

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. 11,258,676

IPR2024-01438

****TESTIMONY CONCERNING PATENT 11,258,676****

ORAL DEPOSITION OF
MICHAEL C. BROGIOLI, PH.D.
SEPTEMBER 10, 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 Wednesday,
September 10, 2025, from 8:26 a.m. to 12:45 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.

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E X H I B I T S

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PREVIOUSLY MARKED EXHIBITS

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

3 EXAMINATION

4 BY MR. GREENLEAF:

08:26 5 Q. Good morning, Dr. Brogioli.

6 A. Good morning.

7 Q. How are you?

8 A. Good.

08:26 9 Q. So today we're going to be talking about
10 IPR No. 2024-01438. Are you familiar with this
11 proceeding?

12 A. Yes. I believe it's the '676.

13 Q. Yes. U.S. Patent No. 11,258,676.

14 Do you have a copy of the '676 patent?

08:27 15 A. Give me one moment.

16 Q. Let me know when you have that up.

17 A. Okay.

08:27 18 Q. So if we look at Column 13 about Line 60,
19 it talks about screen scraping and what it refers
20 to.

21 A. Okay.

22 Q. And it says: Screen scraping for
23 presentations it's described in -- that's a typo,
24 but it's a U.S. application number to Slobodin.

08:28 25 Do you see that?

1 A. Yes.

2 Q. So screen scraping was known in the prior
3 art as of the filing date or the priority date of
4 the '676 patent. Correct?

08:28 5 A. That sounds correct, as they describe it
6 here, yes.

7 Q. Have you done an analysis of whether
8 Ono — Ono is Exhibit 1005, but I assume you have an
9 electronic version of it that you'd rather use?

08:28 10 A. I do, yes.

11 Q. Okay. But there are paper copies here.
12 Have you done an analysis of whether Ono
13 discloses screen scraping?

14 A. I don't recall talking about Ono and
08:29 15 screen scraping in my declaration for this
16 proceeding.

17 Q. You did have a section on Page 37 of your
18 report, said: Ground 1 fails to render obvious
19 client application stored on the peripheral device
08:29 20 to obtain screen scrape data.

21 On Page 37.

22 A. Okay. I see the section, yes.

23 Q. Okay. So, again, do you have an opinion,
24 or did you — let me rephrase the question.

08:30 25 Have you done an analysis of whether Ono

1 discloses screen scraping?

2 A. My recollection is, no, I've not. And
3 it's not -- I didn't have a discussion of Ono and
4 screen scraping particularly in my declaration.

08:31 5 Q. Okay. So if you look at Figure 1 of Ono,
6 it shows a -- Person A using their computer to
7 display an image of a car onto the projector -- you
8 know, the Display 5. Correct?

9 A. That looks like what the figure is
08:31 10 depicting, yes.

11 Q. Have you done an analysis of whether a
12 person of ordinary skill in the art could have
13 implemented Ono's solution using a zero-footprint
14 solution?

08:33 15 A. So it looks like in my declaration I
16 address aspects of Ono that talk about the software
17 solution that Ono explicitly describes the need to
18 be installed in its system.

19 I don't recall Dr. Almeroth providing a
08:33 20 zero-footprint alternative to that, that I discussed
21 in response to his arguments. So I -- I don't -- I
22 don't believe I offered an analysis of what Ono may
23 or may not look like for a zero-footprint software
24 solution.

08:34 25 Q. So in Paragraph 115 of your report, can

1 you go to that, please.

2 A. Okay.

3 Q. You quote Paragraph 8 of Ono. And kind
4 of in the middle of that quotation you say:

08:34 5 Selecting a desired information terminal apparatus
6 therefrom can be performed from the side of the
7 image display apparatus.

8 Do you see that?

9 A. Yes.

08:34 10 Q. And the image display apparatus, as
11 illustrated in Figure 1, is Element 1. Correct?
12 And you can see, for example, Ono Paragraph 36 says
13 that.

14 A. That looks right. The image display
08:35 15 apparatus 1 in Ono.

16 Q. And so this quote in Paragraph 115 is
17 referring to the side of the -- that Projector 60.
18 Correct?

19 A. It looks like the side of the image
08:36 20 projection apparatus is the sort of the left-most
21 facing block we see in that Box 60 of Ono.

22 Q. Kind of where the Element 40 is pointed
23 out?

24 A. Yes.

08:36 25 Q. So if you look at Paragraph 122 of your

1 report, it has a portion of that same quote from Ono
2 in Paragraph 8 of Ono. Do you see that?

3 A. I do, yes.

4 Q. So Claim 16 of the '676 patent includes
08:38 5 an input device. Correct?

6 A. That's correct. At least it starts to
7 mention it around Column 35, Line 18 or so.

8 Q. And the input device is an actuator
9 coupled to the peripheral device. Correct?

08:39 10 A. That's correct.

11 Q. And Ono discloses a peripheral device,
12 for example, Element 44A. Correct?

13 A. The -- in the sense that there's a block
14 that comes off of the side of what I believe is
08:39 15 Ono's Projector 60, not necessarily the peripheral
16 device of the claims of the '676.

17 Q. But the -- I'm just kind of referring to
18 peripheral device in the abstract. 44A is a
19 peripheral device because it plugs into the
08:39 20 computer. Correct?

21 A. And I was looking at the projector. The
22 44A is peripheral in the sense that it's peripheral
23 to the laptop that's shown in that Figure 1.

24 Q. So one of the issues is where the
08:40 25 selection of the source of the image information is

1 done because the input device in the '676 patent,
2 you know, Claim 16, for example, performs the
3 selection function. Correct?

08:40

4 A. I'm just revisiting this part of the
5 claim language.

6 So in the '676 it's this input device of
7 Claim 16 that allows the user to carry out a user
8 action that triggers the transfer of the said
9 user-selected arbitrary media content.

08:41

10 Q. And so it's in your opinion that Ono
11 discloses the selection at the projector as opposed
12 to at the user's PC. Correct?

08:41

13 A. I would say that in Ono the selection of
14 one of these, 44A, 44B, 44C in Figure 1, that
15 selection is made and the process starts based on
16 the side of the projector. But the triggering, as I
17 discuss in my declaration, isn't -- one, it isn't
18 present. And, two, the selection is happening at
19 the projector.

08:42

20 Q. And why isn't the trigger happening?

08:42

21 A. As I talk about in my declaration, there
22 is this multistep process of Ono that I believe it
23 gets into around Figures 9 or 10 or so as to the
24 process to ultimately display content from one of
25 those users in Figure 1 onto the -- through the

1 projector onto the display.

2 And there are a number of steps in there
3 where the process can be interrupted, terminated,
4 rejected, and so forth.

08:42 5 Q. So if the process for connecting a
6 computer to a display can be interrupted, that would
7 mean that there is no triggering of the information
8 from the computer to be displayed onto the display
9 of the -- let me rephrase the question.

08:43 10 What triggering does Claim 16 require?

11 A. That in this portion of Claim 16, as we
12 talked about earlier, there is the input device
13 being an actuator coupled to that peripheral device.
14 And then the user action is triggering the transfer
08:44 15 of that media content from the processing device to
16 the transmitter in the wireless network.

17 Q. Okay. And if that process can be
18 interrupted, that means that there's never any
19 triggering because it could potentially be
08:44 20 interrupted?

21 A. No, that's not quite what I'm saying.
22 I'll point us to the right portion of my
23 declaration.

24 So the initial, I think, question was in
08:44 25 regard to Ono. As I talk about -- I guess starting

08:45 1 in Paragraph 124, in the system of Ono it's the
2 control section on the projector side that sends a
3 request signal back to one of those terminal
4 apparatus we were talking about. And then that
5 selected device coming from the projector side can
6 either accept or request, the signal. So it's not a
7 triggering coming from the user and actuator, as is
8 discussed in Claim 16 of the '676.

08:45 9 And as I continue on in my Paragraph 125,
10 the second-to-last sentence: After this request,
11 there are several steps before the content is either
12 transferred or not transferred. The generation of a
13 request signal does not trigger a transfer of
14 content. The content may or may not be transferred.

08:46 15 Q. So the user actuating the input device
16 needs to 100 percent reliably cause the transfer of
17 media content from the computer to the display.
18 Otherwise it does not constitute triggering.

19 Is that your opinion?

08:46 20 MR. HALVERSON: Objection; form.

21 A. Yeah, I would say that the -- and just as
22 Claim 16 states in this limitation starting at
23 Column 35 at 18, that the user carries out a user
24 action with this input device that's the actuator,
08:47 25 and that triggers the transfer of that

1 user-selected, in this case, arbitrary media
2 content.

08:47 3 Q. All right. So if we look at Figure 9 of
4 Ono, the user presses a button on the projector
5 which causes a connection request S1. Correct?

6 A. That looks correct.

08:48 7 Q. And then the PC in this example receives
8 that request S2; sends a standby message, S3; and
9 then agrees to -- well, there's the connection
10 request, confirmation process, S5; the connection
11 request confirmation okay, S6; and then there's a
12 connection response, S7; a connection process, S8;
13 and an image transfer.

08:48 14 And so the connection request S1
15 ultimately results in the image transfer. Correct?

16 MR. HALVERSON: Objection; form.

08:49 17 A. I would say it is the -- in the context
18 of this Figure 9 of Ono, it is the -- it looks like
19 the completion of an S8 connection process
20 resulting -- causing that image transfer, which is
21 some -- depending on how we're counting -- seven or
22 eight -- well, multiple decision processes or logic
23 processes after the start of the button press on the
24 projector side of Ono that happens up in the S1
08:49 25 state or transition.

1 Q. So let's talk about the connection
2 process for the '676 patent. There's no similar
3 flowchart describing the connection process in the
4 '676 patent. Correct?

08:50 5 A. Not that I recall seeing and not that I'm
6 seeing flipping back through now.

7 Q. All right. So I want to get into the
8 weeds here, so to speak, of the -- what happens when
9 a user presses the button that's illustrated in
08:50 10 Figure 10 of the '676 patent, which essentially is
11 the dongle. So when the user presses a button, what
12 happens? What would a person of ordinary skill in
13 the art understand to happen when the button is
14 pressed?

08:50 15 MR. HALVERSON: Objection; form.

16 A. So one example would be, as we were
17 talking about in Claim 16 a moment ago, where we
18 have the user action or hitting the button that
19 triggers this transfer -- that's around, again, in
08:51 20 Column 35, around Lines 18 to 20. And then the --
21 that input that's HID is an actuator that's coupled
22 to that physical -- peripheral device and that base
23 unit we've talked about. Sorry, it's coupled to the
24 peripheral device and the base unit is -- as it
08:52 25 says, adapted display that user selected media

08:52 1 content on the first display, and then it mentions
2 there's a set of rules which gets into the forcing
3 content so the button press triggers -- if we were
4 to go back to my testing content, the video of the
5 woman playing piano. In here use of the forcing
6 rule to display that on the display at the base
7 unit.

8 Q. Okay. When the user presses the button
9 and closes a switch in the dongle. Correct?

08:52 10 A. I'm seeing if the patent uses that
11 specific language. It's an actuator which would
12 cause, generally speaking, some physical motion to
13 create an electrical output that's used in this
14 scenario. I don't know if the patent calls it a
08:53 15 switch or not. As I recall, it uses the phrase
16 "actuator."

17 Q. A person of ordinary skill in the art
18 would have understood the actuator to include a
19 switch that opens and closes. Correct?

08:53 20 A. Not necessarily. I mean, I wouldn't -- a
21 person of skill wouldn't necessarily see the
22 actuator of this peripheral device to be the same as
23 a switch that would be maybe a -- either set to open
24 or set to close or, you know, maybe something like a
08:54 25 multi-input switch where you can select one of

1 Path 0, 1, 2, or 3 to go to the output.

2 Q. So Column 30 talks about a multi-position
3 switch at Line 33. Do you see that?

4 A. Yes, I do.

08:55 5 Q. So the '676 patent does indeed talk about
6 the actuator being a switch. Correct?

7 A. So it looks like you're -- it's talking
8 about a special variant of this peripheral device,
9 and so it seems to me it's got this maybe a circular
08:55 10 rotating dial that could go from 0 to 10 and here
11 it's being used for -- what looks like is being
12 described as the peripheral device to select maybe
13 one of those ten base units to be in communication.

14 Q. So in the simpler embodiment where it's
08:56 15 just a button, you press it and it magically causes
16 media content to appear on the display without any
17 intervening steps?

18 MR. HALVERSON: Objection; form.

19 A. Well, what the patent describes is in
08:56 20 this scenario the user hits the button which is the
21 actuator and that the one base -- the singular base
22 note in this scenario, that actuator press triggers
23 the display of the content.

24 Q. How?

08:56 25 A. I mean, there are a number of ways. The

1 actuator press is something recognized by, for
2 example, software that says to send the content.

3 Q. Okay, let's break this down. How does
4 that recommendation occur?

08:57 5 MR. HALVERSON: Objection; form.

6 A. I don't recall if the '676 talks about
7 the mechanism that that's done by, but one way would
8 be the actuator press causes some kind of interrupt
9 that the software might recognize. Another way is
08:57 10 the software might be polling to see when the
11 actuator is pressed or if it's pressed or if there's
12 a pulse read or something like that, the press could
13 have a message be sent up to the application to
14 recognize, something like that.

08:57 15 Q. How would the actuator press cause an
16 interrupt?

17 A. You could set up your system to have some
18 kind of hardware or software interrupt that your
19 application or the system would recognize.

08:58 20 Q. From a physical electronic level, how
21 would the interrupt be recorded in the hardware?

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

24 THE STENOGRAPHER: Scope?

08:58 25 MR. HALVERSON: Scope.

1 A. In a -- in a general sense an interrupt
2 happens, a CPU stops, on a -- we're just talking
3 about a -- somewhat of a general purpose computer.
4 If the CPU were running Microsoft Word it pauses, it
08:59 5 goes and looks at -- at certain points in time it
6 would look at a register or what we call a vector to
7 see bits of what caused the interrupt, was it a
8 keyboard tab or was it something else, and then
9 would take action. It's gotten more complicated
08:59 10 over the years, but depending on the type of system
11 they're talking about.

12 Q. All right. So one way of implementing
13 the button in the hardware and software described in
14 the '676 patent is that the button would cause an
09:00 15 interrupt and the CPU would detect the interrupt and
16 then run an interrupt service routine. Correct?

17 A. Well, what I was initially answering was
18 there are a number of ways that a person of skill
19 would understand how to use an actuator in a system
09:00 20 like this. If we're specifically asking about how
21 interrupts might work, that's a -- sort of a general
22 example of how interrupts can work in a system.

23 Q. And in this case what would the interrupt
24 service routine do in response to detecting the
09:00 25 interrupt generated in response to the user

1 actuating the button?

2 A. In this somewhat generic example it might
3 say this interrupt happens, have software execution
4 go here and core transfer of said user selected
09:01 5 arbitrary media content through the transmitter of
6 said port.

7 Also this is -- we're sort of very
8 specific on this interrupt scenario. There's ways
9 to do it that don't require interrupts and things
09:01 10 like that, a person of skill would understand.

11 Q. For example, the Barco system could use
12 polling instead of interrupts. Correct?

13 A. I think that's fair in the sense that it
14 could look for the actuator bit to go from low to
09:02 15 high or something like that by running a loop and
16 monitor it and on the transition, effectively
17 logical yes or no, does the steps that the patent
18 describes or the step of this transfer of said
19 user-selected arbitrary media content.

09:02 20 Q. And that polling P-O-L-L-I-N-G. Right?

21 A. That's right.

22 Q. And how would the transfer of said
23 user-selected arbitrary media content occur from a
24 technical standpoint?

09:03 25 A. It's just as the claims talk about, if we

09:04 1 go to Claim 1 where it talks about Section D of
2 routing screen scrape data between the processing
3 device and the wireless communications network. In
4 this case you would take the screen scrape data and
5 send it through this pathway by the USB connection
6 out through the peripheral.

7 Q. And how would the base unit know to
8 receive the screen scrape data from the peripheral
9 device?

09:05 10 A. I haven't done a technical analysis of
11 how Barco implements the hardware and software
12 inside that base unit. In my testing section I show
13 how the system behaved in accordance with what we're
14 talking about. Similarly I would think there are a
09:05 15 number of ways the base unit could go -- or a person
16 of skill in the art could understand to implement
17 the base unit to achieve that.

18 Q. Could there be some sort of handshake
19 between the peripheral device and the base unit to
09:05 20 establish the connection?

21 MR. HALVERSON: Objection; form.

22 A. I don't see that anyone has talked about
23 that in this proceeding. I don't recall
24 Dr. Almeroth saying that. Or things such as in my
09:06 25 testing that there was a multistep handshake process

1 being shown on either the display or the -- the
2 processing device. That sounds like you're asking
3 more about an infringement analysis.

09:06 4 Q. I'm just trying to understand the
5 connection process because you've criticized Ono's
6 connection process and the connection process of the
7 '676 patent is essentially omitted, at least to the
8 level of detail that Ono provides and so I'm trying
9 to understand how a person of ordinary skill in the
09:06 10 art would have understood the connection process to
11 occur given that it's not detailed in the
12 '676 patent. So my question is, are there standard
13 handshake protocols in 802.11?

14 MR. HALVERSON: Objection; form.

09:07 15 A. I would say we'd have to go to the 802.11
16 specification of a certain time period and there are
17 probably aspects of that protocol that have a
18 back-and-forth handshake. I don't recall from
19 memory. The aspects of how the protocol might or
09:07 20 might not do a handshake aren't, at least as I've
21 talked about in my declaration, what the claims here
22 are talking about. The claims are talking about the
23 Barco or a Barco system, for example, not the
24 internals of a IEEE802.11 standard.

09:07 25 Q. The Barco systems uses the 802.11

1 standard, doesn't it?

2 A. As I recall there's a couple -- I think a
3 couple of different variants of it that are
4 supported in the Barco literature.

09:07 5 Q. And when you say, a couple of different
6 variants of it, you're talking about a couple
7 different variants of 802.11. Correct?

8 A. Yes. Different -- what's the word I'm
9 looking for?

09:08 10 Q. I think A, B, C --

11 A. Iterations of the standard over time.

12 Q. And if the base unit were to block the
13 connection from the peripheral device in some
14 situations, then that would not cause the claimed
09:09 15 triggering. Correct?

16 MR. HALVERSON: Objection; form.

17 A. Maybe you can be more specific about what
18 you mean by "block."

19 Q. Let's look at Claim 16 and the input
09:09 20 device limitation of the '676 patent. So the user
21 presses the input device and the peripheral device,
22 for example, would attempt to transfer the selected
23 arbitrary media content to the base unit, but the
24 base unit would block the arbitrary media content
09:10 25 from being displayed on the first display and that

1 would not meet the claim limitation of Claim 16 of
2 the '676 patent. Correct?

3 MR. HALVERSON: Objection; form.

09:10 4 A. It sort of -- starting at that Line 18 it
5 says: The input device to allow the user to carry
6 out a user action that triggers...

7 If you're asking about a scenario that's
8 "an input device to allow the user to carry out a
9 user action that does not trigger" that sounds like
09:11 10 something that's different than what the claim is
11 talking about.

12 Q. Well, let's say, for example -- well, let
13 me ask a different question. Does the Barco base
14 unit allow for multiple peripheral devices to
09:11 15 connect at once?

16 A. My recollection is there can be multiple
17 of these devices connected.

18 Q. Is there a limit to the number of devices
19 that can be connected to the base unit at a -- one
09:11 20 time?

21 A. I don't remember.

22 Q. Let's assume that there is a limit
23 because it seems like there needs to be some kind of
24 limit, it can't be infinite. And so let's say the
09:12 25 limit is two. And so, you know, two of us here are

09:12 1 displaying the screen on the display and the third
2 tries to but is blocked. So if two of us were
3 successful and the third was not, would that system
4 infringe Claim 16 of the '676 patent because
5 sometimes it's able to connect -- the peripheral
6 device is able to connect and sometimes it's not?

7 MR. HALVERSON: Objection; form.

09:12 8 A. So it sounds like in your scenario the
9 limit of two peripheral devices connecting to the
10 base station simultaneously, we have two users
11 connected to the base node via their peripherals. A
12 third person shows up with their laptop you would
13 use the word "blocked. It sounds to me like in that
14 scenario the third person never even has an initial
09:13 15 connection to the -- the base node. So I don't know
16 that they would, in this scenario, necessarily start
17 practicing the claims because they've sort of never
18 even -- it sounds like in that scenario, that user
19 with their laptop and their peripheral device is
09:13 20 never connected to -- to the system to do anything
21 meaningful.

09:14 22 Q. So in -- in that scenario, the third user
23 presses their input device which triggers some sort
24 of routine to attempt to do this transfer. What
25 would happen in that scenario?

1 MR. HALVERSON: Objection; form.

2 A. It sounds like in this scenario, the
3 third user is conceptually on a deserted island with
4 no connectivity whatsoever. So I'm not sure what
09:14 5 their local machine -- it sounds like it wouldn't
6 have even connected to the base node to begin with.

7 Q. Well, the dongle, when you plug it to
8 your machine, does it automatically connect to the
9 base unit?

09:14 10 MR. HALVERSON: Objection; form.

11 A. Maybe we need to go back to my section at
12 the bottom of my declaration that talks about the
13 process that I went through in plugging in the
14 dongle with my user machine or my user laptop.

09:15 15 MR. GREENLEAF: All right. We can go
16 off the record.

17 (Break.)

18 Q. All right. So, Dr. Brogioli, before we
19 went on break you were looking at your declaration
09:28 20 to see whether you had any information about what
21 happens when you connect a dongle to your PC. Did
22 you find any information about that, what happens
23 when you plug the dongle into a PC?

24 A. Can you refresh me on the full question?

09:28 25 Q. Well, I'm -- we were talking about the

1 connection process between the dongle and the base
2 unit. When the dongle is unplugged, it's
3 essentially dead, it has no power, it's not doing
4 anything. Right?

09:28 5 A. That's right.

6 Q. Okay. And when -- I'm referring to the
7 dongle here, I'm talking about the Barco dongle as
8 described in the '676 patent. And you understand
9 that. Correct?

09:28 10 A. Understood.

11 Q. All right. So when you plug the dongle
12 in to a PC, what happens when it powers on?

13 MR. HALVERSON: Objection; form.

14 A. Understood.

09:30 15 (Pause.)

16 So as I talk about in my declaration,
17 when -- when the Barco dongle is inserted --

18 Q. Sir, would you please identify the
19 paragraph for me?

09:31 20 A. Start at, I guess, 163. So the dongle
21 would power up, we would see the circle light up, as
22 I recall you would be prompted, as we see further
23 down, about running the -- you would see this on
24 Page 67, the display pops up if you want to run the
09:31 25 ClickShare for Windows. The -- what I don't recall,

1 maybe it's in my declaration but going from memory,
2 is whether or not the connecting of the dongle to
3 the base unit happens via, like a button press on
4 the UI of the Barco application or perhaps if it had
09:32 5 been run -- maybe they automatically paired. I
6 don't recall -- I'm trying to see if it's in here as
7 to whether the dongle automatically connected to the
8 base unit as part of its process regardless of
9 whether any content was being shared.

09:32 10 Q. So in the scenario we were talking about
11 earlier where there was a max two displays on the --
12 let's just call it the projector, and the third
13 dongle is -- there's three dongles in the system.
14 So if you have -- does Barco system allow for three
09:32 15 dongles to be plugged into three laptops despite the
16 fact that the base unit only allows two to be
17 displayed at a particular time?

18 MR. HALVERSON: Objection; form.

19 A. I'd have to go back to the Barco
09:33 20 documentation. I don't know if that's something
21 they contemplated. A scenario where the Barco
22 system supports two dongles, People 3, 4, 5, and 6
23 plug a dongle in to their computer or a million
24 people plugged dongles in that aren't -- those --
09:33 25 those dongles seem like they wouldn't connect to the

1 system to begin with.

2 Q. Why wouldn't they connect to the system?

3 A. Well, in your example, I believe you said
4 the maximum it was two for dongles to connect to the
09:33 5 base unit.

6 Q. Well, the -- to be clear, the
7 hypothetical is that only two can be displayed. I
8 was not placing a limit on the number that could be
9 connected to the base unit. Presumably there would
09:34 10 also be a limit to that number. But hypothetically
11 it would make sense to have some larger number of
12 dongles to be in use plugged into laptops but only a
13 subset of those could be displayed at a particular
14 time. Does that sound like a reasonable use case?

09:34 15 MR. HALVERSON: Objection; form.

16 A. I don't know if it's reasonable or not.
17 That wasn't the use case that I investigated in --
18 in the Barco system.

19 Q. Okay. So -- but you understand the
09:34 20 hypothetical that let's say you have three dongles
21 plugged in to three laptops but only two can display
22 at a particular time, that hypothetical makes sense
23 to you. Correct?

24 A. I would say it makes sense to me in the
09:35 25 sense that I understand the concept you're

1 describing.

2 Q. All right. And -- so you don't know
3 whether the Barco dongle is connected to the base
4 unit when plugged in or when the user actuates the
09:35 5 button. Correct?

6 A. That's not exactly what I was saying. I
7 don't remember if the dongle automatically connects
8 to the base unit on power up from the laptop or if
9 via the user interface of the application. I had to
09:35 10 click a button for it -- the dongle to connect to
11 the base unit.

12 Q. Okay. I'm looking at these -- these
13 pictures you have in your declaration and the
14 picture on Page 63 shows a white ring. Do you see
09:36 15 that?

16 A. Yes.

17 Q. Okay. And then the picture on the --
18 Page 92 shows a red ring. Is that correct?

19 A. That's correct.

09:36 20 Q. Okay. It's my understanding that the
21 white ring means it's not connected and the red
22 ring -- ring -- well --

23 Okay. So -- well, okay. So what's your
24 understanding of the difference between the white
09:36 25 and the red ring?

1 A. The white is when it's plugged in but I'm
2 not -- there's no content being shared. And when I
3 press the button, the video we saw on the laptop
4 displays on the display with the base node and the
09:36 5 ring would turn red, as I recall.

6 Q. All right. It's my understanding, and
7 let me know whether it's yours too, that when you
8 plug the dongle in it will flash white until it
9 pairs itself with a base unit?

09:37 10 A. I think that sounds in line with what I
11 said. And then solid white is it's connected but
12 perhaps it's connected but not sharing content.

13 Q. Yes. So in this scenario that we're
14 talking about where you have three dongles, they
09:37 15 each connect to the base unit, but say none of them
16 are attempting to share anything. So each of them
17 would be solid white because they're connected to
18 the base unit but not sharing anything. Does that
19 make sense to you?

09:37 20 A. I understand what you're describing, yes.

21 Q. Okay. And then two of the users decide
22 to share their content and then their dongles turn
23 red. Does that make sense?

24 A. Yes.

09:37 25 Q. All right. And the third dongle is still

1 white because it's connected but not sharing. Does
2 that make sense?

3 A. Yes.

09:38 4 Q. Okay. And then the user presses the
5 button on the third dongle to attempt to transfer
6 media content to the display but is blocked by the
7 base unit because it's reached it's maximum allowed
8 sharing. Does that make sense?

09:38 9 A. Not particularly because I don't recall
10 this being a scenario that investigating an upper
11 limit on this in the scenarios that I ran with the
12 Barco product in this section of my report. It
13 sounds like that may be something related to the
14 forced sharing functionality. But I don't recall
09:39 15 testing a scenario where if there was this max
16 number of sharing occurring simultaneously, the
17 behavior of the system when a new person requests to
18 share at that limit.

19 Q. All right.

09:39 20 MR. GREENLEAF: Let's go on a quick
21 break.

22 (Break.)

23 Q. Dr. Brogioli, I've sent Mr. Halverson a
24 link which he forwarded to you to allow you to
09:48 25 download the document I believe titled CSE-800 user

1 guide from the Barco website. Were you able to
2 obtain the document from the Barco website?

3 A. Yes, for the copy that Mr. Halverson sent
4 me.

09:49 5 MR. HALVERSON: And, Counsel, are we
6 going to mark this and will it be submitted?

7 MR. GREENLEAF: Yes. Let's mark this
8 as Exhibit 1069.

9 MR. HALVERSON: And do you want me to
09:49 10 get a copy of it printed for today or would you like
11 to email it to the court reporter or not submit it
12 with the transcript but have use of it later with
13 paper. I don't have a preference.

14 MR. GREENLEAF: I'm happy to just --
09:49 15 we'll work it out -- work it out offline. But
16 certainly we'll be submitting it with the
17 petitioner's reply.

18 (Exhibit 1069 was marked.)

19 Q. All right, Dr. Brogioli, you received the
09:49 20 PDF from Mr. Halverson, not the link to download the
21 PDF. Is that correct?

22 A. That's correct.

23 Q. Okay. Have you had a chance to skim this
24 document at all?

09:50 25 A. I don't -- I don't think so yet, no.

1 Q. Okay. Would you do that now, please?

2 And just going to --

3 A. Okay.

4 Q. All right. So Page 30 of the PDF

09:50 5 illustrates components of the CSE-800 set which

6 includes a base unit labeled 1 there and a dongle

7 labeled 2. Do you see that?

8 A. Yes, I do.

9 Q. Okay. All right. Let's turn to Page 43,

09:52 10 please. And there's an advanced use section. Do

11 you see that?

12 A. Yes. Section 3.4.

13 Q. And it says: Depending on the display

14 mode, ClickShare can show the content of up to four

09:52 15 sources, clone mode, or up to eight sources, extend

16 mode.

17 Correct?

18 A. I see that, yes.

19 Q. And then the last, I guess, the

09:52 20 penultimate sentence it says: This means that by

21 clicking their button, clicking the virtual button

22 in the ClickShare app, four or eight persons in the

23 meeting can display their screen simultaneously.

24 Do you see that?

09:53 25 A. Yes.

1 Q. And then there's images kind of
2 consistent with the various possible number of
3 people sharing screens. Do you see those images,
4 316?

09:53 5 A. I do.

6 Q. All right. And then at the bottom, the
7 bottom penultimate paragraph says: When the display
8 mode is set to extend, if you are the ninth user,
9 you are blocked.

09:53 10 Do you see that?

11 A. I do.

12 Q. "A message appears on your screen,
13 telling you the maximum number of users is reached.
14 You have to wait until other -- one other -- the
09:54 15 other users removes his content or you display your
16 content full screen, removing all others."

17 Do you see that?

18 A. I do.

19 Q. So this is describing a situation similar
09:54 20 to the one we were discussing before, where you have
21 a maximum number of participants. And here the
22 maximum number is either four or eight.

23 Do you see that?

24 MR. HALVERSON: Objection; form.

09:54 25 A. There is a scenario where there's a -- a

1 four-user scenario here on a single display and an
2 eight-user scenario, I guess, on what's called the
3 dual display or the extended mode.

09:55 4 Q. And that if an additional user, either
5 the fifth or the ninth, wants to share their
6 display, they are blocked, according to this
7 document. Correct?

8 MR. HALVERSON: Objection; form.

09:55 9 A. It sounds like in this scenario, in the
10 dual display in extended mode, either -- it sounds
11 like me as the ninth user can opt to display in full
12 screen mode, which then shares my content on the
13 screen, removing the others.

09:55 14 But as part of this process it sounds
15 like there is some notification sent to this ninth
16 user.

17 Q. So when the ninth user presses their
18 button, they receive a message saying that the
19 maximum number of users is reached.

09:56 20 Is that your understanding?

21 A. That seems to be what this last paragraph
22 on Page 43 is saying.

09:56 23 Q. So that would mean that that dongle did
24 not meet the limitations of Claim 16 of the
25 '676 patent. Correct?

1 MR. HALVERSON: Objection; form.

2 A. It sounds like in this particular
3 scenario the ninth user -- let me take a second to
4 review the page.

09:57 5 I'm just skimming down to the next couple
6 pages.

7 Q. Take your time.

8 A. (Pause.)

9 So I just was skimming down through the
09:57 10 rest of this section. It sounds -- what the
11 document is saying is -- and I'll stick with the
12 dual display in extended mode, just for simplicity,
13 I guess.

14 There are eight users sharing their
09:57 15 display. I'm the ninth -- potentially the ninth. I
16 hit the button. As the language, a message shows
17 up on the screen of my laptop saying max users are
18 reached.

19 It says I can either wait for one user to
09:58 20 stop sharing. So one of the 1 through No. 8. I can
21 share a full screen. And if I skip down to the
22 bottom of Page 44, the subtitle, to show your
23 content on the display full screen, I would just
24 hold the button for two seconds and my content would
09:58 25 be shared.

1 Q. But if you press it once, presumably
2 shorter than two seconds, then you would be blocked.

3 Correct?

09:58

4 A. It sounds like there would be a display
5 on my screen saying -- I don't know if it verbatim
6 says "blocked," but that's the word that's used in
7 this reference doc or this user guide.

09:59

8 Q. And so when you press the button as the
9 ninth user, that dongle would not meet the
10 limitations of Claim 16 of the '676 patent.

11 Correct?

12 MR. HALVERSON: Objection; form.

09:59

13 A. I don't know necessarily. It sounds like
14 in this scenario the media content from User No. 9's
15 laptop would not be shared on these two displays of
16 the extended mode.

17 Q. And therefore that dongle would not meet
18 the limitations of Claim 16 of the '676 patent.

19 Correct?

09:59

20 MR. HALVERSON: Objection; form.

10:00

21 A. Well, again, I haven't offered an opinion
22 on this infringement scenario in my declaration or
23 the -- as I recall, the rest of this behavior,
24 hands-on myself -- but it looks like the reference
25 is saying the -- in this ninth user scenario of

1 pressing the button for less than two seconds, the
2 transfer of our user-selected arbitrary media
3 content would not happen.

10:00 4 Q. So when pressing the button, it does not
5 trigger transfer of content. The content may or may
6 not be transferred, depending on the number of users
7 already displaying content. Correct?

8 MR. HALVERSON: Objection; form.

9 A. Can I hear it one more time?

10:00 10 Q. So when the user presses the button, that
11 does not trigger the transfer of content because
12 they are the ninth user. Correct?

13 A. I don't have an opinion on that in my
14 declaration as to how that scenario operates.

10:01 15 Q. But pressing the button may or may not
16 result in transferring of content, depending on the
17 number of users already sharing content. Correct?

18 MR. HALVERSON: Same objection.

19 A. I don't know in this scenario.

10:01 20 Q. But if pressing the button may or may not
21 result in the transferring of content, then the
22 button on the peripheral device would not meet the
23 limitations of Claim 16 of the '676 patent.

24 Correct?

10:01 25 MR. HALVERSON: Objection; form,

1 asked and answered.

2 A. I would say in this scenario ultimately
3 being this ninth user in the extended mode scenario
4 and hitting the button for less than two seconds, at
10:02 5 the end of the day it sounds like the user guide is
6 stating that my, me, the ninth user's media content
7 doesn't show up on the display.

8 But as to whether the system is still
9 meeting this limitation of Claim 16 that starts at
10:02 10 18, that wasn't part of my analysis in this
11 declaration.

12 Q. I'm looking at page -- sorry --
13 Paragraph 125 of your declaration. And you're
14 talking about how it's important that when there's a
10:02 15 transfer request in Ono, the content may or may not
16 be transferred.

17 That's one of your points in your
18 declaration. Correct?

19 A. As is explicitly disclosed in Ono's flow
10:02 20 charts.

21 Q. So sometimes content is transferred and
22 sometimes it's not --

23 A. Well, that's --

24 Q. -- in Ono. Correct?

10:03 25 A. -- that's the end result, but in terms of

1 how the lack of triggering works in Ono is the point
2 that I'm addressing here.

3 Q. But Ono may transfer content in response
4 to pressing the button. Correct?

10:03 5 A. In the sense of after -- the control
6 section of Ono may issue its request for the
7 transfer of content, and there are a multitude of
8 intermediary decision steps that can or cannot allow
9 for the ultimate downstream result of content being
10:04 10 displayed. There's not a triggering here in Ono as
11 there is disclosed in the patent.

12 Q. Well, let's look back at the scenario in
13 the CSE-800 document. And let's say you're the
14 ninth user. Let's stick with that embodiment. And
10:04 15 you press the button.

16 Can you tell me from a technical
17 standpoint the process that would occur after
18 pressing the button, kind of referring back to our
19 earlier discussion of the interrupts and the
10:04 20 pulling?

21 So the question, again, is what is the
22 process that occurs when the ninth user presses
23 their button on their peripheral device?

24 MR. HALVERSON: Objection; form,
10:05 25 scope.

1 A. I don't see that this -- this section of
2 the user guide discusses what's happening from a
3 system implementation standpoint.

10:05 4 Q. But the person of ordinary skill in the
5 art would understand how to implement the system,
6 giving -- given this level of description. Correct?

7 MR. HALVERSON: Objection; form.

10:05 8 A. I would say that this paragraph at the
9 bottom of 43 is describing a user-facing behavior of
10 the system under this specific use case. There are
11 a number of ways I think a person of skill could
12 understand to implement that. I don't see that the
13 document describes that one way or the other.

10:06 14 Q. Can you give me one example of a way the
15 person of ordinary skill in the art would understand
16 to implement the process described on Pages 43 and
17 44 of this document?

10:06 18 A. I mean, one example would be to have the
19 base node make a software-based decision that it's
20 at this eighth user-shared limit in extended mode,
21 but perhaps still received the content and then let
22 the ninth user, with their respective peripheral,
23 receive a message saying, hey, I'm the base node and
24 I'm at my eight-plus-one limit in this scenario.

10:07 25 Q. All right. Let's look at Figure 9 of Ono

1 again. And as I recall, you testified something
2 about multiple decision points in Figure 9.

3 Did I understand that correctly?

4 A. That, I think, may have been the word I
10:07 5 used, yes.

6 Q. All right. So we have the connection
7 request, which essentially is some sort of user
8 input, such as a button press. And that's S1.

9 Correct?

10:07 10 A. Coming from that projector, yes.

11 Q. All right. So can you identify all the
12 decision points here, please.

13 A. (Pause.)

14 I'm just going back to the language in
10:07 15 Figure 9 for reference.

16 (Pause.)

17 I guess I'll try and get us through this
18 quickly. But I'll start at Paragraph 83 of Ono.

19 And so the Projector 60 submits this connection
10:09 20 request that's S1 that is sent to the -- at the
21 bottom of Paragraph 83.

22 The appropriate information in terminal
23 apparatus 2A. And we continue to 84. We're now
24 talking about the Apparatus 2A. Receive the
10:09 25 connection request signal -- I'm skipping down about

1 halfway through -- the CPU 20 creates the connection
2 standby signal that we see there in this S3 state
3 going back to the projector side.

10:10 4 Continuing to Ono Paragraph 85, the CPU
5 of the projector interprets the connection standby
6 signal received and enters the connection wait
7 state, S4.

10:10 8 And now we go to Paragraph 86. We're
9 back to the information terminal apparatus 2A. It
10 does a connection request confirmation process at
11 the CPU and determines -- emphasis there -- whether
12 or not the currently -- whether or not it's
13 currently possible to connect with the projector.
14 So that may or may not happen.

10:10 15 And we continue on to 87. If the CPU
16 determines that the connection is possible, the fact
17 that the above-mentioned connection request should
18 be accepted is decided as connection request
19 confirmation okay in Step S6. So we follow that
10:11 20 down lower in Figure 9.

10:11 21 And then -- I'm still in Paragraph 87.
22 Based on the decision of the connection request
23 confirmation okay, generates a connection response
24 signal, which is an acceptance response. And then
10:11 25 hands that over and we get to, I guess, the third

1 line down, the wireless connection module transmits
2 the above-mentioned connection response signal to
3 the wireless connection module. That's in S7.

4 And then I guess I'll continue on to the
10:12 5 very end. The Projector 60 are connected -- sorry.
6 The terminal apparatus 2A and the Projector 60 are
7 connected. Once the CPU 20 of the information in
8 terminal apparatus 2A executes a connection process
9 in Step 8. And then as a result, CPU 20 of the
10:12 10 selected information in terminal apparatus 2A
11 transmits the image information.

12 So we can see there's a lot of states, a
13 lot of back and forth. And there's also
14 decision-making happening in these blocks that may
10:12 15 either ultimately result in the image transfer or
16 may deny the process from happening, which starts
17 from the projector side of the block 60 in the top
18 left.

19 Q. All right. So you put emphasis on the
10:13 20 word "determines" in Paragraph 87 as, I think, an
21 example of the decision point as you called it. Is
22 that right?

23 A. That sounds right that there's a decision
24 being made there that I talk about in my
10:13 25 declaration.

1 Q. What other decision points are in this
2 process?

3 A. Going back to my declaration quick.
4 (Pause.)

10:15 5 I'm just skimming back through 117 and
6 118 in my declaration. So those are primarily the
7 ones I talk about, if we look at Paragraph 118 in my
8 declaration. At least those were for Figure 9. I
9 further discuss in Figure 10 what Ono lists in
10:16 10 Paragraphs 94, 95 that in 94 the CPU 20 in Step S5
11 determines whether or not a connection with the
12 projector is currently possible. And then in
13 Paragraph 95 it states: If from this determination
14 step in S5, the CPU 20 determines that the
10:16 15 connection is not possible, the fact that the
16 above-mentioned connection request should be
17 rejected is decided et cetera.

18 And it goes on to Step 6.

19 So there is decisions being made here as
10:16 20 to whether connection should or should not happen
21 and in some cases rejecting them.

22 Q. So you've mentioned Figure 10, and
23 Figure 10 lists the same steps, S1 through S5.
24 Correct? Is that -- let me re-ask the question.
10:17 25 Both Figures 9 and 10 identify the same steps, S1

1 through S5. Correct?

2 A. That looks to be correct in terms of how
3 they're labeled anyhow.

4 Q. And then Steps S6 and S7 appear as S6
10:17 5 prime and S7 prime in Figure 10. Correct?

6 A. Those are in Figure 10, yes.

7 Q. There's no prime indicator on -- in
8 Steps 6 and 7 in Figure 9. Correct?

9 A. That's how the figures's drawn, that's
10:17 10 correct.

11 Q. So the decision point that you're
12 referring to is Step 5 where the connection request
13 confirmation process is performed in the CPU.
14 Correct?

10:18 15 A. (Pause.)

16 That's what I refer to in Paragraph 94 in
17 Ono and in 95 in Ono. It may also be in 47. Give
18 me one second. It looks like 47 is just talking
19 about the acceptance response signal.

10:19 20 Q. 47 you said?

21 A. Yeah, I didn't know if it also mentioned
22 the S5 step as well, but it doesn't seem to
23 explicitly mention that.

24 Q. I'm sorry, are you referring to
10:19 25 Paragraph 47 of Ono?

1 A. Ono.

2 Q. You talking about 87 or 47?

3 A. 47 in my Paragraph 118 I discuss Ono, and
4 you asked about Step S5 which is discussed in my
10:19 5 fourth line down I point to Ono 94 and 95. And I
6 was also seeing if Step S5 was mentioned in that
7 Paragraph 47 in my Line 4.

8 Q. Okay. But all of these paragraphs you've
9 identified are just different discussions related to
10:20 10 Step S5 in Figures 9 and 10. Correct?

11 A. I would say the paragraphs that I talk
12 about in I guess 117, 18, of my declaration are
13 talking about that decision process, at least of
14 that block Step -- I'm sorry -- that Step S5 and
10:20 15 some of the paragraphs talk about Step S6 prime and
16 S7 prime.

17 Q. I'm just trying to figure out where all
18 of the decision steps are. And so far I'm only
19 seeing one in Step S5 where there's connection
10:20 20 request confirmation process. Is there another step
21 where there's a decision made?

22 A. (Pause.)

23 I think that decision process that I've
24 been referring to largely focuses around this
10:22 25 Step S5 and the determination whether or not the

1 connection with projector 60 is currently possible.

2 Q. Can you identify another step where
3 there's a decision made in Figures 9 or 10?

4 A. (Pause.)

10:23 5 It looks like between these two figures
6 that's in the respective figures where the decision
7 process starts.

8 Q. All right. So back to the CSE-800
9 document, are there any decisions made when the
10:23 10 ninth user attempts to connect to the display?

11 MR. HALVERSON: Objection; form.

12 A. I don't see that this document is talking
13 about decisions that may be made by the system or
14 algorithmically.

10:24 15 Q. For example, a determination of whether
16 there are currently eight displays on the screen and
17 if there are then you block the ninth? That would
18 be a decision. Correct?

19 MR. HALVERSON: Objection; form.

10:24 20 A. I would say in the -- potentially in the
21 sense of are we at eight squares showing on the
22 screen and this one is the ninth, as to what the
23 system is doing underneath the hood, for lack of a
24 better term, the document isn't saying.

10:24 25 Q. There must be some sort of if statement

1 or comparison to assess whether there are eight
2 squares on the screen. Correct?

10:24 3 A. I would think that's -- that's probably
4 correct. Something is noticing that this is No. 9
5 which is greater than 8.

6 Q. Let's look at Paragraph 122 of your
7 report. You say in the second sentence that Ono
8 designs and provides a system that selects a desired
9 information terminal apparatus where the selection
10:26 10 can be performed from the side of the image display
11 apparatus?

12 MR. HALVERSON: You said 22?

13 MR. GREENLEAF: 122, sorry.

14 Q. Just the second sentence there.

10:26 15 A. Okay.

16 Q. So just, you know, just confirm what I
17 said was accurate for Paragraph 122.

18 A. I'll just read it back. "Ono designs and
19 provides a system and selects a desired information
10:27 20 terminal apparatus where the selection can be
21 performed, quote, from the side of the image display
22 apparatus, end quote.

23 Q. And that's referring to the -- the
24 connection request S1 in, for example, Figure 9.
10:27 25 Correct?

1 A. That would be correct, yes.

2 Q. You say "can be performed from the side."
3 Why did you use the word "can" instead of "must"?

4 A. I think maybe "must" or "is" would have
10:28 5 been a better choice of word. Maybe this was a
6 legacy something referencing to Dr. Almeroth's
7 proposed combination or something.

8 Q. Could the selection be performed from the
9 top of the image display apparatus?

10:28 10 A. I'm not sure what Ono says regarding that
11 one way or the other. I know that it talks about
12 the side of the image display apparatus.

13 Q. So you understand that an obviousness
14 determination is not limited to the exact
10:28 15 embodiments in a disclosure. Correct?

16 MR. HALVERSON: Objection; form.

17 A. (Pause.)

18 I'm just going back to my obviousness
19 section.

10:30 20 That -- I guess it sounds like generally
21 right. I don't see that I -- that I have language
22 in my obviousness section saying that these things
23 must be exact or identical.

24 Q. So the person of ordinary skill in the
10:30 25 art would have found it obvious to move the button

1 in Ono to other locations such as the top of the
2 projector as opposed to the side of the projector.
3 Correct?

4 MR. HALVERSON: Objection; form.

10:30 5 A. I don't know. I haven't performed an
6 analysis of Ono as to what things a person of skill
7 looking at Ono would deem obvious or not obvious.

8 Q. Well how hard is it to move a button in a
9 box from the side to the top?

10:31 10 MR. HALVERSON: Objection; form.

11 A. I would say it depends on the context of
12 what box is or does, how it's designed or described.

13 Q. If a box is a projector, couldn't you
14 just simply make a hole in the top and move the
10:31 15 button from the side to the top?

16 A. Possibly, I haven't gone through Ono to
17 see why that may or may not be the case.

18 Q. It might be too difficult to put a hole
19 on the top of the projector to move the button from
10:31 20 the side to the top?

21 MR. HALVERSON: Objection;
22 argumentative.

23 A. There might be scenarios in the projector
24 design where that would be the case.

10:31 25 Q. Might there be scenarios in projector

1 design where that would not be the case, that it
2 would be too difficult?

3 A. Depending on the context, I think both
4 scenarios might be true.

10:32 5 MR. GREENLEAF: Okay. Let's take a
6 five-minute break.

7 (Break.)

8 Q. Dr. Brogioli, you have a copy of Grimshaw
9 Exhibit 1008. Correct?

10:45 10 A. Yes.

11 Q. Have you reviewed this document?

12 A. That's correct.

13 THE STENOGRAPHER: Did you say
14 Birdshaw?

10:32 15 MR. GREENLEAF: Grimshaw.

16 Q. What are elements 344, 354, 374 and 364?

17 A. Grimshaw talks about these, I guess, on
18 the right column, Page 2, that they are -- what'd he
19 call them -- engaging buttons. I'll just read the
10:46 20 sentence "which causes switch controller 318 to pass
21 data signals."

22 Q. And in Paragraph 29 talks about user
23 modules, 14, 16, 18, and 20 which correlate to each
24 of those buttons that we just discussed. Right?

10:47 25 A. That looks right. It says there's

1 respective indicators on those user modules, 14, 16,
2 18, and 20.

10:48 3 Q. And users can connect their laptops to
4 those user modules. Correct? For example, in
5 Paragraph 35 it talks about external devices
6 connected to the user modules?

7 A. Checks to see which if any external
8 devices are connected to that user module.

10:48 9 Q. And then in Paragraph 35 it says: For
10 example, if a laptop computer is connected to a USB
11 port on user module 14.

12 Do you see that discussion there?

13 A. I see it mentions the laptop being
14 connected to a USB port on a user module.

10:48 15 Q. All right. So those user modules are
16 peripheral devices. Correct?

17 A. I would say in the sense of something
18 that's peripheral -- peripheral to the user's laptop
19 in the case of Grimshaw.

10:49 20 Q. In pressing those buttons, for example,
21 just focus on one of these user modules, say 344.
22 344 is a button of user module 14. Correct?

23 A. That sounds right, yes.

10:50 24 Q. And then there's an indicator light 346
25 on user module 14. Correct?

1 A. I see that.

2 Q. And when the user presses the button 344
3 and they're connected to the user module 14, they
4 can share their screen to display 22. Correct?

10:50 5 A. In the sense that the content of their
6 screen will be shown on that, I believe it's the
7 monitor or the display panel 22 in Figure 1.

8 Q. And does Grimshaw disclose screen
9 scraping technology?

10:51 10 A. I don't recall Grimshaw mentioning screen
11 scraping or my discussion of Grimshaw screen
12 scraping in my declaration.

13 Q. And how is screen scraping different from
14 Grimshaw's disclosure of sharing their screen?

10:52 15 A. Just doing a quick search for sharing in
16 Grimshaw, and I really only see it mentioned second
17 column, maybe ten lines down, the internal page
18 number 5, talking about sharing of presentations. I
19 don't -- I don't recall doing an analysis of
10:52 20 Grimshaw and what it discusses or doesn't discuss in
21 terms of the way that a users's screen content or
22 presentation content is -- is collected or
23 transferred --

24 (Reporter clarification.)

10:52 25 THE WITNESS: Transferred to the

1 display, I guess.

2 Q. Is one of the ways that Grimshaw allows a
3 user's screen content to be transferred or
4 displayed -- let me rephrase the question.

10:53 5 Is screen scraping one of the ways that
6 Grimshaw could allow the transfer display of screen
7 content from a PC to a monitor?

8 A. I -- I don't know. I haven't looked
9 at -- or I don't recall discussing or looking at
10:54 10 Grimshaw to analyze whether or not it could support
11 some type of screen scraping or perhaps something
12 along those lines that the patents talk about.

13 Q. I'd like to direct your attention to
14 Paragraph 19 of Grimshaw.

10:55 15 A. Okay.

16 Q. So it says in the second sentence: For
17 example, consider the case where separate laptop
18 computers are connected to user modules 14 to 20 and
19 are vying for control of the display module 22, that
10:55 20 is each of the connected computers is outputting
21 data signals through connections 342, 352, 362, 372
22 for presentation on display module 22. The display
23 module 22 may not simultaneously display the
24 information from all four computers/user modules.
10:55 25 Thus the users of modules 14, 16, 18, 20 can take

1 control of display module 22 by respectively
2 engaging buttons 344, 354, 364, 374 which causes
3 switch controller 18 to pass the data signals from
4 the selected user modules on the display module.

10:56 5 So you testified about this vying for
6 control as -- let's just go to your declaration.
7 You talk about the vying for control, for example,
8 in Paragraph 146. But I don't really understand why
9 you're focusing on this language and I'd like to
10:57 10 understand that better.

11 MR. HALVERSON: Objection; form.

12 A. I'll read the paragraph.

13 (Pause.)

14 So it looks like in this paragraph, I'm
10:58 15 talking not necessarily about Grimshaw. But I think
16 I'm referring back to the Uchida reference. But the
17 context being in Uchida the -- the remote is -- is
18 driving which user, singular, is -- is potentially
19 showing their screen content within the system
10:58 20 rather than a scenario of multiple users in that
21 Uchida system vying for control to access the
22 projector, as I recall.

23 Q. All right. Let's look at Paragraph 61
24 where you're talking about Grimshaw. And then
10:59 25 Paragraph 127 where you also mention the vying for

1 control language in the context of the Ono
2 combination. So in Paragraph 127 I just want to
3 understand why you find this language important?

11:00

4 A. Was there a question or are you waiting
5 on me?

6 Q. Well, for example, in Paragraph 121 of
7 your declaration, you testify -- I'll let you go to
8 there.

9 A. Okay.

11:00

10 Q. Dr. Almeroth doesn't explain how the
11 projector of the combined system would navigate
12 multiple, competing, or conflicting commands from
13 different communication modules. So I'm wondering
14 whether this vying language would be one example of
15 how to handle multiple competing or conflicting
16 commands from different communication modules?

11:01

17 A. Well, Ono is talking about this
18 one-to-one system where we don't have -- it's
19 actually trying to prevent multiple users or prior
20 users in time from being able to display content and
21 also has this -- the -- I'm trying to look for the
22 language of it.

11:01

23 So I guess to go to 1.2 of my
24 declaration, Ono is talking about a system that
25 selects a particular terminal apparatus and this is

11:02

1 performed from the side of the image display
2 apparatus.

3 Grimshaw is a -- is a separate or
4 different topology where there are multiple users or
11:02 5 multiple laptops connected in Grimshaw. And that's
6 sort of the vying for control to put their content
7 on the display. Ono is a different topology where
8 there isn't this vying across multiple user devices
9 from the user's end to display their content.

11:03 10 Q. Well, one way to look at Ono is the
11 topology is very similar because you have three
12 computers and in Ono's Figure 1 and you have, you
13 know, multiple computers in Figure 1 of Grimshaw.
14 But the difference is that the -- as you mentioned
11:03 15 that the button in Ono is on the projector and the
16 buttons in Grimshaw are on the user module.
17 Correct?

18 A. No. I would say there are similar
19 components such as laptops and the display between
11:03 20 Ono and Grimshaw. But Ono is selecting via its menu
21 and control section which of these laptops to allow
22 to display via this different nontriggering
23 mechanism we talked about before. So -- it's sort
24 of selected and controlled from -- you know, both
11:04 25 physically and logically from the projector side.

1 Grimshaw is the case of the system of multiple users
2 controlling from the user side this vying for
3 control and who of the users is displaying at a
4 given point in time. Where there's a switch in
11:04 5 Grimshaw that's configuring which of the user's, you
6 know, video streams goes through at that point in
7 time and which doesn't. Controlled by the users.

8 Q. But there are multiple switches. Right?
9 In Grimshaw? You talking about a one-to-many switch
11:05 10 or many-to-one switch?

11 A. The switch I talk about -- I'll find the
12 place in my declaration for you. An example is in
13 Paragraph 127 of my declaration which is Grimshaw's
14 switch controller 318, which is getting the audio,
11:05 15 video, and data from all of the user modules and
16 being controlled by the user-side selections.

17 Q. You would agree that Grimshaw discloses
18 allowing each of the users to decide whether their
19 device should be used to display content to the
11:08 20 display 22. Correct?

21 A. In the sense that the user can, as I
22 recall, hit the button on Grimshaw's user module to
23 show their content. Someone else may hit the button
24 after that to control the switch controller 318.

11:08 25 Q. Okay. And what happens based on Grimshaw

1 when another user presses their button?

2 A. As I recall, it tells the -- if User 1 is
3 actively displaying and User 2 hits their button, as
4 I recall it tells the switch controller 318 just to
11:09 5 pass through the user to the audio video data
6 signals.

7 Q. Let's talk about Uchida Exhibit 1009. Do
8 you have Uchida, Dr. Brogioli?

9 A. I do.

11:10 10 Q. Now, you called Uchida a centralized
11 system, I believe. For example, in Paragraph 145:
12 The control of the operation of the image projection
13 device is centralized with the remote control
14 device.

11:11 15 Do you see that?

16 A. I do.

17 Q. What do you mean by that?

18 A. That the remote control that is included
19 in Uchida is being used to control the -- just as it
11:11 20 says, this image projection device. And there is
21 a -- there is this notion of wireless setting
22 information that allows for a user device to connect
23 to the -- Uchida's language of the -- effectively to
24 display through the image projection device.

11:12 25 I'll just continue down a bit into 146,

1 where once Uchida's system starts up, there's also,
2 again, on the remote that's controlled by a singular
3 person or singular remote, there's also
4 functionality to -- I think it's called the "stop
11:12 5 display button." But it -- but it allows -- it
6 instructs the -- the system to just display a black
7 screen instead of whatever the user's -- the screen
8 sharing information might be.

9 Q. You say in the next paragraph, 146, that
11:13 10 you mentioned: Here there are no issues that
11 involve multiple users vying for control.

12 And you cite Dr. Almeroth's declaration.
13 I'm not really quite sure why. But what do you mean
14 by there's no issues that involve multiple users
11:14 15 vying for control. Is your point that there's only
16 one laptop in Figure 2 of Ono?

17 MR. HALVERSON: Objection; form.

18 A. No. It's -- it's -- I get to this in
19 Paragraph 147, where I talk about the intent of --
11:14 20 I'm on the second line down.

21 The intent of Uchida, one example is this
22 conference environment where multiple people may be
23 presenting over -- over time. And Uchida's intent
24 is to avoid that inadvertent data transition. As
11:14 25 I -- as I get to in the third line down: Uchida

1 states that, quote, even if an image projection
2 device is used for a conference such as a
3 presentation and computer devices of an unspecified
4 number of participants are used, it is possible to
11:15 5 prevent image data from being mistakenly sent from a
6 computer device that had previously used the image
7 projection device and then sent from the image
8 projection device.

9 And so there's this notion of either
11:15 10 directly this one-to-one relationship of displaying
11 or the notion of using the -- the -- the button
12 that -- that Uchida talks about which instructs as
13 I'll call the projector to show a black screen
14 instead of any content that may be showing up.

11:15 15 Q. Okay. So the -- the startup control
16 function is what you're referring to as part of the
17 centralized topology of Uchida?

18 A. The -- so to that -- to that question in
19 146, I talked about the scenario in Uchida
11:16 20 describing multiple computer devices to transmit
21 image data to the image projection device. And that
22 it would require the same wireless settings to the
23 multiple wireless devices prior to connection. And
24 then there's still no issue of the multiple users
11:16 25 vying for control here, because as Uchida described

1 in 145 -- I'm sorry -- Paragraph 45, which I'll give
2 to you in a moment, that startup control button can
3 be used to start and stop the image projection.

11:17 4 And so if I go to 145 in Uchida. About
5 the fourth line down of that -- one moment.

6 I'm reading the paragraph between
7 Bracket 0045 and 0046, so halfway down on the fourth
8 line: The startup control button 2 through 1 is a
9 button for issuing start and stop instructions to
11:17 10 the image projection device.

11 And that's, I believe, what I'm referring
12 to there.

13 I also discuss in places -- I forget if
14 the labels are above or below the paragraphs. But
11:18 15 the paragraph between 71 and 72 talking about the
16 image transfer stop switch 140 and it being a slide
17 switch that serves as the image transmission stop
18 that instructs the projection device to stop. And
19 if you read down to the last line or so it talks
11:18 20 about instructing the image projection device to
21 just display that black screen.

22 Q. Let's look at Paragraph 145 of Uchida.

23 A. Okay.

24 Q. In 147 of your declaration, it refers to
11:20 25 this Paragraph 145. It says: The centralization of

1 control with the remote control explained in
2 Paragraph 145 corresponds with Uchida's intent to
3 avoid inadvertent data transmission.

11:20 4 Now, that Paragraph 145, you're referring
5 to your Paragraph 145 or Uchida 145?

6 A. Okay. Give me one moment.

7 (Pause.)

8 So it looks like in my Paragraph 147 when
9 I state -- explained in Paragraph 145 that's
11:22 10 intended to refer back to my Paragraph 145. And
11 then the next sentence or two -- I believe it's one
12 sentence that has the quote is now referring back to
13 Uchida's -- Uchida's Paragraph 31.

14 Q. Okay. So let's look at Uchida 31. And
11:22 15 this is talking about the startup control button
16 preventing image data from being mistakenly sent
17 from a computer device that has previously used the
18 image projection device. Correct?

19 A. It was a long question, but what this
11:22 20 paragraph is talking about is the start/stop control
21 instructions and the notion of prior users in time
22 having access to shared content, and then preventing
23 that from happening, using what's described in
24 Paragraph 31.

11:23 25 Q. Yeah. I apologize for my long questions.

1 I'm just trying to -- it's complicated and I'm
2 trying to get a mutual understanding.

3 The startup control instruction unit, I'm
4 reading it as the same as startup control
11:23 5 button 231. Do you have a different interpretation
6 of Uchida?

7 Let me phrase the question a bit
8 differently. The startup control instruction, I
9 think, is a function of pressing the startup control
11:24 10 button 231 on the remote control.

11 A. That sounds right, with the startup
12 control button 231 part of the remote device to
13 itself.

14 Q. Okay. So the startup control instruction
11:24 15 essentially corresponds to pressing the startup
16 control button.

17 All right. So the question, I'm trying
18 to understand what this startup control function is.

19 It's my understanding that it's basically
11:24 20 a reset of the system, so that users who were
21 already sort of programmed -- well, let me rephrase
22 it.

23 Let's start out with this process in
24 Figure 2. Make sure we understand this setup
11:24 25 process.

1 Do you have Figure 2 of Uchida? And, you
2 know, I'm kind of finding it helpful to have these
3 figures open. So I'll open it for you.

4 MR. HALVERSON: All right, Kevin,
11:25 5 before we dive in, can we take a quick break?

6 MR. GREENLEAF: Yeah.

7 (Break.)

8 Q. Dr. Brogioli, let's talk about Figure 2
9 of Uchida. Do you have that in front of you?

12:06 10 A. I do.

11 Q. All right. And it has three steps, A, B,
12 C. Can you walk me through your understanding of
13 these three steps, please.

14 A. (Pause.)

12:07 15 Kind of walk us through Uchida. So this
16 is the overall components of the system. Uchida --
17 and it looks like it's described as setting up the
18 procedure for setting up wireless communication. So
19 we've got the USB connectors -- I'll start from the
12:07 20 top, that Figure 2A. The USB connector is 105.

21 And it is -- so then there's the USB
22 connector 201 that we also see here that's on the
23 remote. And so those two can be -- let's see what
24 the language Uchida uses is -- where it's dealing
12:08 25 with the wireless setting information required for

1 communication with the wireless unit of the image
2 projection device.

3 And then let's see. We have the computer
4 device over here. I guess it's 4. It's showing the
12:08 5 USB connector there labeled 401. And then 310 is --
6 the Image Projection Device 3 has the infrared light
7 receiving unit 310 on it. And so that -- as we move
8 down to Figure 2C, we've still got the laptop 4, the
9 remote 2. There is the projector 3 with the
12:09 10 infrared unit 310 that's in communication with the
11 block 1 here we see in Figure 2C that's also shown
12 in that 2A with the antenna on it.

13 Q. All right. So at the end this wireless
14 device 1 can allow the laptop to communicate
12:10 15 directly with the image projection device 3.

16 Correct?

17 A. That's correct. The laptop 4 and its
18 wireless device 1 can communicate with that antenna
19 you see on the projector 3.

12:10 20 Q. Okay. And then this process can be
21 repeated for multiple wireless devices. Correct?

22 A. That's right. Uchida talks about having
23 multiple of these laptop 4 and wireless device 1s
24 present.

12:10 25 Q. Okay. And the reason for -- in Step B

1 that -- well, I guess A and B -- to connect the
2 wireless device 1 to the remote control 2 is to
3 program the wireless device 1 to be able to
4 communicate with the projection device 3. Correct?

12:11 5 A. That's -- that's correct.

6 Q. Okay. And this startup control button on
7 the remote control will reset all of the
8 configuration information so that the wireless
9 device 1 can no longer communicate with the
12:11 10 projection device 3. Is that your understanding?

11 And I think it relates to Paragraph 147
12 of your report.

13 A. So, yeah, in 145 I talk about the startup
14 control button used for the start/stop instruction
12:12 15 on that -- what's our image projector 3. And then I
16 carry on to 47, where during that process the -- the
17 wireless configuration information can be rewritten.

18 Q. The wireless control information that's
19 rewritten, is that -- which information and which
12:12 20 memory is rewritten?

21 A. So 146 I talk about the ability for the
22 remote 2 to write the information, I believe, into
23 the -- the block 1 that we see there. And there can
24 be multiple of those. And -- continue for a second.

12:14 25 (Pause.)

1 So it looks like in Uchida, I guess
2 around Claim 6, it talks about where the -- as you
3 were asking, the remote control has a startup
4 control instruction unit for issuing a startup
12:14 5 instruction or stop instruction for that projection
6 device 3. And the means for updating the wireless
7 setting information when that startup control
8 instruction is operated.

9 Q. I think Figure 13 is helpful. Do you
12:15 10 want to see that?

11 A. Give me one second.

12 (Pause.)

13 Right. So Figure 13 here walks us
14 through a similar process. So when we detect the
12:15 15 startup control button in S310 and it's a yes, we
16 send the shutdown command to the image projection
17 device in S131. S132 updates the wireless setting
18 information, and then we'd been cycling S133 until
19 there is another USB device connected, at which
12:15 20 point 134 gets the ID of the USB device. S135
21 checks that it's predetermined.

22 Q. What does that mean?

23 A. I think -- I can look, but I think that's
24 one of the -- Uchida talks about not allowing
12:16 25 unregistered wireless devices in the system. So I

1 think that block is doing a check to see if it's a
2 known -- I think the block 1 in our Figure 3
3 earlier.

12:16 4 And then if that's yes, we -- S136 will
5 write the wireless information or setting
6 information to wireless device. S137, we wait for
7 the startup control button again. Once that's hit,
8 we send a startup command to the image projection
9 device in S138, and send wireless setting
12:16 10 information to the image projection device in 139.

11 Q. And you said, I think, 310 at the
12 beginning. I think you meant S130?

13 A. I'm sorry. Yes, S130.

14 Q. All right. If we look at Paragraph 116
12:17 15 of Uchida, it talks about S132, which is update the
16 wireless setting information. It says: CPU 210
17 performs an update process of the wireless setting
18 information stored in the secondary storage
19 device 211.

12:17 20 And I believe that is part of the remote
21 control as illustrated in Figure 9.

22 A. One moment. You're in Paragraph 113 of
23 Uchida?

24 Q. 116. Sorry.

12:18 25 A. Go ahead.

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

2 A. Go ahead.

3 Q. All right. So I'm trying to understand
4 this inadvertent, you know, display of information,
12:18 5 function of Uchida. And I think Figure 13 is
6 related to that. But I'm having trouble
7 understanding exactly how Uchida implements that.

8 So we went through the initialization
9 process in Figure 2. And let's say the presentation
12:18 10 has ended and somebody has their wireless device
11 plugged in to their laptop still, and a new
12 presentation is beginning.

13 How is that person who was at the
14 previous presentation, how does the system prevent
12:19 15 the inadvertent transfer of stream data?

16 A. In the -- I'm in Figure 13 of Uchida.
17 When the startup control -- let me back up.

18 So there is a presentation session in
19 this conference environment, there has been sharing
12:19 20 of content. We're moving now, let's say, to the
21 next presentation session. The startup button of
22 Uchida is hit, the projection device is shut down by
23 the shutdown command, and the wireless setting
24 information gets updated.

12:19 25 Q. In the controller?

1 A. Yes. Now, when the controller sees a new
2 USB device in 133, 134, and 135, assuming it's a
3 permitted USB device, it updates the wireless
4 settings just for that device. And then the next
12:20 5 time the startup control button is hit in our
6 scenario for Presentation 2, the startup command
7 goes to the image projection device. And once the
8 image projection device is powered up in 139, its
9 wireless information gets updated, which would match
12:20 10 the USB device now, and the other USB devices that
11 had been — with wireless setting information in
12 those USB devices would now be out-of-date from the
13 first presentation.

14 Q. Okay. So you have to press the startup
12:21 15 control button twice. The first time shuts down the
16 projector and the second time starts the projector
17 back up and sends the new wireless setting
18 information. Correct?

19 A. That's part of what's going on here, yes.

12:21 20 Q. All right. So let's talk about the
21 transfer stop switch, 140. And you talked earlier
22 about how switching that to "on" will cause, for
23 example, a black screen to go to the projector.

24 Correct?

12:22 25 A. Yes. That activation of the switch sends

1 a -- it tells the projector to display this black
2 screen.

3 Q. And then what happens when it gets turned
4 to "off"?

12:22 5 A. I discuss this in Paragraph 67. When
6 that switch or the toggle is turned -- when the
7 toggle is turned back to "off," the image data
8 coming from the wireless device is projected again.
9 So it switches from sending the stream that it had
12:23 10 been sending to when the switch goes on. It sends a
11 black image, the switch goes off, it resumes sending
12 the screen.

13 Q. All right. So I'd like to look at
14 Deforche now. We had a copy yesterday.

12:25 15 And Limitation B of Claim 1 of the
16 '676 patent, it recites setting up by means of the
17 pre-installed generic driver of the operating system
18 the means for communication between the peripheral
19 device and the processing device.

12:25 20 And I think we've established that
21 Deforche discloses using pre-installed generic
22 drivers. Is that correct?

23 A. (Pause.)

24 That's correct. I was just refreshing
12:27 25 myself on Deforche, that it uses a pre-installed

1 generic driver.

2 Q. And also describes using the
3 pre-installed HID and MSD drivers. Correct?

4 A. That's correct, yes.

12:27 5 Q. And the MSD driver, for example, sets up
6 a means for communication between a peripheral
7 device and a processing device. Correct?

8 A. Yes, per the functionality of the mass
9 storage device driver.

12:28 10 Q. And the same is true for the HID driver.
11 Correct?

12 A. That's correct, per the HID driver or the
13 supported driver functionality.

14 MR. GREENLEAF: Let's go off the
12:30 15 record.

16 (Break.)

17 MR. GREENLEAF: No further questions.

18 Mr. Halverson, do you have any
19 redirect?

12:45 20 MR. HALVERSON: Nothing from us.

21 (Deposition concluded at 12:45 p.m.)

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1 CORRECTION PAGE

2 WITNESS NAME: MICHAEL C. BROGIOLI, PH.D.

3 DATE: 09/10/2025

4 PAGE LINE CHANGE REASON

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1 CORRECTION PAGE

2 WITNESS NAME: MICHAEL C. BROGIOLI, PH.D.

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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. 11,258,676

8 Petitioners,)

IPR2024-01438

9 vs.)

10 BARCO N. V.,)

11 Patent Owner.)

12 REPORTER'S CERTIFICATION
13 DEPOSITION OF MICHAEL C. BROGIOLI, PH.D.
14 TAKEN SEPTEMBER 10, 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

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

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

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