20

21

22

23

24

25

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

I N D E X

PAGE

APPEARANCES.....	2
MICHAEL C. BROGIOLI, PH.D.	
EXAMINATION	
BY MR. GREENLEAF.....	4
CORRECTION PAGE.....	85, 86
SIGNATURE PAGE.....	87
REPORTER'S CERTIFICATION.....	88

E X H I B I T S

NO.	DESCRIPTION	PAGE
Exhibit 1067	BARCO Software ClickShare CSE-200 base unit firmware (No Bates – 5 pages)	15
Exhibit 1068	Declaration of Michael C. Brogioli Ph.D. (No Bates – 51 pages)	19

PREVIOUSLY MARKED EXHIBITS

NO.	PAGE
Exhibit 1014	52
Exhibit 1027	25
Exhibit 1030	10
Exhibit 1031	62

1 MR. GREENLEAF: Good morning. My
2 name is Kevin Greenleaf, representing Yealink,
3 taking this deposition today. With me is Stephen
4 Yang. We're from the Dentons law firm.

08:23 5 MR. HALVERSON: Eric Halverson on
6 behalf of patent owner Barco, from K&L Gates.

7 MICHAEL C. BROGIOLI, PH.D.,
8 having been first duly sworn, testified as follows:

9 EXAMINATION

08:24 10 BY MR. GREENLEAF:

11 Q. Good morning, Dr. Brogioli.

12 A. Good morning.

13 Q. How are you?

14 A. Doing well.

08:24 15 Q. Is there any reason you can't give
16 truthful and accurate testimony today?

17 A. No, there is not.

18 Q. Okay. I'm assuming you have copies of
19 all of the files for IPR No. 2024-01436 on your
08:24 20 computer in front of you?

21 A. I should, yes.

22 Q. Yeah. I'm just wondering for
23 convenience's sake, you know, I have a bunch of
24 paper here, but if you want to look at the
08:24 25 electronic copies, that might make our day go more

1 smoothly.

2 A. Okay.

3 Q. I also have electronic copies. I have in
4 front of me a petition -- the petition from this
08:24 5 proceeding for the U.S. Patent No. 10,762,002. And
6 I'm looking at the construction of pre-installed
7 generic driver. And I'll give you a paper copy.
8 It's on Page 13.

9 MR. GREENLEAF: Do you want the paper
08:25 10 copy?

11 MR. HALVERSON: This is the petition
12 itself?

13 MR. GREENLEAF: Yeah.

14 Q. Do you see that construction at the
08:25 15 bottom of the page?

16 A. Yes, I do.

17 Q. Do you disagree with that construction?

18 MR. HALVERSON: Objection; form.

19 A. Just one moment.

08:25 20 (Pause.)

21 So I'm going to my claim construction
22 section.

23 Q. Page 23 of your report?

24 A. It looks like that, yeah. 22 and 23.

08:26 25 And so it looks like on the '002 for this

1 construction, I think I was provided with the
2 constructions. I mentioned in my declaration those
3 were the ones that I used. As I recall, I didn't
4 offer constructions on these terms.

08:27 5 Q. Is there any substantive difference
6 between the construction you relied on in your
7 report on Page 23 and the construction of
8 pre-installed generic driver proposed on Page 13 of
9 the petition?

08:27 10 A. It looks like there's a slight
11 difference. The one on Page 13 talks about the
12 driver installed on that processing device, it being
13 standard or something that comes with the installed
14 operating system. And if I go back to Page 23 of my
08:28 15 declaration, this applied construction is a standard
16 class of peripheral devices, but they look to be
17 similar.

18 Q. Does the difference between the
19 construction you applied and the construction
08:28 20 applied in the petition change the outcome of this
21 proceeding?

22 A. I guess sitting here right now I don't --
23 I don't have an opinion on that. They look to be
24 pretty similar, at least at surface level. This
08:28 25 version in the petition looks quite similar to the

1 applied construction I used in my declaration.

2 Q. Are you familiar with the OSI model?

3 A. Yes.

4 Q. What is the OSI model?

08:29 5 A. It is a multilayer model that's used for
6 different types of communication on computers and
7 networking system, things like that.

8 Q. Can you name some of the layers, please?

9 A. Going from memory, there are things I
08:29 10 recall, like the physical layer, data link layer, a
11 transport layer, things like that.

12 Q. What is the purpose of the OSI model?

13 A. I would say one of the purposes that I
14 recall is separating out the different functionality
08:29 15 into these -- I guess I would call extracted layers,
16 where communication can go up or down between
17 layers.

18 But, for instance, a higher layer, like
19 an application doesn't need to worry about the
08:29 20 physical layer, such as how bits are transmitted or
21 coded, things like that. So it provides some
22 extraction and modularity.

23 Q. So at the physical layer where you said
24 bits are transmitted and coded, are those bits
08:30 25 handled differently between audio data and video

1 data?

2 MR. HALVERSON: Objection to form.

3 A. Going from memory, I don't recall a lot
4 of the specifics in the physical layer, sitting here
08:30 5 right now.

6 Q. Well, what is the physical layer for USB
7 connection, for example?

8 A. The physical layer, going from memory,
9 talks about how if you've got this high-speed serial
08:31 10 interface the way the bits get -- in certain
11 aspects, the way the bits are put out, there is
12 probably other aspects, such as voltage levels or
13 how different resistors work for pulling up and
14 pulling out the different signal modes, things like
08:31 15 that, just going from memory.

16 Q. So you don't recall whether audio data is
17 treated differently from video data at the physical
18 layer of a USB interface?

19 A. From memory, no. I'd be happy to go look
08:31 20 at it in terms of if there's a delineation for the
21 data types that are going out over the send and
22 receive connections. I don't recall getting into
23 that layer -- or Dr. Almeroth, that layer of the
24 USB -- USB 2 or USB 2.1 specification in these
08:32 25 proceedings.

1 Q. What is a pay load in the context of data
2 communication?

3 A. Generically it's sometimes referred to if
4 I'm sending a packet of communication, the packet
08:32 5 may have something like a header with it that talks
6 about source and destination and tresses of other
7 information. And the payload might be, for
8 instance, a set of 1,000 bytes of data or something
9 like that, that's going out over the network as
08:32 10 well. So maybe it would be application data or
11 video data or something like that.

12 Q. Does the physical layer treat payloads
13 differently based on whether they're application
14 data or video data?

08:33 15 A. I don't recall specifically. There are
16 some types of communication where when you get down
17 to the lowest levels and there's this -- in my
18 example a payload of 1,000 bytes of data, there's
19 just bits and bytes of data going out.

08:33 20 I'd have to look at a more specific
21 specification or something to get more specific than
22 that.

23 Q. What do you mean by your example of a
24 payload of 1,000 bytes of data and they are just
08:33 25 bits and bytes of data going out?

1 A. That in some cases if I have an
2 application, a web browser or something like that,
3 an email client, that some points in the system --
4 let's say we've got a wire connection on my laptop,
08:34 5 for example, the bits of the email that I'm trying
6 to send to you are just bits and bytes of data from
7 that email that go to you and get reconstructed on
8 your end. Or re-rendered in the application, so to
9 speak.

08:34 10 Q. And those bits and bytes of data could be
11 ASCII text or pictures or video, for example.

12 Correct?

13 A. In the example of sending this email over
14 a network, yes, they could be different types of
08:34 15 information that get encoded in there. Attachments,
16 things like that.

17 Q. All right. So I'm going to pull out a
18 copy of Deforche. It's Exhibit 1030 in this IPR.
19 If you want a paper copy, I have one. I'm assuming
08:35 20 you don't want one.

21 A. If you give me two seconds, I can pull
22 one up for you here. Okay.

23 Q. In your opinion is Deforche directed to
24 connecting a computer device to a wireless
08:36 25 communication network?

1 A. As I recall of Deforche, it's talking
2 about having a computer and peripheral device, and
3 then using a driver to form that connection between
4 what I think Deforche talks about is the mass
08:36 5 storage device attached to the computer.

6 And I think it talks about the -- I'm
7 going to sort at the bottom of 57 on Deforche, the
8 last line of: The operating system on the computer
9 device.

08:37 10 And then it says, comma, a modem host
11 communication interface and communication between
12 that wireless modem device and the computer.

13 Q. Go to the bottom of 57.

14 A. I'm at Exhibit 1030 and I was on the
08:37 15 first page, at the paragraph starting in parens.

16 Q. Yeah, the abstract.

17 And I direct you to Paragraph 67 in your
18 report declaration.

19 A. Okay.

08:38 20 Q. And the very last sentence says:
21 Deforche's disclosure is directed to connecting a
22 computer device to a wireless communications network
23 via a modem rather than specific methods or systems
24 for the transmission of audio or video data.

08:39 25 Correct?

1 A. That's correct.

2 Q. Is Deforche limited to a particular data
3 type?

4 A. Can you be more specific?

08:39 5 Q. The data that Deforche is communicating
6 from the computer device to the wireless
7 communication network, is that limited to a specific
8 data type, such as video or audio data?

08:39 9 A. I don't recall in Deforche it specifying
10 or limiting itself to one specific type of data for
11 the modem.

12 Q. So Deforche could be directed to sending
13 audio data or video data. Correct?

14 MR. HALVERSON: Objection; form.

08:39 15 A. I think the modem of Deforche is intended
16 in using its TCP/IP stack, et cetera, to send --
17 similar to our other email example, different types
18 of ASCII data or audio or something like that,
19 video.

08:40 20 Q. So you did some experiments with Barco's
21 ClickShare product. Correct?

22 A. That's correct.

23 Q. Does the Barco system use portable
24 application?

08:40 25 A. As I recall, and in my section of my

1 declaration, there is an application that's stored
2 on the -- I think we've been referring to it as the
3 dongle -- that's run on that host computer.

08:41 4 Q. Is that application stored on a dongle a
5 portable application in the context of the '002
6 patent?

7 A. That's correct, that I talk about that at
8 least in part in Paragraph 130, 134.

08:41 9 Q. Is the portable application
10 special-purpose software?

11 A. In the sense that it -- well, it's a
12 portable application for performing -- in this case
13 it's doing the screen scraping of video data via
14 that portable application using the various generic
08:41 15 drivers, as I recall.

16 Q. What is a special-purpose application?

17 MR. HALVERSON: Objection; form.

18 A. I think something that might be
19 special-purpose might be examples of -- well, I
08:42 20 don't know that that's a term that I've defined in
21 my declaration, but perhaps specifically written
22 software for a very specific piece of hardware or
23 something like that, that couples with a specific
24 application.

08:42 25 Q. Does the Barco ClickShare product require

1 a special-purpose software to function?

2 A. I don't recall talking about, in the '002
3 declaration a -- I think your question is
4 specific-purpose software. I talk about the
08:43 5 portable application. I mention at least the
6 operating systems that were used on that test
7 machine, and at various places, I talk about drivers
8 or generic drivers or pre-installed generic drivers
9 versus something like a custom driver for a custom
08:43 10 piece of hardware or something like that. But I
11 don't recall talking about special-purpose
12 applications.

13 Q. Okay. Well, my question wasn't whether
14 you talked about whether the Barco system used
08:43 15 special-purpose software in your declaration. My
16 question is whether it's your opinion that the Barco
17 ClickShare product uses special-purpose software to
18 function.

19 A. I guess I need -- I need a little more
08:44 20 context, but it would seem to me that the portable
21 application Barco is -- it would have a special
22 purpose in the sense of how it -- that it's doing
23 screen scraping for the intended user use case
24 versus it being some other piece of software like
08:44 25 x-ray imaging technology or Microsoft Excel or

1 something.

2 Q. Or a generic software like a
3 pre-installed generic driver?

08:44

4 A. I would consider a driver of any kind --
5 it is a piece of software, but I wouldn't say that
6 it's an application like Microsoft Excel in my prior
7 example.

08:45

8 Q. And the Barco ClickShare product would
9 not work without that special-purpose software
10 stored on the dongle. Correct?

08:45

11 A. I would say that the -- if the testing
12 that I've performed, that Barco portable application
13 is part of the overall use flow. Whether parts of
14 the Barco product work without the application
15 running, I don't recall was something I tested.

16 (Exhibit 1067 was marked.)

17 Q. All right. Exhibit 1067. Give you a
18 moment to look at that.

19 (Pause.)

08:49

20 At the bottom, it talks about a
21 ClickShare app on Page 1.

22 You see that?

23 A. Yes.

24 Q. Do you know what the ClickShare app is?

08:49

25 A. I think this may be describing the

1 application we were talking about that is -- that
2 resides in the nonvolatile memory of the button that
3 you can start from with a Windows laptop, for
4 example. I think that's what it's referring to.

08:49 5 Q. Okay. And you say at the end of the
6 sentence: The ClickShare Windows driver is needed?

7 A. Yes.

8 Q. What is the ClickShare Windows driver?

9 A. It looks like it is referring to a driver
08:50 10 for the Windows OS, Windows operating system, and
11 it -- it says there's a Version 1.20 here it
12 mentions -- it looks like an earlier version below.

13 Q. Is the ClickShare Windows driver a
14 pre-installed generic driver?

08:50 15 A. It sounds like it would be. There's
16 really only this sort of one-line statement here,
17 but it sounds like that would be one of the
18 pre-installed drivers for the Windows operating
19 system.

08:51 20 That would also align I guess with my
21 testing because the first part of that sentence is
22 saying in order to start the ClickShare app on the
23 button automatically when plugging it in and I
24 was -- I recall seeing that behavior. And on the
08:51 25 Windows test machine I was using, I was just using

1 the built-in Windows drivers.

2 Q. Do you see the URL at the bottom of the
3 document?

4 A. Yes.

08:52 5 Q. All right. So this is a -- based on that
6 URL, this is a document from the Barco.com website.

7 Correct?

8 A. That --

9 MR. HALVERSON: Objection; form.

08:52 10 A. That looks like what this is. It -- it
11 sounds like this would be a -- as you can see, the
12 \EN support software, it sounds like this may be a
13 software support document they're hosting.

14 Q. Is it possible that the ClickShare
08:52 15 Windows driver is stored on the dongle and then
16 installed onto the computer that the dongle is
17 plugged into?

18 MR. HALVERSON: Objection; form.

19 A. I don't recall seeing that in the work
08:52 20 that I did. The application was on the dongle and
21 run from the dongle, and then when the application
22 was stopped and the dongle was removed, for example,
23 the application was no longer there. And I believe
24 in my report, I showed the file path to the storage
08:53 25 location where that application sat and that it was

1 no longer -- I think I showed that it was no longer
2 there when it was removed perhaps.

3 Q. Which paragraph is that?

4 A. I'm looking for that right now.

08:53 5 Q. Okay.

6 A. (Pause.)

7 I don't see that I have that picture
8 included in this report. It may have been in a
9 different report.

08:54 10 Q. Do you know which of your reports had
11 that?

12 A. I seem to recall it may have been in the
13 report related to the litigation. I had photos of
14 the -- what's called signaling, but it's a command
08:54 15 line interface. It showed the path to where the
16 Barco application sat on the dongle rather than
17 being located somewhere on, like, C: hard drive on
18 Windows or something like that.

19 Q. I have a copy of your report from IPR
08:54 20 No. IPR 2024-01437 for the U.S. Patent
21 No. 10,762,237. You can pull that up on your
22 computer if you'd like.

23 A. Okay. One moment.

24 MR. HALVERSON: And just so the
08:55 25 record's clear, are we going to do different

1 transcripts or are we going to do one big transcript
2 where we're going to have all of them?

3 MR. GREENLEAF: We're going to do
4 different transcripts.

08:55 5 MR. HALVERSON: We didn't actually do
6 a read-on at the beginning. Is this for the '002 or
7 is this going to be for the '237 or a different one?

8 MR. GREENLEAF: Thank you for asking.
9 This is for the '002 patent IPR No. IPR 2024-01436.
08:55 10 But for purposes of this IPR, we'll mark this as
11 Exhibit 1068.

12 (Exhibit 1068 was marked.)

13 Q. And I'll direct you to Paragraph 112.
14 Paragraph 112, you have that in front of you.
08:57 15 Correct?

16 A. I do.

17 Q. What is that image in Paragraph 112?

18 A. This is a screen capture of a window
19 running on my test machine of this USB DE — or DEVU
08:57 20 tool running and it is showing that while the
21 ClickShare button is inserted into the machine, that
22 it's presenting itself here showing things such as
23 the USB input device, USB audio device. I'm taking
24 those from the description column as well as the
08:57 25 Barco ClickShare button, USB mass storage device,

1 et cetera.

2 Q. What is the last line of that USB DEVU
3 image?

08:58 4 A. It looks like on the leftmost is showing
5 what's listed as device name and then there's a
6 description in the next column of Barco ClickShare
7 button. There's a -- I think the middle column
8 would be connected or connection. The next one is
9 driver file name Barco ClickShare DR and then driver
08:58 10 description Barco ClickShare button.

11 Q. And in your opinion, is that Barco
12 ClickShare driver file a pre-installed generic
13 driver?

08:58 14 A. That the -- as I recall, the
15 pre-installed generic drivers being used were
16 related to this USB input audio mass storage,
17 et cetera. I see that that shows up as having a
18 driver file name here. I don't -- in my testing,
19 there were no drivers that were requested to be
08:59 20 installed or installed on the machine.

21 Q. So where did this Barco ClickShare driver
22 file come from?

23 A. It looks like it may have been part of
24 the Barco dongle itself. I also note on the
08:59 25 leftmost column. It's highlighted in red.

1 Q. What does that mean?

2 A. I would have to go back and look at the
3 manual on the tool to see what that denotation
4 means. Whereas, the others that we were just
08:59 5 talking about are shown in green.

6 Q. Is the Barco ClickShare driver
7 special-purpose software?

8 A. To the extent it's a driver, I would have
9 to go back and look for you if that's some other
09:00 10 backup driver or something that was included with
11 the physical dongle or where that came from. But as
12 I recall in my analysis, it wasn't something that
13 was coming up as being executed or used.

14 Q. So if the Barco ClickShare driver was
09:00 15 included and it's included with the dongle and
16 installed from the dongle, would that be a
17 pre-installed generic driver?

18 A. I would say if there was another driver,
19 this Barco ClickShare button included in the dongle
09:01 20 and then installed onto, in our example, this
21 Windows test machine as another non-pre-installed
22 generic driver, then that wouldn't be a — it sounds
23 like from your description that wouldn't be a
24 pre-installed generic driver. I'd need to go back
09:01 25 and look at that.

1 Q. And if that driver remained on your test
2 machine after you disconnected the dongle, would you
3 consider the Barco application to be zero-footprint?

4 MR. HALVERSON: Objection to form.

09:02 5 A. The application itself maybe would still
6 be zero-footprint in the sense that it doesn't
7 modify, for example, the Windows registry and
8 install itself on the hard disk driver on the
9 computer.

09:03 10 Q. Does Claim 1 of the '002 patent require a
11 zero-footprint application?

12 A. I'm just going back to the claim for you.

13 It looks like Claim 1 of the '002 is not
14 one of the claims that mentions a zero-footprint
09:03 15 application.

16 Q. Do any of the claims in the '002 patent
17 cite the zero-footprint application -- let me
18 scratch that question.

19 None of the claims of the '002 patent
09:04 20 recite a zero-footprint application explicitly.
21 Correct?

22 A. That sounds right. I'm just trying to
23 keep track of the different claims across the
24 different patents.

09:04 25 Q. Do any of the claims implicitly require a

1 zero-footprint application?

2 MR. HALVERSON: Objection; form.

3 A. I would say I don't -- I don't see that
4 language mentioned here, but I haven't performed
09:04 5 that analysis. I know that I perhaps discuss it in
6 the '002 declaration with regard to motivation to
7 combine references, but I don't see it explicitly
8 called out in the claim language.

9 Q. Okay. I'd like to direct you to
09:05 10 Paragraph 53 of your report in the '002 Patent IPR.

11 A. Okay.

12 Q. And right in the middle there, there's
13 the word "zero-footprint." Do you see that?

14 A. You said 52 or 53?

09:05 15 Q. 53.

16 A. Yes, I do.

17 Q. And there's a sentence that says:
18 Because the software application is stored on the
19 peripheral device and loaded onto the processing
09:05 20 device when coupled, the software is implemented as
21 a portable application thereby leaving a
22 zero-footprint on the processing device once
23 disconnected.

24 Correct?

09:05 25 A. That's correct.

1 Q. So if the -- and the Barco system, the
2 Barco -- let me start over.

3 The Barco ClickShare system leaves a
4 zero-footprint on the processing device in your
09:05 5 opinion. Correct?

6 A. That's correct.

7 Q. But if it installs this Barco ClickShare
8 driver, you would still call that a zero-footprint.
9 Correct?

09:06 10 MR. HALVERSON: Objection; form.

11 A. I would say in this example, perhaps
12 there's in this sort of, I guess I'll call it a
13 hypothetical scenario, if there's a new driver
14 installed on the machine and not removed before the
09:06 15 application or the dongle is removed, then I guess
16 that new driver would remain there. But that
17 wouldn't necessarily preclude -- or I -- to say it
18 another way, the application would still be
19 zero-footprint if the application doesn't install
09:06 20 itself on the computer or modify the registry and
21 things like that. There would still be no trace of
22 the application once it stopped running and the
23 device -- the dongle device was removed.

24 MR. GREENLEAF: Okay. I'd like to
09:07 25 take a break, a five-minute break.

1 MR. HALVERSON: Okay.

2 MR. GREENLEAF: Off the record.

3 (Break.)

4 Q. So we're back on the record.

09:19 5 So we're going to look at Exhibit 1027,
6 which is Kaplan. I direct you to Paragraph 40.

7 MR. HALVERSON: You said 1027.
8 Right?

9 MR. GREENLEAF: Yes.

09:19 10 Q. Do you have that, Dr. Brogioli?

11 A. I do.

12 Q. And you see the second sentence says:
13 The system includes one or more of the following
14 features and benefits.

09:19 15 In Paragraph 40?

16 A. I do.

17 Q. And the third feature or benefit is no
18 complex software installation or online setup is
19 needed. Correct?

09:20 20 A. I see it says that, yes.

21 Q. What does that mean?

22 MR. HALVERSON: Objection to form.

23 A. So it seems to be in the gist of this
24 Paragraph 40 of Kaplan that it's striving to at

09:20 25 least minimize some of the software install overhead

1 that a user has to do. And so it's saying -- it's
2 saying that there's not a complex software
3 installation process or online, I guess, requiring,
4 like, a remote server to log in to an account.

09:21 5 Online setup is required.

6 For, I guess, whatever Kaplan's
7 definition of "complex" is.

8 Q. All right. I direct your attention to
9 Paragraph 48, please.

09:21 10 A. Okay.

11 Q. The second sentence says: If
12 appropriate, software is already installed on a
13 computer 220. Then the resident software
14 application may check the installed software to
09:22 15 determine if the software is a current version and
16 then update the software if needed.

17 Do you see that?

18 A. At the very end it says "update the
19 computer if needed," but, yes.

09:22 20 Q. So if the computer does not need to be
21 updated, then Kaplan would not install software on
22 the computer. Correct?

23 MR. HALVERSON: Objection; form.

24 A. It sounds like in this scenario Kaplan
09:22 25 has already installed software on the computer. And

1 then the process of 48 is that, okay, if Kaplan's
2 software is already installed, then a check can be
3 done to see if that already-installed Kaplan's
4 software is current or there's an update available.
09:23 5 It goes on to talk about if codecs need to be
6 updated or things like that.

7 Q. I'd like to go back to Deforche, please.

8 MR. HALVERSON: 1030?

9 MR. GREENLEAF: Yes, thank you.

09:24 10 Exhibit 1030.

11 Q. And I'd like to look at Paragraph 15. Do
12 you have that in front of you, Dr. Brogioli?

13 A. I do.

14 Q. It says: In preferred embodiments the
09:24 15 wireless modem device stores at least one
16 application and is provided for launching said
17 application as a portable application.

18 Do you see that?

19 A. Yes.

09:24 20 Q. And the wireless modem device is a
21 peripheral device. Correct?

22 MR. HALVERSON: Objection; form.

23 A. I believe that's what Dr. Almeroth is
24 mapping it to.

09:25 25 Q. Do you disagree that the wireless modem

1 device is a peripheral device?

2 A. I don't recall offering an opinion as to
3 whether Deforche's wireless modem device meets the
4 wireless modem device of the '237 claims. But,
09:25 5 rather, I was responding to Dr. Almeroth's
6 motivation to combine Deforche in different ways
7 with other references.

8 Q. So you have no reason one way or the
9 other of whether Deforche's wireless modem device
09:25 10 constitutes a peripheral device?

11 A. As to whether it's the peripheral device
12 of the claims, I haven't done that analysis.

13 Q. What is a peripheral device?

14 A. Depending on the references we've been
09:25 15 talking about, it seems to be -- an example is like
16 the Barco dongle, which connects via, you know, a
17 connector to the USB connection of the host
18 computer.

19 Q. Let's look at Paragraph 6 of Deforche.
09:26 20 It says: As used herein with wireless modem device
21 is intended to mean a computer peripheral device.

22 Do you see that?

23 A. Yes.

24 Q. Do you agree that the wireless modem
09:26 25 device of Deforche is a peripheral device?

1 A. I would say in the -- in the general
2 sense of personal computers, for example, like my
3 mouse is, in the industry, considered a type of
4 peripheral, it sounds like the wireless modem of
09:26 5 Deforche is what Deforche is referring to as a
6 similar type of peripheral device.

7 Q. Is there a difference between the term
8 "peripheral device" in the '002 patent and
9 Deforche's use of the term "peripheral device"?

09:27 10 A. I haven't done that exhaustive analysis.

11 Q. Can you do that for me now, please?

12 A. Okay.

13 MR. HALVERSON: So to be clear for
14 the record, you're asking him to do some analysis
09:27 15 that he did not do with his declaration that he's
16 here to be deposed on. Right?

17 MR. GREENLEAF: Yes. In his decades
18 of experience as an expert and engineer. And I'd
19 like to know whether the term "peripheral device" as
09:27 20 it appears in Deforche has a substantive difference
21 from the term "peripheral device" as it appears in
22 the '002 patent.

23 MR. HALVERSON: In the claims or the
24 specification of the '002 patent?

09:27 25 MR. GREENLEAF: The claims.

1 A. (Pause.)

2 So even just in Claim -- let me pause.

3 You're asking me about the '237 patent or the '002
4 patent?

09:28 5 Q. The '002.

6 A. Okay. So even in Claim 1, the phrase
7 "peripheral device" is used in a lot of -- a lot of
8 different places with a lot of different supporting
9 description around it. So I've really only
09:28 10 addressed the peripheral device, as I recall, of
11 Deforche largely in the context of -- in the '002 --
12 in arguments relating to the way Dr. Almeroth
13 proposes combining that Deforche reference with a
14 couple of other references that he cited to as well.

09:29 15 The Deforche references 13 two-column
16 pages, so I'm not sure that I can do this analysis
17 for you on the spot regarding how the peripheral
18 device described in the claims of the '002 is
19 identical to or possibly different from the universe
09:29 20 of ways Deforche describes his wireless modem device
21 in the reference.

22 Q. Earlier you testified that in a general
23 sense, a personal computer, for example -- and I'm
24 going to paraphrase here -- that a mouse is
09:30 25 considered an example of a type of peripheral

1 device.

2 You agree with that statement. Correct?

3 A. Yes, that I was referring to, you know,
4 you could, at a time, or probably today, walk about
09:30 5 into a Best Buy or Fry's, and there's a row with
6 computer peripherals that are -- things that people
7 talked about in a customer sense that were not the
8 computer itself, but things you could generally plug
9 into it.

09:31 10 Q. And a wireless modem is another example
11 of a peripheral device. Correct?

12 A. I would say in the general sense of
13 something that you would connect to your desktop
14 computer or other at this point in time. It would
09:31 15 be something that's a peripheral. I don't know that
16 it's necessarily the peripheral device of the
17 patents. I haven't analyzed that.

18 Q. All right. I'd like to turn your
19 attention to -- before we do that, what is the plain
09:32 20 and ordinary meaning of "peripheral device" in the
21 context of the '002 patent?

22 MR. HALVERSON: Objection; form,
23 scope.

24 A. Well, I think someone would refer to the
09:32 25 specification of the '002 I guess maybe starting in

09:33 1 Column 5 halfway down and see that it references
2 around Line 24 a standard class of peripheral
3 devices and then goes on to say: It's a peripheral
4 that couples to the processing device. It has a
5 transceiver. That using this pre-installed generic
6 driver, providing for communication between the
7 peripheral and the processing device or the computer
8 itself, that goes on to describe communications
9 network.

09:33 10 So these are all things someone of skill
11 in the art reading the description of "peripheral
12 device" in the '002 would understand.

13 Q. Does Deforche's wireless modem have a
14 transceiver?

09:33 15 A. So Deforche is talking about the ability
16 for wireless communication. So I would imagine
17 there's some form of way to transmit and/or receive
18 some kind of information off a wireless interface.
19 I don't see that it explicitly mentions a
09:34 20 transceiver.

21 Q. So you don't know whether Deforche's
22 wireless modem has a transceiver?

23 A. The -- whether it specifically calls it a
24 transceiver or there's multiple -- a receiver or a
09:34 25 transmitter or how -- or if Deforche is silent on

1 that, but it looks like Deforche is describing the
2 ability to communicate by transmitting or receiving
3 on a -- to or from this wireless network, at least
4 on Column 7 or so.

09:34 5 Q. All right. Let's look at Paragraph 15.
6 It talks about portable application. Correct?

7 A. Yes.

8 Q. And what is the portable application in
9 the context of Deforche, Exhibit 1030?

09:35 10 A. So it looks like here in 15 Deforche's
11 modem device has an application, and it's saying
12 this is a portable application and describes things
13 such as the applications keeping all of its data in
14 the -- the memory that's part of the wireless modem,
09:35 15 rather than, you know, installing it or logging it
16 or copying it to hard drives or something on the
17 host computer.

18 That's at least part of what Deforche
19 describes here. It looks it's also describing,
09:36 20 around Line 20 of that same paragraph, that in his
21 example of a web browser application that the
22 settings get predefined. And in that case it's
23 going to use this proxy server, I guess, to connect
24 to the internet. It looks like he's describing the
09:36 25 context of the portability.

1 Q. And that second sentence says: The
2 application.

3 And that's referring to the portable
4 application. Correct?

09:36 5 A. That's what it looks like. Right.

6 Q. And then it says: The application can,
7 for example, be a web browser application, a
8 document viewer application for viewing A.O.
9 downloaded documents or other.

09:37 10 Do you see that?

11 A. I do.

12 Q. Is Deforche limited to that list of
13 example applications?

14 MR. HALVERSON: Objection; form.

09:38 15 A. I'm just doing a quick search for you.

16 (Pause.)

17 It looks like Deforche mentions the web
18 server applications as an example and then mentions
19 just other references to application — I don't know
09:38 20 if it's limited to that or not. I do note that it
21 says that's one example.

22 Q. So you don't see anything in Deforche
23 that limits the portable application to those
24 examples. Correct?

09:39 25 MR. HALVERSON: Objection; form.

1 A. Yeah, I don't -- I mean, I see that the
2 language says the application, for example --
3 sorry -- the application can, for example, be a web
4 browser application that I think he may be intending
09:39 5 to say that's an example. I didn't see that he
6 lists any other explicit examples.

7 Q. In your opinion each of those examples
8 must be a zero-footprint application. Correct?

9 A. That the application -- or the portable
09:40 10 applications that Deforche talks about are
11 zero-footprint. And then in the case of Deforche,
12 the user doesn't need to have these administrator
13 rights to get access to certain levels of -- or
14 doesn't need certain levels of accessibility to run
09:40 15 these applications on the -- the host computer of
16 Deforche.

17 Q. Does Deforche require that the
18 applications -- let me rephrase that.

19 Does Deforche require that the portable
09:40 20 applications must be zero-footprint?

21 A. In that it looks like when Deforche is
22 talking about the portable application, Deforche is
23 saying it's got to keep its applications in this
24 cache that's way over in the memory of the wireless
09:41 25 modem device, rather than leaving any traces on the

1 computer -- on the computer device.

2 So that -- those examples all, to me, are
3 these zero-footprints that I talk about in my
4 declaration.

09:41 5 Q. So in Paragraph 31 it says: A preferred
6 implementation, as discussed below, named the
7 zero-footprint solution.

8 Do you see that?

9 A. I see that.

09:41 10 Q. And what is the zero-footprint solution,
11 in general?

12 A. So it looks like in 33 of Deforche, it
13 talks about zero-footprint solution based on mainly
14 five elements. The fifth one of which is this
09:42 15 program launcher in portable applications. And then
16 Deforche mentions the web browser application we
17 talked about before that's using that notion of the
18 data being in this local cache of the wireless
19 device, and not leaving a footprint on the computer.

09:42 20 Q. It says in Paragraph 31: A preferred
21 implementation.

22 You understand that to mean that a
23 portable application must leave a zero-footprint on
24 the PC. Correct?

09:42 25 A. As I recall, the parts of Deforche that

09:43 1 Dr. Almeroth was talking about included this
2 zero-footprint aspect of Deforche. And why it
3 wouldn't make sense to combine this Deforche
4 reference with other of the references Dr. Almeroth
5 found that taught in the opposite direction.

6 Q. Because it would leave a footprint
7 potentially on the computer. Correct?

8 A. Or that they require the installation of
9 software that would leave a footprint, among other
09:43 10 aspects.

11 Q. So if the portable application required
12 to leave a footprint, the person of ordinary skill
13 in the art would not use Deforche's teachings.

14 Correct?

09:43 15 A. I would phrase it another way, in that
16 some of the references of Dr. Almeroth's that
17 required specific software installation from or on
18 the hard disk drive, and perhaps registry of the
19 Windows machine, taught of doing these things in the
09:43 20 opposite direction of Deforche's aspect of the
21 zero-footprint nature of Deforche.

22 Q. So where does Deforche say that it
23 requires the portable application to be
24 zero-footprint?

09:44 25 A. That Deforche says in 20 -- sorry --

1 Paragraph 31, that the preferred implementation is
2 named a zero-footprint and discussed below.

3 And that I was responding to various
4 embodiments of Dr. Almeroth's. It sounds like
09:44 5 perhaps based in Paragraph 31 there may be some
6 aspects of a nonpreferred implementation of Deforche
7 that does something different.

8 I don't recall Dr. Almeroth or I --
9 Dr. Almeroth addressing that or my responding to
09:45 10 that.

11 Q. Can you identify any language in Deforche
12 that requires the portable application to be
13 zero-footprint?

14 A. (Pause.)
09:46 15 So in numerous places Deforche discusses
16 portable applications. And then the claims -- at
17 least some of these claims as well talk about the
18 portable application nature, such as Claim 8. And
19 it talks at length about -- or in multiple places
09:46 20 about the preferred embodiment. I don't see that at
21 least explicitly Deforche uses a word like
22 "restricts to," but it talks at length, six, seven
23 pages throughout about the portable application
24 being the preferred embodiment.

09:46 25 Q. When you say "the portable application

1 being the preferred embodiment," you mean the
2 zero-footprint portable application?

3 A. The zero-footprint aspect of it, yes.

09:47 4 Q. Yeah. And if the portable application is
5 not zero-footprint, then you would not use
6 Deforche's teachings. Correct?

7 MR. HALVERSON: Objection; form.

8 A. I'm not quite sure I'm following the
9 question.

09:47 10 Q. So if the person of ordinary skill in the
11 art developed a portable application that installed
12 software on the PC or made changes to the registry,
13 they would not look to use any of Deforche's
14 teachings in combination with their portable
09:47 15 application. Correct?

16 A. That seems to be something outside of
17 what -- what I discussed. My -- the opinions I
18 offer in my declaration are around combinations of
19 specific references or embodiments of references
09:47 20 that Dr. Almeroth offered.

21 And why those combinations weren't --
22 didn't make sense in regard to a POSITA because of
23 the way that -- at least in part the software
24 installation worked between the various of them.

09:48 25 I don't recall Dr. Almeroth offering sort

1 of a new version of his Deforche that he was then
2 combining with other references, if that's what
3 you're asking.

09:48

4 Q. So a web browser can be a portable
5 application. Correct?

6 A. That sounds like what Deforche talks
7 about in places, yes.

8 Q. Can a media player be a portable
9 application?

09:48

10 A. I don't recall Deforche talking about
11 that, but one could probably implement it that way,
12 depending on, you know, how -- how it's supposed to
13 function.

14 (Break.)

09:51

15 Q. Would the person of ordinary skill in the
16 art at the priority date of the '002 patent have
17 understood that the Windows operating system
18 includes pre-installed generic drivers?

19 A. Yes.

09:52

20 Q. So would the person of ordinary skill in
21 the art have understood that Kaplan's invention
22 could have used the Windows operating system?

23 A. Let me pull Kaplan up.

09:52

24 Q. Paragraph 47 explicitly states: For
25 example, a Windows operating system may be

1 configured, et cetera.

2 A. Yeah, this was one of the paragraphs I
3 was thinking of. So Kaplan mentions the Windows
4 operating system and then things such as the
09:53 5 autoplay.inf file that are part of that.

6 So to answer the question, this person of
7 skill would understand that Windows would be an
8 option to use here.

9 Q. And that Windows operating system that
09:53 10 Kaplan is referring to would have included
11 pre-installed generic drivers. Correct?

12 A. Generally at this time a person of skill
13 would understand Windows would come with
14 pre-installed generic drivers.

09:53 15 Q. Is there anything in Kaplan that you can
16 point to where it would not be using the
17 pre-installed generic drivers of the Windows
18 operating system to communicate to a peripheral
19 device connected to a USB port, for example, as
09:53 20 illustrated in Figure 2?

21 MR. HALVERSON: Objection; form.

22 A. I'm just going back to that section of my
23 declaration.

24 (Pause.)

09:54 25 So I don't see anything in Kaplan that

1 explicitly mentions driver or drivers one way or the
2 other. Largely what I discussed in my '002
3 declaration are aspects of the software installation
4 that Kaplan discloses and discusses.

09:55 5 Q. You say in Paragraph 101 that Kaplan does
6 not disclose drivers. But it does disclose Windows,
7 which a person of ordinary skill in the art would
8 understand includes drivers.

9 So what do you mean when you say Kaplan
09:55 10 does not disclose drivers?

11 A. It was what I was just getting at. So
12 Kaplan talks about the functionality of its video
13 application, we'll call it, and aspects of software
14 installation requirements, et cetera.

09:55 15 In terms of discussing drivers, Kaplan
16 doesn't explicitly say one way or the other, as I
17 recall, anything about drivers. It mentions that
18 Windows is an example of an OS that has the
19 autoplay.inf of Kaplan — and I agree. A POSITA
09:56 20 would understand that Windows would have
21 pre-installed generic drivers available.

22 But Kaplan doesn't really say anything
23 about drivers one way or the other.

24 Q. Because it doesn't use the word "driver."
09:56 25 Correct?

1 A. At least one aspect of it, yes.

2 Q. But Kaplan inherently uses drivers
3 because it needs drivers to drive the USB interface.

4 Correct?

09:56 5 MR. HALVERSON: Objection; form.

6 A. Again, I don't see that Kaplan says one
7 way or the other.

8 Q. So what besides the driver could Kaplan
9 use to send data over the USB interface?

09:56 10 A. I would think for the time frame in
11 Kaplan, which I definitely don't remember, is 2010.
12 As I recall, it talked to peripherals or ports and
13 things like that. You would need some kind of
14 driver to be compliant with the OS. Whether that's
09:57 15 in Kaplan a generic driver, pre-installed, or not,
16 whether it's some custom solution, I don't recall
17 Kaplan saying one way or the other.

18 Q. Okay. Okay. So I'd like to look at
19 Claim 1 of the '002 patent, Element B, where you
09:58 20 said: Setting up by means of a pre-installed
21 generic audio driver of the operating system, a
22 means for audio communication.

23 Do you see that?

24 A. Yes.

09:58 25 MR. HALVERSON: Do you have an '002

1 patent?

2 MR. GREENLEAF: Yeah. I don't have a
3 different copy. I can email you one.

4 MR. HALVERSON: That's okay.

09:59 5 Q. All right. So, now, B, the setting up
6 limitation. Does -- is another way of looking at
7 this that the -- that you use a pre-installed
8 generic audio driver to set up the means for audio
9 communication?

09:59 10 A. I would say it's setting -- it's
11 describing setting up this means for audio
12 communication. And the way it's doing that is by
13 its pre-installed generic driver or the first -- of
14 the claim the first pre-installed generic audio
09:59 15 driver.

16 Q. So how does the first pre-installed
17 generic audio driver set up a means for audio
18 communication?

19 MR. HALVERSON: Objection; form.

09:59 20 A. That -- I don't know that I would phrase
21 it that way, is that there is a means for this audio
22 communication happening between that processing
23 device, let's call it the computer, and the
24 peripheral device, and that's being done by this
10:00 25 pre-existent generic audio driver on, in our

1 example, the Windows machine or other operating
2 system.

3 Q. I'm trying to understand what "setting
4 up" means.

10:00 5 MR. HALVERSON: Object. I'm sorry.
6 There is not a question pending.

7 Q. Is "setting up" a term of art?

8 A. I would think so, depending on the
9 context you're talking about. You know, for
10:01 10 example, setting up a channel in a wireless system
11 or something. Here it looks like it's talking about
12 using this driver and establishing connection via it
13 to transmit this audio data via the audio driver.

14 Q. What does it mean, establishing a
10:02 15 connection via the driver to transmit the audio
16 data?

17 MR. HALVERSON: Objection; form.

18 A. Where are you -- are you reading from the
19 claim somewhere? I'm not following you.

10:02 20 Q. I'm reading the transcript here, your
21 last answer. You testified that according to this
22 realtime, that what the claim is talking about is
23 using the driver and establishing a connection via
24 it to transmit the audio data via the audio driver.
10:03 25 And I'm just wondering what "establishing the

1 connection" means?

10:03 2 A. I don't recall all of the specific syntax
3 of USB audio driver API calls and things, but you
4 would -- you would set up a connection there and
5 then you would use things like sending audio
6 asynchronous or receive audio synchronous in various
7 of those functions for your different endpoints via
8 the different functionality that's disclosed in
9 these drivers.

10:03 10 Q. And so, so long as data is being
11 transmitted from the PC to the peripheral device,
12 there must have been a connection established.

13 Correct?

10:04 14 A. That if those send or receive API calls
15 are being used, there would be a generic -- a
16 pre-installed generic audio driver and pathway to
17 send audio, for example. Audio communication.

10:05 18 Q. Look at Paragraph 108 of your
19 declaration. And the penultimate sentence says:
20 Deforche uses pre-installed generic drivers to
21 communicate IP data.

22 Do you see that?

23 A. I do.

24 Q. What is IP data?

10:05 25 A. I'm going back to Deforche.

1 So in 33, Deforche talks about a TCP/IP
2 stack and the sending of IP or internet protocol
3 data using Deforche's above-mentioned USB/HID
4 channel. And so it's -- here he -- or Deforche is
10:06 5 talking about sending packetized IP protocol data
6 here.

7 Q. And earlier we talked about how data can
8 be video data, audio data, ASCII text data.

9 Does that still apply here to the IP data
10:06 10 that Deforche discloses?

11 A. I would say that sounds right in the
12 sense of sending these IP packets out over an
13 internet or something like that. You could have
14 different types of data as that payload that was
10:06 15 discussed earlier.

16 I'll add to that there are cases where
17 that might be acceptable or might not. For example,
18 in your audio data scenario, if I'm just sending an
19 MP3 to somebody via email, there's no realtime
10:07 20 aspect to it or loss of data or quality. It just
21 shows up and then sometime later I play it. If I'm
22 trying to do realtime audio communications, that may
23 or may not work. Things like that.

24 Q. Which layer of the OSI stack is internet
10:07 25 protocol packets in?

1 A. I would have to go back and look for you
2 at which of potentially multiple layers those exist
3 in.

10:08 4 Q. You have your computer connected to the
5 internet. Correct? Can you look up --

6 A. I think so.

7 Q. -- which layer the IP protocol is in?

8 A. (Pause.)

10:08 9 Q. I'm guessing it's in Layer 3, the network
10 layer.

11 A. It's looking like there's -- I'm looking
12 at the right thing here.

13 I'm looking at the internet layer that
14 shows the IP data gram. And the transport layer is
10:09 15 talking about breaking into segmentation for either
16 TCP or UDP. But I explicitly see the IP data gram
17 in the internet layer.

18 Q. Okay. And what is an IP data gram?

10:09 19 A. Those are effectively blocks of data and
20 sort of the bookkeeping information that goes with
21 that that get transmitted out.

22 Q. What is the bookkeeping information?

23 A. As I recall, there's things like
24 addresses and other information source and
10:09 25 destination-type information that's not the actual

1 payload data that you're trying to transmit.

2 So it may be, in our prior example, not a
3 block of MP3 data, but other information associated
4 with it to transmit it through different computers
10:10 5 using this protocol.

6 Q. Does the bookkeeping data differ between
7 audio packets and video packets?

8 A. In this example, if -- as I recall, if at
9 the IP layer, and I'm using, let's say, TCP versus
10:10 10 fast UDP, I don't know that it -- at that layer of
11 the system knows what the data is, being a word file
12 or something else. It just gets packetized up and
13 transmitted.

14 Q. So Deforche uses pre-installed generic
10:12 15 drivers. Correct?

16 A. I'm going back to the section in my
17 declaration for you.

18 (Pause.)

19 So I'm going back to Paragraph 76 in my
10:13 20 '002 declaration and mentioning that one aspect of
21 Deforche is that Deforche discourages the
22 installation of software on the system. That's
23 something it's striving to avoid.

24 So it seems like it would be using
10:13 25 whatever is pre-installed on this machine in

1 Deforche. And I see back -- yeah, Deforche uses the
2 language in the abstract of a pre-installed generic
3 driver.

10:13 4 Q. And those pre-installed generic drivers
5 drive a standard class of peripheral devices.

6 Correct?

7 A. That sounds correct in Deforche, based on
8 its abstract at 57.

10:14 9 Q. Are you aware of any industry trends
10 around 2011 towards plug-and-play solutions that use
11 pre-installed generic drivers?

12 MR. HALVERSON: Objection; form.

10:14 13 A. Generically, the phrase "plug-and-play,"
14 which was somewhat more of a -- I remember it being
15 more of a marketing term, but it may have actually
16 been trademarked or something by an industry group.

10:15 17 Going from memory, I don't recall how it
18 did or didn't relate to what we've been talking
19 about as pre-installed generic drivers. It's just
20 been -- it's just been a number of years.

21 Q. What's your understanding of the meaning
22 of "plug-and-play"?

10:15 23 A. It was a concept of I can buy a device
24 and plug it into my computer, and it would
25 effectively be kind of auto-recognized and

1 auto-functioning in the system versus the older
2 days, where I might -- I'll go back to our Best Buy
3 example -- buy a device in the peripherals aisle
4 that came with a CD-ROM or something that had custom
10:15 5 drivers or software on it kind of thing.

6 Q. And one way to implement plug-and-play
7 was to use pre-installed generic drivers. Correct?

8 A. I simply -- I don't remember what
9 plug-and-play white paper said about doing that or
10:16 10 not doing it.

11 Q. Around 2001 were you designing any
12 drivers at the time?

13 A. In 2001?

14 Q. Or, sorry, 2011. In 2011 were you
10:16 15 designing drivers?

16 A. I had worked on drivers a bit prior to
17 that time frame.

18 Q. Okay. What drivers were you working on
19 prior to that time frame?

10:16 20 A. They were drivers for proprietary
21 development boards that we were selling to a
22 semiconductor company. So if you wanted to write
23 software for them, we had stuff that allowed you to
24 connect in certain ways.

10:17 25 Q. What interfaces would you use to connect

1 to the proprietary boards?

2 A. Going from memory, I think one of the
3 ways to connect was either -- one of the ways was
4 probably USB, maybe Ethernet or something like that.

10:17 5 Q. And you would write your own USB driver
6 to connect to the proprietary board?

7 A. We had a number of different solutions
8 there, if you will, because we were supporting
9 Windows -- at least Windows and flavors of Linux.

10:17 10 I don't recall a lot of the specifics
11 about the -- the OEM-type driver packages that we
12 gave to our customers. The customers for these
13 weren't -- they weren't retail consumers. They were
14 very large companies.

10:31 15 (Break.)

16 Q. Here is Exhibit 1014, which is Ahmed.

17 I'm going to give you a copy of the
18 patent owner response as well. Do you need a paper
19 copy of that?

10:32 20 A. Possibly, yeah. It probably makes sense.

21 MR. HALVERSON: It's the patent
22 owner's response. Okay.

23 MR. GREENLEAF: Yes.

24 MR. HALVERSON: Oh.

10:32 25 MR. GREENLEAF: Is it the wrong one?

1 MR. HALVERSON: No, it's the right
2 one, but it is one reason, I guess -- so some of
3 this stuff is subject to the pending protective
4 order motion.

10:33 5 MR. GREENLEAF: Yeah.

6 MR. HALVERSON: Are we going to get
7 into that or are we going to leave that alone?

8 MR. GREENLEAF: TBD. I don't know
9 whether that would be concerning. We can seal the
10:33 10 transcript if we need to.

11 MR. HALVERSON: Let's not until we
12 need to. And we can address it next.

13 MR. GREENLEAF: Okay.

14 Q. All right. So Page 32 of the patent
10:33 15 owner response, it's actually at the bottom of 31
16 onto 32. It says: Ahmed does not rely on human
17 interface devices or mass storage devices. Instead,
18 Ahmed's novel software system describes use of a
19 special mirror display driver for capturing the
10:34 20 contents of a primary display associated with
21 computer.

22 Do you see that?

23 A. Yes.

24 Q. It says: And a virtual audio driver
10:34 25 installed as a normal audio driver that can be

1 selected as a default playback and/or recording
2 device.

3 Do you see that?

4 A. Yes.

10:34 5 Q. What is a normal audio driver?

6 A. I think that would be an audio driver
7 that would be used to -- that you would see show up
8 in, perhaps, audio devices on your computer and used
9 to play back to a speaker or something like that.

10:34 10 Q. And the abstract of Ahmed says that: The
11 present invention relates generally to methods and
12 systems for the wireless real-time transmission of
13 the data from a source to a monitor.

14 Correct?

10:35 15 A. That's correct.

16 Q. Okay. And what software does Ahmed use
17 to transmit data from the PC to the monitor?

18 A. (Pause.)

19 It looks like I discussed Ahmed's
10:36 20 Figure 5 in my declaration. And I talk about in --
21 going back to my declaration, in 65 I discuss the --
22 Ahmed's software modules or custom software modules
23 that are the mirror display driver and the virtual
24 display driver.

10:37 25 And then in 66 I discuss, with reference

1 to Figure 5, that overview of the video being
2 captured and compressed from the video buffer, audio
3 being captured using audio software and the various
4 syncing that's done in Ahmed via Ahmed's software --
10:37 5 software process.

6 Q. On Figure 5 there's an Element 505 that
7 says: Transmit video and audio in sync.

8 Do you see that?

9 A. Yes.

10:38 10 Q. What does Ahmed use to transmit the video
11 and audio?

12 A. (Pause.)

13 So it looks like in Ahmed the last
14 paragraph in 18 he starts talking about the virtual
10:39 15 audio driver and how this audio is routed around
16 with what he describes this virtual audio cable and
17 various of the pins. And then using the interface
18 such as a wav in API at the next page, on Line 5 or
19 so, capturing via software everything being played
10:40 20 on that system.

21 And then at Line 10 of -- I guess I'm on
22 21 of 53, the media is then transmitted 505 in this
23 synchronous manner wirelessly to be received on a
24 receiver that Ahmed describes. So it's the software
10:40 25 solution in Ahmed -- or Ahmed's custom software

1 solution. Then doing the varies of synchronization
2 and codecs and then transmitting out via
3 transmitter.

10:40

4 Q. Am I rereading this one. It says
5 Section 3?

6 A. At the bottom of -- yeah. I'll do 20 of
7 53, starting around Line 27 to Page 21 of 53, the
8 first half.

10:40

9 Q. I'm sorry. What's this No. 53 you're
10 referring to?

11 A. Of the PDF. So I was on internal Page 18
12 of Ahmed. I apologize for mixing those up.

13 Q. 21 of 53. Got it.

14 (Pause.)

10:41

15 So what would the person of ordinary
16 skill in the art have understood Ahmed to be using
17 for hardware to wirelessly transmit data?

10:42

18 A. They would understand that -- continuing
19 on internal Page 19, that Ahmed is using TCP/UDP
20 realtime at Line 29 and then his -- Ahmed's software
21 solution is doing certain synchronization. And then
22 using the transmitter to -- the transmitter and
23 receiver hardware, I presume, to send the TCP data
24 out to be received by the other receiver.

10:42

25 Q. What's an example of the transmitter and

1 receiver hardware?

2 A. It looks like Ahmed refers to its
3 Figure 2 as an example of the transmitter. Although
4 it just shows a Block 203 as a transceiver.

10:43 5 Though it looks like that would be some
6 component of the computing device 200 that's capable
7 of transmitting and receiving the wireless data of
8 Ahmed.

9 Q. What are examples of transmitter 203 to a
10:44 10 person of ordinary skill in the art?

11 A. I would say something that can transmit
12 and receive data and supports TCP. Whether that's
13 made by what company, I'm not sure. But something
14 that integrates into the computing device and can
10:44 15 be, I guess, used to transmit the audio and video of
16 Ahmed, coming from Ahmed's software.

17 Q. Does a transceiver need to be integrated
18 into the computing device 200?

19 A. I see that in Figure 1 it is illustrated
10:44 20 as being internal to the computing device.

21 Q. So the person of ordinary skill in the
22 art would have understood Ahmed to require the
23 transceiver to be internal to the computing device.

24 Is that correct?

10:45 25 A. I don't know that I've looked at Ahmed

1 for that aspect of it or recall what Dr. Almeroth
2 might have said.

10:45 3 Q. Could the transceiver 203 be, for
4 example, a USB transceiver connected to the
5 computing device 200 rather than an internal
6 transceiver?

7 MR. HALVERSON: Objection; form.

10:45 8 A. I don't think Ahmed -- I don't see that
9 Ahmed discusses USB in its reference. I don't know
10 that it contemplates that style of design that
11 you're referring to. I see that when it points to
12 Figure 2, as an example of the transmitter, it's
13 showing something internal to the computer block
14 200.

10:46 15 Q. So in your opinion the person of ordinary
16 skill in the art would have not found it obvious to
17 use a USB transceiver to implement Ahmed's system.

18 Correct?

19 MR. HALVERSON: Same objection.

10:46 20 A. Yeah, I'm not sure that Ahmed talks about
21 that one way or the other. I think -- again, not
22 something I've addressed in my declaration. But it
23 seems like they would look at Ahmed and think of
24 this as a system with, as it shows in Figure 200, an
10:46 25 operating system and Ahmed's software solution, and

1 a transceiver block internal to the computing device
2 200.

3 It makes other mention of wireless in
4 internal, Page No. 7. And it mentions including the
10:47 5 transceiver 203. It mentions things like desktop
6 operating software, such as flavors of Windows and
7 Linux mobile software. And then at the top of 10 it
8 mentions flavors of 802.11 Wi-Fi, Bluetooth, and
9 other solutions.

10:47 10 I don't see that it's talking about a
11 necessarily peripheral device versus what is shown
12 in that Figure 200.

13 Q. So you don't have an opinion, one way or
14 the other, whether the transceiver of Ahmed must be
10:47 15 internal or can be external. Correct?

16 A. That's not something I recall discussing
17 in my -- my declaration, no.

18 Q. Okay. Let's assume the transceiver 203
19 is a USB transceiver connected to the USB port of
10:48 20 the computing device. Is that one way of
21 implementing Ahmed's invention?

22 MR. HALVERSON: Objection; form.

23 A. I don't -- I don't know. I guess if you
24 have a desktop computer of the time from 2006, which
10:48 25 is almost 20 years ago, with, in your scenario, some

1 kind of external transceiver that connects via USB 2
2 or 1.1 or something like that, I'm not sure how that
3 works. I haven't looked at that from the lens of
4 this time frame.

10:48 5 Q. So you don't know whether in 2006 USB --
6 whether USB Wi-Fi modems existed?

7 A. Oh, no, that's not what I'm saying. They
8 certainly did, even as we look at the Wi-Fi
9 standards here. And USB would have been available
10:49 10 at that time as well.

11 What I was saying is, I haven't looked at
12 Ahmed to understand 20 years ago if you could remove
13 the transceiver and put it in an external box that
14 then connects over whatever USB flavor of the day
10:49 15 was and perform what Ahmed's trying to achieve.

16 Q. So in your opinion maybe it would be
17 impossible to use a USB transceiver with the
18 computing device 200 for Ahmed?

19 MR. HALVERSON: Objection; form.

10:50 20 A. What I'm saying is, I don't know one way
21 or the other. I haven't analyzed Ahmed for that.

22 Q. Okay. You're just saying it doesn't use
23 the word "USB transceiver." That's your opinion.

24 Correct?

10:50 25 A. Oh, I'm saying that it doesn't use that

1 word, but it also doesn't seem to indicate anything
2 that would be the architecture of Ahmed using the
3 external device. It certainly goes to the trouble
4 of mentioning then-available standard technology
10:50 5 here on Page 10. And I don't see it talking about
6 USB of the day.

7 Q. When you say Page 10 you're referring to
8 Page 8 of Ahmed. You're saying 10 of 53. Right?

9 A. 10 of 53. That's correct.

10:51 10 Q. Yeah. But it does mention 802.11.
11 Correct?

12 A. It does.

13 Q. What is 802.11?

14 A. They are various flavors of Wi-Fi, as I
10:51 15 recall.

16 Q. Does Windows include pre-installed
17 generic drivers to use 802.11 hardware?

18 A. In 2006 or whatever the latest version of
19 Windows was that was then available in '06, I don't
10:52 20 recall. I do remember buying peripheral Wi-Fi cards
21 around that time that were the style that came in
22 the box with the CD-ROM that had things that needed
23 to be installed back around that time frame.

24 Q. But Windows XP in 2006 included
10:52 25 pre-installed generic drivers for USB devices.

1 Correct?

2 A. For -- as I recall from memory 20 years
3 ago or so, for certain functionality I think it may
4 have.

10:52 5 Q. And it was common for engineers to use
6 those pre-installed generic drivers to connect their
7 peripheral devices to PCs. Correct?

8 A. I would say it wasn't uncommon for people
9 to stick a USB flash drive or something into various
10:53 10 computers to move data around. I guess to the
11 extent that those were using a pre-installed generic
12 driver for a flash drive, that wasn't all that
13 uncommon.

14 Q. Let's look at Exhibit 1031 which is
10:56 15 Maeda. And I want to look at Page 9, Paragraph 78.
16 It says: The image and audio transition system of
17 the present invention can be applied to a system
18 that transmits image and audio.

19 Do you see that?

10:56 20 A. Yes.

21 Q. And it says: From an image generation
22 device such as a PC to an image projection device
23 such as a projector and is particularly suitable for
24 presentations using a wireless projector.

10:57 25 Correct?

1 A. That's correct.

2 Q. So essentially, Maeda teaches a system
3 for transmitting image and audio data from the PC to
4 a projector. Correct?

10:57 5 A. At a high level, that sounds right.

6 Q. And this transmission system, it says,
7 can be applied to a system that transmits image and
8 audio data. It says: The present -- let me
9 rephrase the question.

10:57 10 It says: The present invention can be
11 applied to a system that transmits image and --
12 images and audio.

13 My question is what does "can be applied"
14 mean?

10:58 15 A. (Pause.)

16 I think it's talking about the software
17 of Maeda can be applied to or installed by such a
18 system to transmit images and audio.

19 Q. And why do you say "can be applied or
10:59 20 installed"?

21 A. As Maeda -- as I talk about in my
22 declaration, Maeda requires the installation of a
23 software. So I think that's referring to Maeda
24 can be, just as it says, applied to a system.

10:59 25 Q. Where does Maeda say that it requires the

1 installation of software?

2 A. That's what I discuss in Section, looks
3 like, 6(b)(1). I'm going back through my
4 declaration.

10:59 5 (Pause.)

6 So in 116 of my declaration, I talk about
7 Maeda's -- the systems and methods around
8 transmitting images and audio, et cetera and the
9 functional components about four lines down and that
11:00 10 Maeda has that functional configuration for the
11 image transmission system and so because there's
12 this software being installed on the PC. And here,
13 I get into it would not be a zero-footprint
14 solution. And that also aligns with the language
11:00 15 you were asking about in 78 about applying --
16 applying this to a system.

17 Q. So you say in Paragraph 116: Maeda's
18 system is not zero-footprint because Maeda
19 implements functional components of software rather
11:00 20 than hardware.

21 Correct?

22 A. That's right.

23 Q. What are functional components?

24 A. (Pause.)

11:01 25 Q. Just to help you out, Paragraph 22 of

1 Maeda uses the word "functional components."

2 A. (Pause.)

3 Right. So that Paragraph 22 of Maeda
4 talks about the functional components and refers to
11:02 5 the Figure 3, which is I guess the term on Page 13
6 and it's showing on the PC block 100 these
7 components such as a screen-generation unit image
8 capture, audio capture, et cetera and these would be
9 the components of Maeda's software that are
11:02 10 installed on the PC for performing these flows of a
11 functionality that we see in Figure 3.

12 Q. So the PC communication unit 127 is
13 software?

14 A. Possibly, not necessarily. I don't know
11:03 15 if that's a mix of software and hardware depending
16 on what that interface might look like. But as I
17 say in -- I'm going back to my declaration.

18 (Pause.)

19 It sounds like Maeda is describing these
11:03 20 either a subset of them or perhaps all of them as
21 it's functional configuration made of functional
22 components that are applied to. So this would be
23 software installed in Maeda.

24 Q. I'm confused because you stated
11:04 25 previously that -- I asked the question: The PC

1 communication unit 137 is software.

2 You say: Possibly not. I don't know if
3 it's a mix of hardware or software.

4 And now you seem to be saying it must be
11:04 5 software. So is it a combination of hardware and
6 software or is it just software?

7 A. So Maeda describes its implementation as
8 being applied to that PC block of Figure 3 and those
9 components to me seem to be software.

11:04 10 The actual component -- I noted somewhat
11 of a slight difference on PC communication unit and
12 projector communication because they're
13 communicating directly with one another. I don't
14 know if Maeda might consider some sort of
11:04 15 transmitter transceiver hardware component as part
16 of that controlled by his software but that the
17 Figure 3 is showing us Maeda's software flow and
18 implementation.

19 Q. So the control unit, in your opinion, is
11:05 20 also software?

21 A. That sounds like what Maeda is describing
22 in his description of the functional components of
23 13 and that applied to this -- this PC that Maeda
24 mentions.

11:06 25 Q. Does the system of the '002 patent also

1 include functional components?

2 MR. HALVERSON: Objection; form.

3 A. I don't recall that the '002 uses that
4 phrase "functional components" itself. I mean, it
11:07 5 talks about software components and it talks
6 about -- it uses the word "components" elsewhere,
7 but I don't see that it uses that phrase.

8 Q. Is "functional component" a term of art?

9 A. It would probably depend on the context.

11:07 10 If someone were describing components that went into
11 a system or drawing a layout of the system and how
12 things connect and inter- -- interoperate similar to
13 the Figure 3 of Maeda, they might use that term.

14 Q. So we've talked about several references
11:08 15 today, Maeda, Ahmed, Kaplan, the '002 patent,
16 Deforche. I believe the only reference that uses
17 the term "functional components" is Ahmed.

18 Can you point to a functional component
19 of any of the other references?

11:08 20 MR. HALVERSON: Objection; form.

21 A. I think you meant to say functional
22 components.

23 Q. In Maeda. Yes. Sorry. Let me re-ask
24 the question.

11:08 25 Maeda uses the term "functional

1 components." If we look at, for example, Ahmed,
2 Figure 3 has an element 303 called a codec. Is a
3 codec a functional component?

11:09 4 MR. HALVERSON: Objection; form,
5 scope.

6 A. I'd have to go back and look through
7 these references as to, one, whether or not they use
8 that phrase. I don't, from memory, recall it being
9 in other references one way or the other and what a
11:09 10 reference shows, similarly perhaps the Figure 3 of
11 Maeda, that would constitute functional components.
12 I think a person doing a system design that involved
13 a codec or audio or video may consider, depending on
14 context, that to be a functional component.

11:10 15 Q. And the system of the '002 patent uses
16 codecs. Correct?

17 A. Yes.

18 Q. And therefore, depending on the context,
19 as you stated, the codecs of the '002 patent could
11:10 20 be considered functional components. Right?

21 A. I don't know. I haven't performed that
22 analysis of the '002's reference I think in, it
23 looks like, the sixth embodiment a mention of a
24 codec versus some other reference where a codec may
11:10 25 be more or less integral to the overall system being

1 designed or described.

2 Q. So I see here in your answer, just
3 shortly before, we were talking about Figure 3 of
4 Ahmed and you say perhaps Figure 3 of Maeda, that
11:11 5 would constitute functional components. You meant
6 to say Figure 3 of Ahmed. Correct?

7 A. One moment. I may have also gotten the
8 names reversed on you.

9 Q. No, I think maybe you -- you -- sorry. I
11:11 10 withdraw that question.

11 A. I -- I believe I was referring to the
12 Figure 3 of Ahmed in response to your question about
13 the codec block.

14 Q. Yeah, I think we were -- we were talking
11:11 15 both about Figure 3 of Ahmed and Maeda so it was a
16 bit confusing.

17 So you say you haven't performed the
18 analysis of whether the '002 patent's sixth
19 embodiment when it uses the term "codec," whether
11:12 20 that would constitute a functional component. Did I
21 understand that correctly?

22 A. That -- that sounds correct, that I --
23 whether or not this mention of a codec in this sixth
24 embodiment is or isn't a functional component as
11:13 25 we've been asking about. It's not something I've

1 looked at or I believe Dr. Almeroth talked about.

2 Q. How would we do that analysis?

3 MR. HALVERSON: Objection; form.

11:13 4 A. Your question was how would we do that
5 analysis?

6 Q. How would we determine whether the codec
7 mentioned in the '002 patent constitutes a
8 functional component?

11:13 9 A. It would seem to me at a somewhat generic
10 level if this passage in the '002 is talking about,
11 similar to Maeda, this block within the system, it's
12 comprised of these other functions that make up the
13 overall outer level block, then that codec in that
14 type of a figure may be considered a functional
11:14 15 component.

16 (Pause.)

17 I guess I'll follow on to that answer.
18 It somewhat depends on the level of abstraction I'm
19 talking about. If I go, stick with my Best Buy
11:15 20 example, to buy a laptop at Best Buy, they'd tell me
21 things like there's a CPU or DRAM or it runs Mac OS;
22 it plays Call of Duty or something like that. I
23 probably wouldn't necessarily see codec on the side
24 of the box even though it can run codecs.

11:15 25 Similar, the other end of the spectrum,

1 let's say I'm looking at a white paper on H.263
2 video codecs and it's got a block diagram showing
3 me, like, DCT transforms and all kinds of things
4 going on in there, I probably won't see codec as a
11:15 5 functional block because it's a different level of
6 attraction of the system.

7 Q. So Maeda uses -- has another functional
8 component called the image capture unit 123.
9 Correct?

11:15 10 A. Yes.

11 Q. And according to Paragraph 23 of Maeda,
12 it says: The image capture unit 123 essentially
13 captures the screen.

14 Correct?

11:16 15 A. That's correct.

16 Q. And the image capture unit is, we've
17 established, a functional component. Correct?

18 A. In that Figure 3, that -- that's my
19 recollection, yes.

11:16 20 Q. Okay. So what do you understand the
21 image capture unit to be?

22 MR. HALVERSON: Objection; form.

23 A. I haven't gone through the image capture
24 unit 123 of Maeda in detail, but it would be -- to
11:16 25 answer it, as we discussed earlier, it would be part

1 of this set of Maeda's software application that's
2 applied to the system.

3 Q. Does the -- does the image capture
4 unit 123 include screen scraping software?

11:17 5 A. I'm just searching through the
6 descriptions of the image capture unit.

7 (Pause.)

8 I'm not sure. I note that Maeda doesn't
9 use that phrase. And the -- so I'm not sure if that
11:18 10 would constitute a screen scraping or not.

11 Q. Doesn't screen scraping simply mean
12 capturing video and audio data from the PC?

13 MR. HALVERSON: Objection --
14 Objection; form.

11:18 15 A. I would say it generally means the idea
16 of capturing, in the case of video, the video that's
17 playing on, for example, the screen of my laptop.
18 Whether other information is in there or it's down
19 sampled or something or upsampled, I don't -- I
11:19 20 haven't performed that analysis.

21 Q. Screen scraping means reading video frame
22 buffers and -- and processing them. Right?

23 MR. HALVERSON: Objection; form.

24 A. I suppose that could be one definition.

11:20 25 Q. And Maeda discloses using video and audio

1 buffers. Correct? For example, in Paragraph 57.

2 A. (Pause.)

3 It looks like it's talking about buffers
4 here -- buffers in the terms of memory buffers -- in
11:20 5 relation to the audio portion of Maeda. The last
6 sentence: The delay between the video and audio can
7 be adjusted by adjusting the size of the audio
8 buffer.

9 Q. You haven't performed any analysis of
11:21 10 whether any reference besides the '002 Patent
11 discloses screen scraping. Correct?

12 A. That sounds correct in my declaration,
13 yes.

14 Q. Do you have any opinion on whether any of
11:21 15 the other references discloses screen scraping
16 besides the '002 Patent?

17 A. That's -- that's not something I -- in
18 the arguments of Dr. Almeroth's that I responded to,
19 I don't recall that being part of them or addressed
11:21 20 in my declaration.

21 Q. I'm not asking you whether it's in your
22 declaration, I'm asking you whether your opinion is
23 whether any of the other references besides the
24 '002 Patent discloses screen scraping?

11:22 25 MR. HALVERSON: Objection; form,

1 argumentative. The witness is here to talk about
2 his declaration.

3 A. I haven't done that analysis for the
4 other -- for the other references you're talking
11:22 5 about.

6 MR. GREENLEAF: Well, we're not here
7 for him to parrot his declaration. We're here to
8 have his expert opinion in the context of his
9 declaration. And certainly asking questions beyond
11:22 10 the scope of his declaration, the -- the verbatim
11 words of his declaration.

12 Q. Can you give me an example of -- from
13 your practical experience of a screen scraping
14 software besides the '002 Patent?

11:23 15 A. I -- in terms of like marketability name,
16 I can't recall off the top of my head. But years
17 ago I built forms of software that took what you
18 were seeing on the screen of a PC and showing it on
19 another, I think it was LCD, display to say how well
11:23 20 it was rendering kind of thing with the intention of
21 being -- showing two video streams in two different
22 places. There are probably other tools that I've
23 used in the past where you can capture a, you know,
24 video stream playing on your computer either in an
11:23 25 application of a whole window and write it to a file

1 or something like that.

2 Q. Is Skype an example of a software that
3 implements screen scraping?

11:23 4 A. I don't know. I don't recall discussing
5 that in my declaration at all.

6 Q. Is Zoom an example of a software that
7 implements screen scraping?

8 MR. HALVERSON: Objection; form.

11:24 9 A. In the -- yeah, I don't recall discussing
10 in my declaration report the way that Zoom or the
11 code or implementation of it performs things.

12 Q. You're familiar with the Zoom
13 application. Correct?

14 A. That's right.

11:24 15 Q. And you have no opinion on as to whether
16 or not it implements a screen scraping algorithm.
17 Correct?

18 A. I don't recall addressing that, no.

19 Q. I'm asking you to address it now.

11:24 20 A. I would say --

21 MR. HALVERSON: Do you have something
22 that describes Zoom that you'd like him to analyze?

23 MR. GREENLEAF: His personal opinion
24 of Zoom. And keep please your objections in the
11:24 25 proper form for this proceeding.

1 A. So in a Zoom session, I can have a video
2 in a window on my computer, I can share a document
3 or maybe the desktop image of my computer over the
4 Zoom session. As to how Zoom goes about
11:25 5 implementing that, I'm not -- I don't think I've
6 looked at it in this -- certainly these -- these
7 IPRs or in, you know, even the other litigation
8 really in this matter.

9 Q. How would the person of ordinary skill in
11:25 10 the art determine whether a reference disclosed
11 screen scraping software?

12 MR. HALVERSON: Objection; form.

13 A. I guess we would go look at the
14 definition of screen scraping in the reference we're
11:25 15 talking about. In this case the '002 perhaps, and
16 then go look as to how some other software
17 application -- look at what it's doing and look at
18 how it's doing it.

19 Q. The -- the '002 patent says screen
11:25 20 scraping in our sense refers to reading the video
21 frame buffers and processing them rather than
22 rendering them on a display. So in your opinion to
23 determine whether a reference discloses "screen
24 scraping," and either one, has to use the term
11:26 25 screen scraping or two, disclose reading the frame

1 buffers and processing them. Correct?

2 A. I would say to the extent it uses the
3 phrase "screen scraping," we would need to see that
4 it's using it consistently with the way the '002 is
11:26 5 using it. And then it would sound to me like what
6 the description of the '002 has that you just read
7 in relation to screen scraping would be one thing to
8 go look for, to see if some other application was
9 doing the same thing.

11:26 10 Q. And so Maeda discloses capturing image
11 data and video data. Sorry. Let me rephrase the
12 question.

13 Maeda discloses capturing image and audio
14 data. Correct?

11:27 15 A. Yes.

16 Q. And you have no opinion as to whether
17 that constitutes screen scraping. Correct?

18 A. I would say in the context of what the
19 '002 is talking about, I don't know how Maeda
11:27 20 describes or does not describe going about that
21 process. Just as I'm going to call in for the '002,
22 just as it says, quote, "screen scraping," unquote,
23 in our sense refers to dot-dot-dot.

24 So another reference that may use similar
11:27 25 language may not accomplish it in the same manner.

1 Q. Does Claim 1 of the '002 Patent require
2 screen scraping?

3 A. (Pause.)

4 So I see that Element B talks about
11:30 5 setting up the means for audio communication using
6 that first pre-installed generic driver. And then
7 continues on to say at 56 a means for data -- I'm
8 sorry at 55: A means for a second pre-installed
9 generic driver of the operation system, a means for
11:30 10 data communication between the peripheral and the
11 processing device.

12 And then D talks about routing of audio
13 and audio communication and routing of audio data at
14 65. And talks about that first pre-installed driver
11:31 15 that's associated with the audio and stops there.

16 Q. So Claim 1 of the '002 patent does not
17 require screen scraping. Correct?

18 A. I don't see that it mentions the screen
19 scraping or in the latter claim elements I was
11:31 20 pointing to mentions the second driver associated
21 with the data or perhaps video.

22 Q. Okay. So you don't see it mentions
23 screen scraping. My question is whether it requires
24 screen scraping?

11:32 25 MR. HALVERSON: Objection; form.

1 A. Yeah, I don't think I've interpreted -- I
2 haven't interpreted Claim 1 to -- in my declaration
3 to see if that's there. I note that by the time we
4 get to Claim 5 which depends to Claim 1. It is now
11:32 5 mentioning processing device obtains screen scrape
6 data. So perhaps Claim 1 isn't necessarily limited
7 to that.

8 Q. All right. Looking at Figure 3 of Maeda,
9 there's a PC communication unit and a projection --
11:34 10 projector communication unit. Do you see that?

11 A. (Pause.)
12 One moment.
13 Yes, I do.

14 Q. And you were opining out that connection
11:34 15 between the two earlier today. Do you recall that?

16 A. Yes.

17 Q. And that connection requires some form of
18 hardware. Correct?

19 A. I would -- I would say in the sense of if
11:34 20 there was a transceiver for moving data
21 bidirectionally over that wireless connection
22 between the two. But it looks like those
23 communication units are part of what Maeda talks
24 about the software being applied in his system.

11:34 25 Q. And applied in your opinion means

1 installed. Correct?

2 A. That's right, yes.

3 Q. Is there anything else in Maeda that

4 leads you to believe that Maeda can only be

11:35 5 implemented by installing software permanently on a
6 PC?

7 MR. GREENLEAF: Objection; form.

8 A. (Pause.)

9 I would say it's -- it's both. The

11:36 10 discussion we had earlier of Maeda's language in

11 those components being applied to and as I also

12 discussed in 117, that Maeda's not using language

13 within the reference stating those components of

14 Figure 3 are components that are applicable to sort

11:36 15 of a general -- a general purpose computer you would
16 buy off the shelf from a big box store kind of
17 thing.

18 Q. Do you have a dictionary that will --

19 that -- that defines the word "applied" as installed

11:37 20 permanently? Let me -- let me withdraw the
21 question.

22 Does the word "installation" to you mean

23 that software is permanently installed on a PC?

24 A. I believe it can in certain contexts.

11:38 25 For example, if I make wireless configuration

1 changes or something to assist in those changes, if
2 you're on the phone with the IT desk, for example,
3 would be applied to your system.

11:38

4 Q. But those security changes could be
5 changed. Right?

6 A. In that context, yes. If the -- if the
7 corporate Wi-Fi changes in your office or something,
8 they may change over time.

9 Q. All right.

11:39

10 MR. GREENLEAF: I think I'd like to
11 take a break.

12 (Break.)

13 Q. So, Dr. Brogioli, did you have a good
14 lunch?

12:51

15 A. I did.

16 Q. Did you talk about your testimony with
17 anybody during the break?

18 A. No, I did not.

12:51

19 Q. Okay. Earlier today we were talking
20 about Zoom. Do you recall that?

21 A. Yes.

22 Q. And I'm reading one of your answers here.
23 You said: So in a Zoom session I can have video and
24 a window on my computer, I can share a document or
25 maybe even a desktop image of my computer over the

12:51

1 Zoom session.

2 Do you recall that testimony?

3 A. Yes.

12:51

4 Q. So you can also share a document or maybe
5 your desktop image from your computer over a Teams
6 session. Correct?

7 A. That's my recollection, yes.

12:52

8 Q. And you can also share a document or
9 maybe a desktop image from your computer over a
10 Skype session. Correct?

11 A. As I remember, yes. I haven't used Skype
12 in some years.

12:52

13 Q. Okay. And that sharing of your document
14 or desktop image for either Zoom, Teams, or Skype
15 can happen in the context of a videoconference.
16 Correct?

17 A. That's correct.

12:52

18 Q. Okay. And I'd like to direct your
19 attention to Paragraphs 115 through 117 of your
20 declaration in this proceeding for the '002 patent.

21 A. Okay.

22 Q. And you've identified a few paragraphs
23 from Maeda, you know, in particular Paragraph 78,
24 talking about the applied-to-a-system issue.

12:52

25 Are there any other paragraphs in Maeda

1 that you can point to that lead you to believe that
2 Maeda requires installation of software on the PC?

3 A. (Pause.)

4 So I would point to that Paragraph 78.

12:53 5 And then also what I reference in my declaration,
6 Paragraph 116, that second-to-last line down is
7 citing to Maeda at 22, where they list various
8 components, such as the image capture unit,
9 et cetera, that are described here. And Maeda
12:54 10 doesn't make any mention that those are sort of
11 standard components of the -- of a PC at the time.

12 Q. Are there any other paragraphs in Maeda
13 besides 78 and 116 that you mentioned that support
14 your opinion that Maeda requires software
12:55 15 installation?

16 A. I would say just those -- those
17 paragraphs that we've been discussing that I cite
18 between my -- it looks like 116 and 117.

19 Q. Okay. And just to confirm, you don't
12:55 20 have any other paragraphs that you can identify
21 right now that support your opinion. Correct?

22 A. That's correct.

23 Q. Okay. Can you use the ClickShare dongle
24 to share a document or your desktop image from your
12:55 25 computer to a display?

1 A. As I recall, and I discuss in the last
2 section of my declaration, I used the dongle with
3 the base unit and display to share things like video
4 and probably other software applications over the
12:56 5 testing period.

6 Q. And I would also -- you can also use the
7 ClickShare dongle to share media data during a
8 videoconference. Correct?

9 A. I think that's the case. I don't recall
12:56 10 having explicit -- I don't recall being in an active
11 conference call and doing that, but I think that was
12 my understanding.

13 MR. GREENLEAF: Okay. All right. No
14 further questions on the '002 patent.

12:56 15 Is there any redirect?

16 MR. HALVERSON: There is not.

17 I want to ask a question about the
18 patent owner response, though. Do you want it to be
19 an exhibit? And if so, can we use the redacted
12:56 20 version of that?

21 MR. GREENLEAF: I don't want to use
22 it as an exhibit.

23 MR. HALVERSON: Then no questions
24 from me. We can close that one out.

25 (Deposition concluded at 12:57 p.m.)

1	CORRECTION PAGE			
2	WITNESS NAME: MICHAEL C. BROGIOLI, PH. D.			
3	DATE: 09/09/2025			
4	PAGE	LINE	CHANGE	REASON
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

1	CORRECTION PAGE			
2	WITNESS NAME: MICHAEL C. BROGIOLI, PH. D.			
3	DATE: 09/09/2025			
4	PAGE	LINE	CHANGE	REASON
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

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

SIGNATURE PAGE

I, MICHAEL C. BROGIOLI, PH.D., have read the
foregoing deposition and hereby affix my signature
that same is true and correct, except as noted on
the correction page.

MICHAEL C. BROGIOLI, PH.D.

1 UNITED STATES PATENT AND TRADEMARK OFFICE
 2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
 3
 4 YEALINK (USA) NETWORK)
 5 TECHNOLOGY CO., LTD.,)
 6 and YEALINK NETWORK)
 7 TECHNOLOGY CO., LTD.,) U. S. PATENT NO. 10,762,002
 8 Petitioners,) IPR2024-01436
 9 vs.)
 10 BARCO N. V.,)
 11 Patent Owner.)

12 REPORTER'S CERTIFICATION
 13 DEPOSITION OF MICHAEL C. BROGIOLI, PH.D.
 14 TAKEN SEPTEMBER 9, 2025

15 I, TAMARA CHAPMAN, Certified Shorthand Reporter in
 16 and for the State of Texas, hereby certify to the
 17 following:

18 That the witness, MICHAEL C. BROGIOLI, PH.D., was
 19 duly sworn by the officer and that the transcript of
 20 the oral deposition is a true record of the
 21 testimony given by the witness;

22 That the original deposition was delivered to
 23 KEVIN GREENLEAF;

24 That a copy of this certificate was served on all
 25 parties and/or the witness shown herein on

_____.

I further certify that pursuant to FRCP No.
 30(f)(i) that the signature of the deponent:

1 X was requested by the deponent or a party
2 before the completion of the deposition and that the
3 signature is to be returned within 30 days from date
4 of receipt of the transcript. If returned, the
5 attached Changes and Signature Page contains any
6 changes and the reasons therefor;

7 was not requested by the deponent or a party
8 before the completion of the deposition.

9 I further certify that I am neither counsel for,
10 related to, nor employed by any of the parties in
11 the action in which this proceeding was taken, and
12 further that I am not financially or otherwise
13 interested in the outcome of the action.

14 Certified to by me this 23rd day of September, 2025.

15

16

17

18

19



20

Tamara Chapman, CSR, RPR-CRR
CSR NO. 7248; Expiration Date: 12-31-25
GREGORYEDWARDS
106 E Sixth Street, Suite 900
Austin, Texas 78701
(512) 920-6040
www.gregoryedwards.com

21

22

23

24

25