

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3

4
5 BOX, INC. and DROPBOX, INC.,)

6 Petitioner,)

7 vs.)

8 TOPIA TECHNOLOGY, INC.,)

9 Patent Owner.)
10)
11)
12)
13)
14)

Case No.
IPR2023-00427

U. S. Patent No.
9, 143, 561

15 The virtual videotaped deposition of RAVIN
16 BALAKRISHNAN, Ph.D., called by the Patent Owner for
17 examination, pursuant to Notice, and pursuant to the
18 Rules of Civil Procedure for the United States
19 District Courts, taken stenographically by Sandra L.
20 Rocca, CSR, RPR, RMR, CRR, via Zoom, on the 5th of
21 March, 2024, at the hour of 9:55 a.m.
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23
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25 Certification No. 084-003435, 1245

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APPEARANCES:

COOLEY LLP
By: SAMUEL WHITT
1299 Pennsylvania Avenue, NW
Washington, DC 20004-2400
202. 776. 2316
swhitt@cooley.com

appeared on behalf of the
Petitioners;

SUGHRUE MION PLLC
By: CHID S. IYER
EBENESAR THOMAS
SUJIN PARK
2000 Pennsylvania Avenue NW, Suite 9000
Washington, D.C. 20006
202. 775. 7542
ciyer@sughrue.com
ethomas@sughrue.com
spark@sughrue.com

appeared on behalf of the
Patent Owner.

Also Present:

Prashant Shenoy, Ph.D.
Jose Rivera, Videographer

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E X H I B I T S

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1	E X H I B I T S		
2	(continued)		
3	NUMBER		MARKED FOR ID
4	Balakrishnan		
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6		(Manzano)	18
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* * * * *

1 VIDEOGRAPHER: We are now on the record.
2 This is the remote video recorded deposition of
3 Dr. Ravin Balakrishnan. Today is Tuesday,
4 March 5th, 2024. The time is now 9:55 a.m. in the
5 eastern time zone. We are here in the matter of Box
6 Inc. and Dropbox Inc. versus Topia Technology Inc.

7 My name is Jose Rivera on behalf of
8 GregoryEdwards LLC. I am not related to any party
9 in this action nor am I financially interested in
10 the outcome. The court reporter is Sandra Rocca
11 also on behalf of GregoryEdwards LLC.

12 Counsel will now introduce themselves for
13 the record, after which the court reporter will
14 swear in the witness.

15 MR. WHITT: Sam Whitt on behalf of
16 Petitioners Box and Dropbox of Cooley LLP.

17 MR. IYER: This is Chid Iyer from Sughrue
18 Mion behalf of Patent Owner Topia Technology. With
19 me in this room I have Mr. Eb Thomas, who is an
20 associate at Sughrue, and later on or somewhere in
21 between, my associate Sujin Park should be joining
22 in. And we also expect Dr. Prashant Shenoy, our
23 expert, to join in at some point if he is not
24 already.

25 ///

1 RAVIN BALAKRISHNAN, Ph.D.,
2 having been first duly sworn, was examined and
3 testified as follows:

4 CROSS EXAMINATION

5 BY MR. IYER:

6 Q Good morning, Dr. Balakrishnan.

7 A Morning.

8 Q Since this is like a fresh deposition, could
9 you please state your full name for the record for
10 this deposition?

11 A Sure. It's Ravin Balakrishnan.

12 Q Where are you today in terms of location?

13 A I'm at my home just outside Toronto, Canada.

14 Q For the record, is anyone else with you in
15 the room?

16 A Not in the room. I have family members in
17 other parts of the house, but I'm in a room with a
18 door closed.

19 Q Just for completion, I'll go through some of
20 the basics of the deposition even though we have
21 done this before but several months back.

22 You understand that you've been sworn in,
23 correct?

24 A I do.

25 Q And that means that you testify under

1 penalty of perjury?

2 A If that's a question, yes, I understand.

3 Q Is there any reason you cannot testify fully
4 and accurately today?

5 A Not that I know of.

6 Q Okay. Are you under any medication or have
7 any medical condition that might impair your ability
8 to testify truthfully and accurately today?

9 A No.

10 Q Okay. The rules of the Patent Office
11 require me to instruct you that you should ask me,
12 rather than your counsel, for any clarification,
13 definition or explanation of any words or passages,
14 any questions you have on any documents presented
15 during this examination. Do you understand that?

16 A I do.

17 Q And you agree to abide by that?

18 A Yes, unless instructed otherwise by counsel.

19 Q And your counsel, Mr. Whitt, may object to
20 some of the questions I ask but you must
21 nevertheless answer the question unless he instructs
22 you otherwise. Do you understand that?

23 A I do.

24 Q Okay. And we'll be taking breaks
25 periodically. If you need a break at any time, no

1 problem. Please let me know. However, if there's a
2 question pending, I would ask that you answer that
3 question before we go on the break. Is that okay?

4 A Sure.

5 Q And during the break, you're not allowed to
6 discuss the subject matter of the deposition unless
7 it's a privileged related question with your
8 counsel. Do you understand that?

9 A Yes.

10 Q And if you have a privilege related question
11 that you want to clarify with your counsel, please
12 discuss that on the record first and let the record
13 be clear that what is the issue that you want to
14 discuss before you get into the discussion with your
15 attorney. Do you understand that?

16 A I do.

17 Q Do you have any documents in front of you in
18 paper form or in electronic form?

19 A Not directly in front of me. There's a
20 stack of documents off on the other side of the
21 table from -- unrelated to this case. And obviously
22 on my laptop there is many things in directories,
23 but I don't have anything open.

24 Q So since we'll be referring to multiple
25 documents, feel free to open a document that we are

1 referring to on another screen if that would make it
2 convenient for you.

3 A I only have one screen, so but I understand
4 the drill. I'm assuming you will make the documents
5 available as they come up.

6 Q Okay. Dr. Balakrishnan, what did you do to
7 prepare for today's deposition?

8 A You mean after the report was submitted?

9 Q After the reply was submitted?

10 A After my reply report was submitted?

11 Q Yeah, yeah.

12 A So it's been a few weeks since that report
13 was submitted. I, in the intervening period
14 reviewed the -- I guess the Petitioner's two replies
15 as well for the two patents. And in preparation for
16 the depo today, yesterday I reviewed my report -- my
17 declaration again, some of the prior art that is
18 referenced in that declaration and whatever other
19 documents that may be relevant in the declaration
20 and also met with Mr. Whitt yesterday online.

21 Q Approximately how long was the meeting with
22 Mr. Whitt? You don't have to answer the substance
23 of the communication, but approximately how long?

24 A It was a few hours.

25 Q Three hours?

1 A Around that, yeah; maybe a bit less than
2 that.

3 Q You mentioned that you reviewed prior art.
4 You reviewed the papers submitted in this case. Did
5 you refer to -- did you refer to other documents
6 during your preparation other than what I just
7 mentioned?

8 A Well, I think the easiest way to say this is
9 anything that I've referenced in my declaration or
10 cited in my declaration, I either reviewed again or
11 I've taken another quick look at some sections. I
12 don't have a precise recollection of every single
13 thing I reviewed since submitting my declaration,
14 but that's probably the easiest way to answer this.

15 Q And other than meeting with counsel and
16 reviewing the documents of the type you mentioned,
17 did you do anything else to prepare for this
18 deposition?

19 A No.

20 Q Specifically, did you review Dr. Shenoy's
21 deposition transcripts?

22 A I believe I looked at some of it and I think
23 it's cited in my declaration as well, so I looked at
24 sections of it.

25 Q So but you did not review it completely?

1 A I don't think I reviewed the entire thing.
2 There's pieces of it that are I would say
3 boilerplate information that wouldn't give me any
4 useful information to digest.

5 Q So you mentioned that you referred to
6 Dr. Shenoy's transcripts in your declaration. So
7 for passages in Dr. Shenoy's declaration for
8 whatever the passages that you need for your
9 support, you reviewed? Is that -- am I correct?

10 A You're talking about the declaration or his
11 transcript?

12 Q Sorry. His transcript?

13 A They're two different things. Transcript,
14 yes, I think that's fair. And I did review his
15 declaration prior to writing my reply declaration in
16 its entirety essentially.

17 Q Okay. When you met with your counsel to
18 prepare for this deposition, was anyone else present
19 other than your attorney?

20 A Not that I know of, but whether there was
21 somebody else in the room with Mr. Whitt remotely, I
22 don't know. It was a remote meeting on Zoom.

23 Q Can we put up Exhibit 1, please?

24 (Balakrishnan Exhibit 1 marked for
25 identification.)

1 THE WITNESS: So are we doing this in the
2 chat and download or what's the plan?

3 BY MR. IYER:

4 Q I'm assuming that's the --

5 A Okay, so give me a second to download it.
6 Just give me a second. I want to create a new
7 directory to put all these files in one place.
8 Okay, I have it.

9 Q Can you describe what this document is?

10 A Seems to be the Patent Owner's Notice of
11 Deposition of Dr. Ravin Balakrishnan, and it
12 basically says you're going to take my deposition
13 today starting at 10:00 a.m. eastern.

14 Q I'm not putting up the corresponding Notice
15 for the '942 patent, but I assume that you received
16 a Notice for both '561 and the '942 patents, am I
17 correct?

18 A Just to clarify, actually I don't think I've
19 seen either of these Notices, but I understand that
20 I'm here today to be deposed on both these patents
21 as per my declaration.

22 Q Okay, that's fair. We can take this down.
23 Can we put up Exhibit 2?

24 (Balakrishnan Exhibit 2 marked for
25 identification.)

1 BY MR. IYER:

2 Q Dr. Balakrishnan, do you recognize this
3 document?

4 A I'm sorry. Give me a second to download,
5 please.

6 MR. IYER: To the court reporter, can we
7 have that document on the screen?

8 VIDEOGRAPHER: Sure, I can share it.

9 THE WITNESS: Yes, I have the document on my
10 screen now. The question is do I recognize this, I
11 believe? The answer's yes.

12 BY MR. IYER:

13 Q Okay. I'm just requesting the court
14 reporter -- yeah, that will be better. I'm sorry, I
15 lost the screen for a short while, but got it back.

16 So can you scroll to the end of the
17 document, please, page 146. Do you recognize your
18 signature, Dr. Balakrishnan?

19 A Yes.

20 Q So you confirm that this is the document you
21 submitted as your reply declaration?

22 A It appears to be. I mean, I obviously
23 haven't checked every single page sitting here right
24 now, but it looks like the same document.

25 Q So can you scroll down to pages 4 and 5?

1 You can put it — last part of page 4 and the
2 beginning of page 5. Dr. Balakrishnan, pages 4 and
3 5 appear to list a few documents. Are these the
4 ones you confirmed you referred to when you said
5 that you reviewed documents described in your
6 declaration?

7 MR. WHITT: Objection, form.

8 THE WITNESS: This — are you talking about
9 the five documents that are in the table at the
10 bottom of page 4 and continuing to page 5?

11 BY MR. IYER:

12 Q Yes.

13 A I reviewed these documents but in addition,
14 I reviewed other documents that are more broadly
15 cited and referenced in my declaration which would
16 include the longer list of documents that are listed
17 in my first declaration, which I think if you read
18 paragraph 2 here, I say beyond the longer list and
19 this is the additional things that going beyond what
20 was in my original declaration.

21 Q Okay.

22 A And of course, this list doesn't have
23 Dr. Shenoy's declaration as well, which I think
24 somewhere else in this document I do discuss having
25 — obviously having reviewed that as I've already

1 testified.

2 Q Can we scroll to paragraph 13 of the
3 declaration? Yeah. Can you please look at the
4 first sentence? Can you read that?

5 A Yes. Do you want me to read it into the
6 record?

7 Q Yeah.

8 A The first sentence says, "Dr. Shenoy states
9 that the challenged claims require a 'server'" in
10 quotes and I cite to Dr. Shenoy's declaration at
11 paragraph 22.

12 Q Okay. So basically you have put the word
13 server in quotes, and then you have cited to Shenoy
14 declaration, paragraph 22. Essentially you're
15 saying that that quote is straight from the Shenoy
16 declaration, paragraph 22? Is that a correct
17 representation?

18 A I believe that's correct. I mean, if
19 there's a typo, I stand corrected, but I believe
20 that's correct.

21 Q And you state that the challenged claims
22 require a server. You state that Dr. Shenoy states
23 that the challenged claims require a server, am I
24 correct?

25 A That's right. That's what I cite.

1 Q And then you say, "To the contrary, none of
2 the challenged claims recite the word 'server'?"

3 A That's right.

4 Q Okay. Can we put up Exhibit 3, which is the
5 declaration of Shenoy.

6 (Balakrishnan Exhibit 3 marked for
7 identification.)

8 BY MR. IYER:

9 Q So you cited to paragraph 22. So can you
10 scroll down to paragraph 22 of Shenoy? Can you
11 please read that paragraph?

12 A You want me to read it into the record?

13 Q Yes.

14 A "The focus of the '942 patent is to provide
15 a user-centric computer network architecture of file
16 synchronization, where a server automatically
17 receives a modified file from one device associated
18 with a user when the user modifies the file and the
19 server automatically transfers it to another device
20 associated with the same user."

21 Q So paragraph 22 of Shenoy, you cited this
22 paragraph to say that the challenged claims require
23 a server. Is there any mention of claims in
24 paragraph 22?

25 A Not explicitly, although he's talking about

1 the focus of the '942 patent, which is -- we are
2 talking about claims in the end of it all. So
3 that's why I said what I said.

4 Q So your statement that paragraph 22 states
5 that challenged claims require a server is
6 incorrect?

7 A I'm sorry. Hang on a second. I don't think
8 it's incorrect. I think, you know, he -- that's a
9 citation, but it's not a verbatim citation. It's
10 basically saying he's indicating by saying it's a
11 focus that it requires a server.

12 Q A patent can have a specification and
13 claims. When you are referring to the claims, you
14 are referring to claim language. So when you say
15 challenged claims require a server and cite to a
16 passage, what else could you mean?

17 A I'm not sure I understand the question. My
18 simple answer to the overall issue is that my read
19 of Dr. Shenoy's -- that paragraph is that he is
20 saying that the focus of the patent is to -- that
21 requires a server. And if you say the focus, then
22 the claims would also require a server, otherwise
23 why would he say the focus.

24 So if you're asking me does that
25 paragraph actually say the challenged claims, I

1 would agree it doesn't explicitly say that.

2 Q So in other words, your citation to that is
3 incorrect?

4 A I wouldn't say it's incorrect. I would say
5 maybe it's not a direct citation. It's a citation
6 to the content. It's not a verbatim citation.

7 Q Dr. Balakrishnan, you have reviewed the '942
8 patent and the '561 patents?

9 A Yes.

10 Q And you understand them completely?

11 A Well, to the extent that I've read it and
12 understand them, yes.

13 Q Do you know if there are any embodiments in
14 '942 and '561 patents that are described in the
15 specification that do not require a server? Feel
16 free to review it now.

17 A Can you put it up for me so that I don't
18 have to go search?

19 Q Yeah. I'll -- Exhibit 16, can we please put
20 up Exhibit 16 so --

21 (Balakrishnan Exhibit 16 marked for
22 identification.)

23 BY MR. IYER:

24 Q Yeah. You can take your time to review it.

25 A Well, I'm not sure I actually need to look

1 at it again unless you have a specific question, but
2 at a high level, I would say the claims in the
3 patent -- when I say the patent I mean both the --
4 in this answer I mean the '561 and the '942
5 patents -- they do not restrict the -- they do not
6 restrict anything to a server. It talks about
7 servers, laptops, computers, devices, et cetera, and
8 so I don't see anything that says it's restricted to
9 a server or requires a server.

10 Q I'm asking you a different question. Are
11 there any embodiments that are described that do not
12 require a server?

13 A Give me one second. I'm going to pull this
14 document down. You're going to have to give me some
15 time to go through them both.

16 Q Take your time.

17 A So I would say yes. I would say yes, the
18 answer is yes.

19 Q Please point out --

20 A Sure, I'll start with -- okay, let me make
21 sure I got this idea. So column 4 of Exhibit 16
22 here which is the '942 patent, I would start with
23 paragraph -- sorry, column 4, line 55 onwards where
24 it says, "Figure 1 illustrates an example of a
25 suitable computing system environment in which one

1 or more of the embodiments may be implemented." And
2 it says it's only one example of a suitable
3 computing environment. It's not intended to suggest
4 any limitation as to the scope.

5 And then it goes on in line 65 onwards to
6 say, "Embodiments of the invention are operational
7 with numerous other general purpose or special
8 purpose computing system environments or
9 configurations. Examples of well-known computing
10 systems, environments and/or configurations that may
11 be suitable for use with the invention include, but
12 are not limited to, personal computers, server
13 computers, handheld or laptop devices,
14 multi-processor systems, multi-processor-based
15 systems, set-top boxes, programmable consumer
16 electronics, network PCs, mini computers, mainframe
17 computers, distributed computing environments that
18 include any of the above systems or devices and the
19 like."

20 So it's talking, for example, distributed
21 computing networks that need not have a server. So
22 there's many examples given here that are not
23 server-centric or don't explicitly require a server.
24 I could go on, but if you want me to stop here or --

25 Q You referred to Figure 1?

1 A Sorry, that citation does, the
2 paragraph does.

3 Q And please turn your attention to Figure 2.

4 A Sure, I am see that.

5 Q And --

6 A Just to say if I'm turning my head it's
7 because the document is rotated and I'm not going to
8 attempt to rotate the document.

9 Q Figure 2, what we call as first device, it
10 shows a server, am I correct?

11 A Let me look at what first device is referred
12 to. Which first device are you talking about here?

13 Q Item -- first device as in the claim. The
14 first device of the claim reads on what's marked as
15 230 server?

16 A Where does it say that in the claim?

17 Q In the claim, what would you read -- I'll
18 rephrase that question.

19 What would you read the first device of the
20 claim on with reference to Figure 2?

21 MR. WHITT: Objection, form.

22 THE WITNESS: Well, first of all, I would
23 say the claim -- you're talking about claim 1 here?

24 BY MR. IYER:

25 Q Right.

1 A I would say claim 1 is not limited or
2 restricted to Figure 2. The other figure --

3 Q Please stick to my question. I'm asking
4 referring to claim 1, claim 1 has the first
5 electronic device. What would you read the first
6 electronic device on the embodiment described in
7 Figure 2?

8 MR. WHITT: Objection, form.

9 THE WITNESS: I'm going to have to review
10 Figure 2's description in the documents so give me a
11 moment for that.

12 BY MR. IYER:

13 Q Yeah, please.

14 A Thank you. One example of the read there
15 could be device 281 or 210 as an example and that's
16 just an example. It's not limited to them.

17 Q Are you suggesting that the first electronic
18 device of claim 1 could be user device 280 or user
19 device 210?

20 MR. WHITT: Objection, form.

21 THE WITNESS: It could be.

22 BY MR. IYER:

23 Q Why do you say that?

24 A Well, as I read the claim, the claim says a
25 system -- broadly defined -- first comprising a

1 first electronic device associated with a user that
2 is configured to receive a first application of the
3 first electronic device. So that's the first
4 device. A copy of a file from a second application
5 at a second electronic device associated with the
6 user.

7 So I could have, as an example, a first
8 device being -- let me go back to the figures so we
9 get the numbers correct. It could be user device
10 280 and the second device could be -- this is not
11 limited to -- could be 210, and the first
12 application is on 280 and the second application
13 could be on 210 as an example. So I mean, that
14 reads --

15 Q Let's stick with that. So assuming 280 is
16 the first electronic device according to one of your
17 readings, what would be the second electronic device
18 and the third electronic device?

19 A So the second electronic device could be 210
20 as I already described. And you know, the figure's
21 just illustrative, so there could be another user
22 device as the text says for Figure 2. Let me go
23 back to the description. This is just an example.

24 Q So in the example, you said that the user --
25 that first electronic device is 280. Assuming that

1 280 is the first electronic device, please read the
2 second electronic device and the third electronic
3 device in the embodiment shown in Figure 2.

4 MR. WHITT: Objection, form.

5 THE WITNESS: So as I just testified, the --
6 I could map Figure 2 to having the second electronic
7 device being user device number 210 as an example.
8 And going back to the description -- bear with me
9 because I'm flipping back and forth here on the
10 screen. And as Figure 2 the text describing
11 Figure 2 on column 7, lines 25 to 40 says, although
12 the embodiment illustrated in Figure 2 includes one
13 server coupled to two user devices via the network,
14 it should be recognized that the embodiments may be
15 implemented using two or more such user devices
16 coupled to one or more such servers. It's not
17 limiting it to just those two user devices in such
18 case. It's anticipating or envisioning multiple
19 such devices connected to one or more such servers.
20 So it's not limited to just what's in that picture
21 in the text version here in that regard.

22 BY MR. IYER:

23 Q I'm asking you with reference to what's
24 shown in the figure, okay, right on the figure. You
25 identified 280 as the first electronic device and

1 210 as the second electronic device. So by
2 implication, 230 is the third electronic device?

3 A I did not say that. You are saying that.

4 Q I'm asking you what is the third electronic
5 device?

6 A I'm saying the third electronic device could
7 be another user device as the text that I just read
8 out from column 7 clearly says. So the figure is
9 not just what is on the figure, it's also the text
10 that describes the figure. And the text is
11 describing more than just two devices or two user
12 devices.

13 Q So --

14 A I'm not excluding the possibility that one
15 of them could be the server.

16 Q Okay. Could be?

17 A But it doesn't have to be. That's my point.

18 Q So 230 could be the third electronic device
19 even?

20 A It could or it could be the first. There
21 are multiple ways to read this document -- this
22 claim onto that figure.

23 Q Okay.

24 A Talking the description, but it's not
25 restricted to that. That's my -- I think the point

1 I'm trying to make.

2 Q Okay. So sticking to Figure 2 as it is
3 shown, okay, the first electronic device according
4 to you could be 280, second electronic device is 210
5 and the third electronic device is 230? Okay.

6 A It could be. It doesn't have to be. And
7 again, I'll repeat, the figure as shown is --
8 includes the description of the figure on page -- on
9 column 7 that I just read out. So my answer is not
10 just limited to the few boxes on the figure because
11 the description clearly envisions a larger number of
12 -- the possibility of a larger number of user
13 devices or -- and/or servers.

14 Q I'm asking you to stick to the
15 interpretation where 280 is the first device, 210 is
16 the second device, 230 is the third device. You
17 said that that is an interpretation?

18 A I said that that's a possible
19 interpretation. I want to be very clear that that's
20 not the only interpretation.

21 Q Okay. Now, the claim requires a file to be
22 transferred from the second device to a third device
23 via the first device. Am I correct?

24 A Sorry. You got to give me a second because
25 the claims are long. I want to make sure I get that

1 correctly. Can you repeat that question?

2 Q The claim requires a modified file to be
3 transferred from the second device to the third
4 device via the first device?

5 MR. WHITT: Objection, form.

6 THE WITNESS: Which element of the claim are
7 you talking about here? There's many --

8 BY MR. IYER:

9 Q Reading the claim as a whole, automatically
10 send via the first application, the modified first
11 electronic copy to a third application at the third
12 electronic device.

13 A Okay. I see that element, yes.

14 Q Okay. So if that is correct, if you read
15 that, then are you saying that a file from the
16 second electronic device, which is 210, is sent to
17 the third electronic device which is 230 via the
18 other electronic device which is 280? That means
19 you're saying that 210 sends a file to 230 via 280
20 in your interpretation?

21 MR. WHITT: Objection, form.

22 THE WITNESS: I'm saying that is a possible
23 read because this is just a network connection. And
24 if I read the description of Figure 2 in column 7,
25 it talks about multiple devices connected via

1 network via potentially multiple servers. I don't
2 see a limitation that it has to go through any one
3 of them in particular.

4 BY MR. IYER:

5 Q So is your position that an interpretation
6 of a claim is all permutations of the limitations?
7 Is that your interpretation?

8 A I'm not sure I understand the question.
9 It's -- I'm not sure I understand the question.

10 Q You read out devices to mean a list of
11 devices that are in the specification. So is your
12 interpretation -- because you're saying that like
13 many devices are possible, is your interpretation
14 that a claim represents all permutations of the
15 limitations in the claim?

16 MR. WHITT: Objection, form.

17 THE WITNESS: I don't agree with that
18 characterization because I'm not sure I completely
19 understand the characterization you're providing.
20 When you say the claim -- yeah, I'm going to ask for
21 a clarification because the claim says first,
22 second, third and the question is how can you map it
23 to a particular network system. And my answer is
24 yes. So but if you're saying can I make it four or
25 five when it only says three, then I would say it

1 depends on where the claim ends. If it only
2 requires three, it only requires three. So I'm a
3 little confused as to your question.

4 BY MR. IYER:

5 Q It's because your interpretation itself is
6 confusing because that's not the standard. The
7 claims are read in light of the specification and
8 the embodiments and everything that's described.
9 And you read the embodiment of Figure 2 to include
10 multiple combinations that are shown as possible
11 devices. That's what you did. I'm seeking further
12 clarification on that.

13 A Right. So I'm reading that based on what's
14 in the specification in column 7 as one part of the
15 specification that describes Figure 2 and doesn't
16 restrict Figure 2 to only having two user devices
17 and one server. So that's why I'm not saying it's
18 anything and anything. I'm saying if I read the
19 description of Figure 2 in the specification, the
20 description explicitly says it should be recognized
21 that embodiments can be implemented using two or
22 more such user devices coupled to one or more such
23 servers. It's not limiting it to just two devices
24 to a server as the picture shows.

25 Q Okay, let's shift gears. What do you

1 understand by the term server?

2 A Are you talking generally or are you
3 talking --

4 Q Yes.

5 A Well, at a very high level, generally I
6 would say a server is some kind of computing system
7 that is able to receive and transmit data.

8 Q So any system that can receive and transmit
9 data would be considered a server by you?

10 A It could be.

11 Q So what other information has to be
12 specified to decide whether it's a server? For
13 example, if you just simply connect two computers,
14 you would consider one to be a server?

15 A If I connect two computers, I would say if
16 both of them are talking to each other, then I would
17 say that's a peer-to-peer connection where both are
18 acting as client and server to one another
19 respectively.

20 Q Why was the term server used? What's the
21 origin of the term server?

22 MR. WHITT: Objection, form.

23 THE WITNESS: I can't answer that. I have
24 to go to the historical subject. I haven't done
25 that.

1 BY MR. IYER:

2 Q What's your understanding of what a server
3 is as opposed to what a client is?

4 A At a very high level, I would say a server
5 serves information to one or more clients and
6 clients receive information from one or more
7 servers, but it doesn't mean it's not
8 bi-directional. It doesn't mean a client cannot
9 send information to a server or to a server -- to
10 another client through a server. So I think it's a
11 box drawing exercise that doesn't necessarily have a
12 hard boundary on what a server or a client is,
13 especially given the types of -- I'll stop there.

14 Q So when you say a client, you mean a device
15 or a device with a software that makes it a client?

16 MR. WHITT: Objection, form.

17 THE WITNESS: I would say a client, yeah,
18 some device, some -- not just a dumb device. It has
19 to be some device with computational capability with
20 appropriate software to communicate with other
21 devices.

22 BY MR. IYER:

23 Q So the combination of the device plus an
24 appropriate software that is running on the device
25 that enables communication, that's your definition

1 -- or that's what you would understand a client to
2 be?

3 MR. WHITT: Objection, form.

4 THE WITNESS: At a very high level, as long
5 as it can connect to something else and send
6 information and receive information from that some
7 other system.

8 BY MR. IYER:

9 Q So earlier you said that you would not
10 consider a dumb device to be a client. There has to
11 be a software that allows for the communication so
12 it has to be -- to call it a client?

13 A Right. So for example, a USB stick, it's
14 just a memory stick. It's a device, but I wouldn't
15 say it's a client.

16 Q And what is a server? Would that be just a
17 device or device with an appropriate software that
18 enables it to provide service?

19 A At a very high level, yes, but it doesn't
20 restrict it to not also getting information from
21 other devices. So it's not just one way. You could
22 also receive things.

23 Q So what's the difference between a client
24 and a server then?

25 A Well, I think as I said earlier, it's a box

1 drawing exercise. If predominantly one device is
2 acting as sending out information rather than
3 predominantly receiving it, then I would say that's
4 mostly acting as a server. But when it does receive
5 information, in that situation it's a client. So a
6 device could have multiple roles. And I think
7 that's the point I'm trying to make. And I think in
8 this patent it doesn't limit it to a server or a
9 client.

10 Q So have you heard the term virtual machine?

11 A Sure.

12 Q What's your understanding of what a virtual
13 machine is?

14 A At a very high level, without getting into
15 particular claim interpretations on anything, I
16 would say it's a software-enabled instantiation of
17 what may look like a computer running on a computer
18 so that could have multiple virtual machines running
19 on a single computer, for example. So instead of
20 having five computers, I could have one computer but
21 giving the impression of five computers.

22 Q So would a client running on a device --
23 client software running on a device, at that
24 particular instant, would that be considered a
25 virtual machine that's a client?

1 A I'm not sure I understand the question. It
2 depends on how it's interpreted. A client could be
3 running on a virtual machine. It could also not be
4 running on a virtual machine.

5 Q So at an instant of time, okay, would a
6 machine act as a client machine as well as a server
7 machine?

8 A It could.

9 Q At an instant of time?

10 A When you say an instant of time, what do you
11 mean?

12 Q Like you just said instantiation, a software
13 is instantiated on a machine. So at a particular
14 instance, can a client also act as a server?

15 A It depends.

16 MR. WHITT: Objection, form.

17 THE WITNESS: It depends on the machine it's
18 running on. If it's a multi-processor machine, it
19 could.

20 BY MR. IYER:

21 Q So assuming that it's a single processor
22 machine?

23 A So if I've only got one CPU or one
24 computational processor that can only execute one
25 instruction at a time, if your unit of time is the

1 execution of a single instruction, then I would say
2 at that point of executing or that single
3 instruction, it's acting as whatever that
4 instruction is, whether it's a client instruction or
5 a server instruction or something else.

6 Q Do you know of examples of multi-processor
7 machines where one acts as a server and the other
8 processor acts as a client at the same instance of
9 time?

10 A Yes. I think my machine that I'm currently
11 using here is a laptop which -- or is one of the
12 desktops that I have has multiple processors and the
13 operating system puts instructions on to execute on
14 different processors as and when required. And I
15 have multiple things running on the machine
16 concurrently. It depends on how the operating
17 system divides up those multiple CPU cycles across
18 multiple concurrent applications.

19 Q So you're stating that your computer has
20 multiple processors and at an instance of time, one
21 of the processors could be a client and another
22 processor could be a server? That's what you just
23 said?

24 A No. I didn't say a processor could be a
25 client or a processor could be a server. I did not

1 say that.

2 Q So can you clarify?

3 A Yes. What I'm saying is on a
4 multi-processor system, the operating system that
5 runs on that machine will allocate instructions to
6 be executed on the different processors based on
7 what needs to be executed at a given time depending
8 on what applications are concurrently running.

9 Q So what's the machine you have?

10 A Right here I've got a Dell machine, a Dell
11 desktop machine.

12 Q So you're testifying that in your desktop
13 machine, you have multiple processors and the
14 operating system could allocate a client process to
15 one of the processors and a server process to
16 another of your processes? Is that what you're
17 saying?

18 A I didn't quite say that. I said particular
19 instructions of any of these processes could be
20 allocated by the operating system to run on one or
21 more of the different actual processors on the
22 machine.

23 Q So let's stick to the client and server
24 which is why you took your machine as an example.

25 A I'm sorry. I didn't take my machine as an

1 example of a client and a server. You are saying
2 that.

3 Q Well, you said that your machine -- your
4 Dell machine has multiple processors?

5 A Yes.

6 Q Okay. And staying with that example, and
7 you brought it as an example of the same machine
8 being able to operate as client and server.

9 A Sure.

10 Q So is your machine capable of allocating
11 instructions corresponding to a client to one
12 processor and simultaneously allocating instructions
13 for a server to the other processor?

14 A The operating system certainly has that
15 capability.

16 Q So you're testifying that your operating
17 system that runs on Dell has the capability of
18 allocating a client instruction to one processor and
19 server instruction to another processor?

20 A Absolutely.

21 Q So what's your -- what's your Dell machine?
22 Can you give me more --

23 A I'd have to get underneath to look at the
24 back. It's just a standard Dell desktop. There's
25 multiple -- you know, it doesn't have to be my

1 machine. There are multiple desktop machines and
2 multiple machines that have multiple processors and
3 the operating systems allocate instructions to
4 multiple processors. So I'm not sure what
5 particular machine matters to this discussion.

6 Q You took your machine as an example. I
7 would like to know what your machine is.

8 A Sure, I'd have to get off the call and look
9 behind the machine.

10 Q So if in the next break, if you can do that,
11 I'll really appreciate it.

12 A Sure.

13 Q And please confirm that your operating
14 system has the capability to allocate instructions
15 for a client to one processor and simultaneously
16 allocate instructions for a server to the other
17 processor.

18 MR. WHITT: So I'm going to go ahead and
19 object. Are you asking him to do all of that on a
20 break?

21 MR. IYER: Yes, if he can.

22 MR. WHITT: Okay, I object to that. I mean,
23 how long would that take? I mean, that seems like
24 it might take a long time.

25 THE WITNESS: I can say that I can tell you

1 what the machine is. To get into the weeds of what
2 the operating system actually does, I mean that's
3 another report.

4 BY MR. IYER:

5 Q To the extent you can, I would appreciate
6 that. If you cannot, please, you know, state it on
7 record. That's fine. That actually brings us --

8 A I'm sorry. Sir, you froze for a minute.

9 Q Sorry. I was just saying that we are close
10 to about an hour. We can take a break at this time
11 if you would like to. We can go ahead.

12 A Sure, okay.

13 MR. WHITT: Counsel, could you stay on the
14 line for a minute when we go off the record?

15 VIDEOGRAPHER: Okay, stand by. The time is
16 10:53 a.m. and we're going off the record.

17 (Short recess.)

18 VIDEOGRAPHER: The time is 11:08 a.m. and we
19 are back on record.

20 BY MR. IYER:

21 Q Dr. Balakrishnan, just before the break, we
22 were talking about multiple processors and the
23 capability of the operating system to allocate a
24 client process to one processor and server process
25 to another processor and you said that your machine

1 can do it and you were going to check on that. And
2 do you want to clarify further?

3 A Sure. So I just looked up the laptop I'm
4 running a Zoom call on and it has a 14 core
5 processor, which means it can run 14 simultaneous
6 instructions at the same time, computational
7 instructions. So that's where we -- because to the
8 extent how the operating system will allocate
9 instructions from different concurrently running
10 applications that depends on the operating system at
11 any given instance of time. So certainly the
12 capability would be there to allocate different
13 instructions from different applications to
14 different cores running at the same time. That's
15 the best way to describe that at this time.

16 Q Now, can we turn to claim 1 of '942 again?

17 A Sure. Just give me one second. Yeah, I'm
18 there.

19 Q So you see the term first application and
20 second application and third application in the
21 claim 1, right?

22 A Yes. Just give me one second. Sorry. It's
23 not scrolling. Just one second. Okay, here we go.
24 Yes, I do.

25 Q And you agree that according to the claim,

1 the files are transferred from one application to
2 another application?

3 A I would say a copy of the file is
4 transferred, yes.

5 Q What is an application? What's your
6 understanding of what an application is in this
7 claim?

8 A I would say this very broadly refers to a
9 software application of some sort. It doesn't
10 necessarily be limited to software, but it's
11 software in combination potentially with some
12 hardware if that's necessary, but it's an
13 application, software application.

14 Q So going back to the question of client
15 versus server, can an application or can a piece of
16 software that is running on a hardware be
17 simultaneously a client and a server?

18 A When you say simultaneously, do you mean --

19 Q At the same instance of time?

20 A It depends on what your granularity of time
21 is. If it's a single instruction --

22 Q It's a single clock cycle, let's put it that
23 way.

24 A I'm not sure I would agree with clock cycle.
25 I would say single instruction would be a particular

1 computational instruction and that could be acting
2 as a client instruction or a server instruction, a
3 particular instruction. But typically you would not
4 be looking at that granularity in my view.

5 Q You said that the same device can act as a
6 client and server. I'm trying to probe further into
7 that to get into what an application -- when it's
8 running on a machine, can an application which
9 clearly is a software running on a machine, can an
10 application serve as both client and server?

11 MR. WHITT: Objection to form.

12 THE WITNESS: I would say at a high level it
13 could because an application could be a
14 multi-threaded application. It has a client thread
15 and a server thread.

16 BY MR. IYER:

17 Q Do you know of any application out there
18 that has the same software having a client thread
19 and a server thread at the same time?

20 MR. WHITT: Objection, form.

21 THE WITNESS: I'd have to -- I can't give
22 you an example off the top of my head. I'd have to
23 look for that as an example. But certainly
24 peer-to-peer systems have as a client and a server
25 all the time. But if you want a specific, I'd have

1 to get back to you on that.

2 BY MR. IYER:

3 Q Now, going back to figures -- Figure 2.

4 A Okay.

5 Q If you look at Figure 2 and you may also
6 refer to Figure 3, and you know, for both the
7 figures, my questions are the same. You said that
8 it can be multiple devices that each of this device
9 read into and you cited a paragraph. Am I correct?

10 A I'm not sure -- I'm not sure what you're
11 citing to now because there are multiple devices,
12 but when you say read into what?

13 Q Each of the device you said could be
14 multiple devices and you cited to a paragraph.

15 MR. WHITT: Objection to form.

16 THE WITNESS: I didn't say each of the
17 devices could be multiple devices. I said the
18 system, the embodiment includes -- could include
19 multiple devices, two or more, citing to the
20 paragraph starting on column 7, line 26 onwards.
21 That paragraph ends by saying the embodiments of the
22 invention may be implemented using two or more such
23 user devices coupled to one or more such servers. I
24 didn't say that one device could be multiple devices
25 if that's what you're asking.

1 BY MR. IYER:

2 Q So is your testimony, keeping with that same
3 argument that you put up, that the combination or
4 the arrangement could be from multiple devices to
5 multiple devices?

6 A I think that's fair, yes.

7 Q So you would read the claim in view of this
8 embodiment to mean that even the connections between
9 the device could be criss-cross connection between
10 multiple devices?

11 MR. WHITT: Objection, form.

12 THE WITNESS: I'm not sure what you mean by
13 criss-cross. That's a term that you've thrown out,
14 but it's connected through the network.

15 BY MR. IYER:

16 Q So --

17 A There are connections via the network.
18 There's got to be some communication between them.
19 I just want to be careful because you've added a
20 word criss-cross which, you know, if that's got a
21 special meaning in your use of it, then I'll have to
22 think about that.

23 Q So would user device 280 be directly
24 connected to 210 as per your interpretation?

25 A Again what do you mean by directly

1 connected?

2 Q Directly --

3 A It's clearly connected through a network.

4 Q Not through a network. Would it be directly
5 connected, not through a network?

6 MR. WHITT: Objection, form.

7 THE WITNESS: The word directly connected,
8 if you have a special meaning to that, I will have
9 to analyze that. But I would read this
10 paragraph again on column 7 and starting at line 29
11 it says, such personal computers or work stations
12 that are linked via a communication medium such as a
13 network. So connected through a network or in some
14 other communication medium. If you mean directly
15 connected to include that kind of communication
16 medium, I would say yes. But if you have some other
17 special meaning to the term directly connected, then
18 I'd have to consider that as you provide me that
19 special meaning.

20 BY MR. IYER:

21 Q So let me rephrase that question. 210 and
22 280, can they be connected without an intervening
23 device, intervening computer?

24 A Well, it needs to be connected via some
25 communication medium. So again, you're throwing

1 another term, intervening computer. A communication
2 medium doesn't necessarily have to be a computer,
3 but —

4 (Technical difficulties.)

5 THE WITNESS: It could have a computer,
6 could be a bunch of wires. It could also be a
7 computer in the middle. But I think both are
8 possible.

9 BY MR. IYER:

10 Q You just froze. You may have to repeat that
11 answer.

12 A Okay. Maybe I can get the court reporter to
13 tell me where she — if that makes sense, I'll try
14 to repeat where I was.

15 (Record read as requested.)

16 THE WITNESS: So I think I'll try to
17 complete it after where the court reporter read I
18 said the communication medium could be a computer,
19 but it could also be a bunch of wires, that it
20 doesn't have a computer in between. So I think both
21 possibilities are possible just using the term
22 communication medium. I hope that clarifies the
23 question — the answer. If not, maybe you should
24 ask the question again and I'll give the answer all
25 over again.

1 BY MR. IYER:

2 Q That might make the record clear. Court
3 reporter, can you please repeat my question back?

4 (Record read as requested.)

5 THE WITNESS: Okay. So you've introduced
6 the word intervening computer, intervening device.
7 To the extent that you have a special meaning for
8 that, I'd have to consider that. But I'm just
9 reading the description of Figure 2 going back again
10 to column 7, lines 26 to 40. It says the electronic
11 user devices 210 and 280 are linked via a
12 communication medium such as a network. So it could
13 include a computer in that network. It doesn't
14 necessarily have to be. A communication medium
15 could be wires connected to network cards on each of
16 those machines, for example.

17 BY MR. IYER:

18 Q So you would read the embodiment on -- in
19 Figures 1 and 2 -- sorry, 2 and 3 to mean that 210
20 could be connected to 280 directly using wires
21 without any intervening computer?

22 MR. WHITT: Objection, form.

23 THE WITNESS: So it would be for Figure 2, I
24 would say that communication medium doesn't
25 necessarily have to have a computer. But the wires

1 obviously have to be configured to be able to move
2 data back and forth. So again, it depends on what,
3 you know, is meant by a computer. To the extent
4 that a network card sitting on each of those user
5 devices has a processor in and of itself, many, many
6 people would consider that a computer as well,
7 albeit a dedicated computer. So I think it really
8 depends on where you draw the line of what is a
9 computer. So if you have a special meaning to that,
10 I'm happy to consider that.

11 BY MR. IYER:

12 Q How are the computers connected in a
13 peer-to-peer setting?

14 A It depends. That's a very broad term,
15 peer-to-peer setting.

16 Q Yeah. You can give answers to the extent
17 and with qualifiers that are required, but please
18 answer the question.

19 A Sure. I can give you an example of having
20 two -- let's just say two laptops, it's two peers
21 connected to each other via a communication medium
22 being a network cable, for example, and obviously
23 each of those laptops would have to have a network
24 interface card or a chip that is able to transmit
25 and receive data through that network cable from

1 that other computer that's connected to it, as one
2 example.

3 Q Keeping that example in mind, can you please
4 revisit your answer about Figures 2 and 3, whether
5 computers -- or whether devices 210 and 280 can be
6 connected with just electronic media just like an
7 ethernet cable?

8 MR. WHITT: Objection, form.

9 THE WITNESS: I'm sorry. I'll give you the
10 same answer I gave you earlier because it
11 encompasses the scenario I just talked about where
12 the cable would act as the network. So I think my
13 earlier answer stands and includes the answer of the
14 peer-to-peer example I just gave you.

15 BY MR. IYER:

16 Q So when you say that multiple devices -- the
17 embodiment described includes multiple devices and
18 you say that those devices could be connected by
19 ethernet cables directly with a network card, do you
20 still maintain that all criss-cross connections
21 between every device to every other device is
22 contemplated by the embodiment in Figures 2 and 3?

23 MR. WHITT: Objection, form.

24 THE WITNESS: I did not -- you're
25 introducing a new term here, criss-cross, and I want

1 to be careful. I don't know what you mean by that
2 necessarily. Maybe you can clarify.

3 BY MR. IYER:

4 Q What I mean is every device to every other
5 device.

6 A I don't see that being excluded in the
7 description of Figure 2.

8 Q So your testimony is that Figure 2 includes
9 an embodiment that has every device? First of all,
10 you said there are multiples devices and every
11 device being connected to each other directly by
12 electronic media like an ethernet cable?

13 A Via a communication medium. If that
14 communication medium is an ethernet cable, I think
15 that would be captured.

16 Q Can you turn to paragraph 15 of your
17 declaration?

18 A Give me one second. Remind me which exhibit
19 that was. Was it 2 or 3? It's 2.

20 Q Yeah, 2 is your declaration.

21 A Sorry. Which paragraph again?

22 Q Paragraph 15.

23 A I'm there.

24 Q And you're referring to Shenoy paragraph 25.
25 You could refer to paragraph 25 of Shenoy and

1 familiarize yourself because my next set of
2 questions are going to be on that.

3 A Okay. So hang on. Okay, I've reread
4 Dr. Shenoy's paragraph 25. Okay.

5 Q So the first sentence of your declaration
6 paragraph 5 says --

7 A Can I interrupt? Paragraph 5 or 15?

8 Q 15. Sorry. You say Dr. Shenoy describes
9 one of the supposed problems in prior art. Where
10 did you infer that from paragraph 25? Can you be a
11 little bit more -- can you clarify that for us from
12 paragraph 25, referring to paragraph 25?

13 A Right. As I say in my paragraph 15, I quote
14 portions of his paragraph 25 where he talks about
15 remote desktop software, distributed file system,
16 FTP systems having the requirement that these files
17 be stored in a single central location rather than
18 locally on multiple devices. And then he goes on to
19 say that because these solutions depended on the
20 devices of the user being connected to a server
21 through a network to access the user's files, the
22 availability and performance of the network was a
23 limiting factor for accessing and using the file.
24 So that is clearly a limitation that he cites that
25 is an -- I would say is a -- is a problem.

1 And he also says copying files are tedious
2 and complex at the start of his paragraph. So he's
3 basically saying this process is tedious and
4 complex. So he's suggesting another approach which
5 is using a file server and then talks about that
6 problem as well.

7 Q And you use -- you refer to Dr. Shenoy and
8 say that Dr. Shenoy appears to argue later that at
9 least some of the challenged claims require that the
10 files be stored at a single location. Now -- and
11 you refer to paragraph 128.

12 A Yes.

13 Q So can you please look at paragraph 128?

14 A Sure. Just give me one moment. Yes, okay,
15 I've read 128.

16 Q How do you infer from paragraph 128
17 regarding challenged claims?

18 A Well, because he says -- at the end of 128,
19 he says Hesselink's -- the disclosure in Hesselink
20 is based on a peer-to-peer connection as opposed to
21 a client-network architecture. So he's -- I read
22 that as he's expecting to see a client-network
23 architecture and doesn't consider the peer-to-peer
24 connection as being sufficient.

25 Q Where does paragraph 128 talk about claims

1 because you refer -- you cite and you say challenged
2 claims require. Is Shenoy talking anywhere in this
3 citation about challenged claims as opposed to
4 simply talking about Hesselink structure?

5 A Well, he's talking about a Hesselink
6 structure in -- all of his talking about Hesselink
7 is all about why Hesselink does not render the
8 claims obvious, so it's got to be taken in a broader
9 context.

10 Q But that's not what you're saying. You're
11 saying challenge -- you're saying Dr. Shenoy argues
12 that challenged claims require and then you refer to
13 this paragraph. This paragraph talks about
14 Hesselink and distinguishing Hesselink's
15 architecture from a different architecture.

16 A That's right, but he's talking about -- he's
17 not talking about Hesselink in isolation. He's
18 talking about why Hesselink in his view does not
19 render the claims obvious. And that's why I'm
20 taking the context into account when I read his
21 declaration.

22 Q Yeah, but your paragraph as it states now
23 cites and then says Shenoy asserts that challenged
24 claims require that. That's not correct.

25 MR. WHITT: Objection, form.

1 THE WITNESS: I disagree with that. If
2 you're saying the citation does not specifically
3 have the word challenged claim in it, I would agree.
4 But the context of his declaration in that
5 paragraph certainly is about the challenged claims.

6 BY MR. IYER:

7 Q Dr. Balakrishnan, have you read Shenoy's
8 declaration end-to-end and how much time
9 approximately did you spend reading Dr. Shenoy's
10 declaration?

11 A The answer to the first part is yes, I've
12 read it end-to-end. I don't know -- I don't recall
13 how much time; multiple hours for sure before
14 preparing my reply declaration.

15 Q You seem to be going all over the place
16 jumping from claims to specification to background
17 without being specific about what Shenoy is talking
18 about. Am I correct?

19 MR. WHITT: Objection, form.

20 THE WITNESS: I disagree with that
21 characterization.

22 BY MR. IYER:

23 Q Can we go to paragraph 17 of your
24 declaration?

25 A Did you say 17 or 70?

1 Q 1-7. Sorry.

2 A Okay. One second. Okay.

3 Q Can you please read that paragraph and
4 familiarize yourself? I will be staying in this for
5 some time so you can read it and familiarize
6 yourself.

7 A Okay. Okay.

8 Q So you start off by saying Dr. Shenoy opines
9 that HTTP protocol is a request-response protocol.
10 What's your understanding of a request-response
11 protocol?

12 A Well, my understanding is that a client
13 sends a request and a response comes back from the
14 machine the client sent it to.

15 Q So within the context of HTTPS -- HTTP, the
16 client sends the request and the server -- the
17 second machine which is a server at that instant,
18 responds with a response? Am I correct?

19 A That is a -- one aspect of it, yes.

20 Q What is another aspect of it?

21 A Well, there are many other things that go on
22 in the HTTP systems. But certainly one of them is
23 this notion of client sending a request and a server
24 sending a response back. Other examples include the
25 client sending data which is not a request, as I

1 point out in the second part of my paragraph 17
2 where it's not a request, but rather a PUSH or a PUT
3 -- an operation to put information onto the -- or to
4 write information onto the server.

5 Q So what's your understanding of an HTTP PUT
6 as in the Version HTTP 1.1?

7 A My understanding is that is instruction to
8 put some data onto the server.

9 Q And what's your understanding of POST as in
10 HTTP Version 1.1?

11 A I would say it's a very similar notion of
12 putting or writing data to the server.

13 Q What's the difference between PUT and POST?

14 A I'd have to check the specific difference,
15 but my understanding is they effectively -- what I'm
16 talking about here is actually writing data, sending
17 data to the server. If you want specifics on the
18 intricacies of it, I have to look it up. I did not
19 opine on that.

20 Q Can we upload Exhibit 5?

21 (Balakrishnan Exhibit 5 marked for
22 identification.)

23 THE WITNESS: This is coming on chat?

24 BY MR. IYER:

25 Q Yeah, I'm requesting the --

1 A Okay, I see it. Just give me a second.

2 Q That is -- are you familiar with this
3 document?

4 A Sorry, I haven't brought it up yet. Just
5 give me a second. Yes, I've looked at this
6 document.

7 Q Okay. So please tell me what's the
8 difference between PUT and POST. If you want to
9 refer to this document, feel free to.

10 A Thank you for the document. I think the
11 easy way to answer this is to simply look at page 36
12 of this document gives one difference in the middle
13 of paragraph or Section 9.6. It says, "The
14 fundamental difference between the POST and PUT
15 request is reflected in the different meaning of the
16 request, a URI or universal resource identifier,
17 where in the POST request, it identifies the
18 resource that will handle the entity, whereas in the
19 PUT request it identifies the entity. So it's just
20 more specific in one instance than in the other.
21 But for the purposes of my analysis, it's really
22 about both of these are putting the data onto the
23 server from the client.

24 Q So it is putting data from the client to the
25 server?

1 A To the server or some -- it's telling the
2 server to put it somewhere, whether it's on the
3 server or to some other -- some other entity, right.

4 Q Earlier in the previous answer you said
5 about resource and entity. What's your
6 understanding of resource and entity as referred to
7 in this section of HTTP?

8 A I'd have to -- I have not looked into that
9 and I don't want to give you an off-the-cuff answer
10 because that needs a more detailed study to give you
11 a proper answer to that. And I don't think that's
12 relevant to my analysis as per the claims.

13 Q Let's stick to the question. Whether it's
14 relevant or not, that's a different issue. If you
15 need to take a little bit of time looking at it and
16 if you can confirm what's the resource versus what's
17 an entity because you have used the ad example and
18 you have opined on that.

19 A Sorry. When you say add, what add example?

20 Q In both your declarations, you refer to
21 server display ads.

22 A Oh, ads, okay. Sorry, I thought you meant
23 a-d-d.

24 Q Sorry, my English is -- this is how it is.

25 A No worries. So again, so what exactly is

1 the question?

2 Q What is a resource and what is an entity as
3 it refers to HTTP Version 1 -- 1.1 as in the
4 document here?

5 A I'm not sure I want to answer that
6 off-the-cuff. I think that's not a simple answer.

7 Q Like I said, you can review the document.
8 If you need a few minutes to review and familiarize
9 yourself, feel free to.

10 A So I want to be very cautious because I have
11 not studied the ramifications of the differences
12 between resource and entity. And any answer I give
13 you now, I want to make sure doesn't get
14 misconstrued because I haven't analyzed that with a
15 focus on this report. But I will take you to page 8
16 of this document that has definitions of
17 terminologies for resource and entity and I will
18 leave the answers to those two terminologies. But I
19 don't want to get into interpreting what those mean
20 because I haven't done that analysis. And I don't
21 want to give you an off-the-cuff answer here even
22 with a few minutes of reading because I haven't
23 considered all the ramifications of what those
24 answers might be relative to the claims at issue
25 here and the disputes at issue here.

1 Q I would like further clarification because
2 you're using the POST and PUT as equal to push. I
3 just need to understand what these are correctly so
4 that we can understand how you make that equal.

5 A So I'm using it at a high level because it
6 is sending data from the client to the server. That
7 is the level of analysis I'm doing here. To the
8 extent there's a greater level of granularity in the
9 differences between them beyond moving the data from
10 the client to the server, I have not provided an
11 opinion on that. And I don't want to do that on
12 this depo without considering the ramifications, the
13 broader ramifications of the lower level granularity
14 of the differences between PUT and POST beyond the
15 high-level concept which I believe is all that is
16 necessary for the purposes of analyzing these claims
17 and the disputes at issue here.

18 Q You said that POST and PUT are ways of like
19 transferring data from a client to a server?

20 A Yes.

21 Q Okay. Can these -- can the same POST and
22 PUT feature be used to transfer data from a server
23 to a client as per HTTP Version 1.1?

24 MR. WHITT: Objection, form.

25 THE WITNESS: Those two commands, POST and

1 PUSH -- sorry, POST and PUT, the server side, if
2 it's only a server side, would not -- would not use
3 those commands. But a server acting being as both a
4 server and a client, then it could use the client
5 side on the server to use those commands.

6 BY MR. IYER:

7 Q So essentially going back to our earlier
8 virtual machine introduction, so if a device has a
9 server side and a client side, there are separate
10 virtual machines, you're saying that the PUT and
11 POST can only be used by the client side of the
12 client virtual machine of that device?

13 MR. WHITT: Objection, form.

14 THE WITNESS: In that example, if the client
15 side is running on one virtual machine and the
16 server side is running on another virtual machine,
17 then the PUT and POST HTTP commands would be
18 executed on the client virtual machine.

19 BY MR. IYER:

20 Q So you can review Version 1.1. Can you show
21 anywhere server PUSH being described in Version 1.1?

22 MR. WHITT: Objection, form.

23 THE WITNESS: Yes, because when I see the
24 word response, when the server responds to a
25 request, it is sending data back. But as I think in

1 my first deposition, if I recall correctly -- it's
2 been a few months, but if I recall correctly that
3 response could include information that was never
4 actually requested; hence, my example of
5 advertisements or ads, a-d-s, as something that I
6 don't think any client ever requests ads. It just
7 shows up.

8 So that's -- that was my interpretation why
9 it's pushing data that it's not necessarily
10 requesting. But if you're asking me does the server
11 issue a PUT command or a POST command, I think I
12 just answered that. The answer's no, not from the
13 server.

14 BY MR. IYER:

15 Q So is there a server PUSH feature in HTTP
16 Version 1.1?

17 MR. WHITT: Objection, form.

18 THE WITNESS: I think I just gave you the
19 answer to that. Inherent in the response, it's
20 pushing -- it can push data in the response. If
21 you're asking me is there a PUSH command in the
22 server side, the answer's no.

23 BY MR. IYER:

24 Q So you mentioned transferring data. Okay.
25 Can a PUT or a POST command transfer a whole file?

1 A I believe it can, but I have to look it up.
2 I have to research that and consider that particular
3 example. But when I think of data, I don't put a
4 limit on what data is.

5 Q But the claims require a file. So if you
6 are opining as to claims '942 and '561 patent
7 claims, so we are talking about transferring files.

8 A So I would say yes because that data would
9 encompass a file.

10 Q The PUT and POST command can transfer files,
11 that's your --

12 A Yes.

13 Q Are there any restrictions on like the size
14 of data that can be transferred using a PUT and POST
15 command?

16 A I would have -- I have not investigated that
17 so I cannot answer that right now.

18 Q In your earlier declaration you refer to --
19 when you refer to a file, you are giving an example
20 of a user manual. Okay. That's the example you
21 gave as an example of a file that would be data. Do
22 you recollect that?

23 A I don't recall that specific, but I don't
24 see a reason to question you on that.

25 Q Okay. Exhibit 17, can you please upload

1 Exhibit 17?

2 (Balakrishnan Exhibit 17 marked for
3 identification.)

4 BY MR. IYER:

5 Q And once the exhibit is up, please look at
6 paragraph 421.

7 A Okay.

8 Q Okay. Can you please read that, the first
9 sentence?

10 A You want me to read it into the record?

11 Q Yes.

12 A Okay. It says, "Client A may automatically
13 transfer a first electronic file using the second
14 application" -- in brackets -- "(HTTPS
15 client/server) that posts content from the client to
16 the server."

17 Q And I'm sorry. Can you continue for the
18 second sentence?

19 A Sure. Second sentence says, "For example,
20 the sequence in Figure 6 is described as showing an
21 illustrative method for sharing and synchronizing
22 content using the server architecture of Figure 4. "
23 Close quotes, Sigurdsson paragraph 61.

24 Q Then after that you're saying an exemplary
25 first electronic file disclosed by Sigurdsson as

1 residing on Client A is a very large maintenance
2 file. Do you see that?

3 A Yes.

4 Q And by very large, what do you mean in terms
5 of size? If you want to refer to --

6 A I think it is -- that's a quote from
7 Sigurdsson, so maybe you can put up Sigurdsson on
8 the chat.

9 Q Yeah, Sigurdsson -- I have it. Yeah, it is
10 Exhibit 11.

11 (Balakrishnan Exhibit 11 marked for
12 identification.)

13 THE WITNESS: Sigurdsson doesn't specify
14 what the size of that file is, but a maintenance
15 manual would typically be multiple pages, so I don't
16 know, whatever that is in number of bytes.

17 BY MR. IYER:

18 Q Would that be 10 gigs?

19 A I don't know. It could be. It may not be.
20 I'm not going to put a number on it.

21 Q My recollection is Sigurdsson gives a size
22 of what a large file would be. Let me --

23 A Oh, it does?

24 MR. WHITT: Objection, form.

25 ///

1 BY MR. IYER:

2 Q If you can look it up. I think it does.

3 A Are you asking me to look it up or are you
4 doing it because this document doesn't seem to be
5 searchable?

6 Q Yeah. It says very large. What would be
7 your understanding of what is a very large file?

8 MR. WHITT: Objection, form.

9 THE WITNESS: I'm not going to give you a
10 precise answer on that because large could mean a
11 range. In this example, I would say multiple --
12 multiple pages which means multiple bytes. Whether
13 that's a gigabyte or terabyte or a kilobyte, I'm not
14 -- I don't know the answer to that. It depends on
15 how that file is structured and what the contents of
16 the file are, what the encoding is. There's so many
17 things that can affect the actual memory size of the
18 file.

19 BY MR. IYER:

20 Q So a very large file, do you give an upper
21 limit to that?

22 A I don't.

23 Q So it can be 10 gigs?

24 A Hypothetically, I don't see why not.

25 Q So keeping that in mind, can a client

1 transfer a very large file using a PUT command or a
2 POST command?

3 MR. WHITT: Objection, form.

4 THE WITNESS: Well, Sigurdsson is saying it
5 can. Whether it's using the PUT or POST command
6 per se and if there's any limits on PUT and POST
7 per se, I'd have to investigate that because that
8 was not my -- not something I focused on.

9 BY MR. IYER:

10 Q So what you focused on was that PUT and POST
11 command can transfer data? That's the -- that's the
12 only focus? You're saying that HTTP PUT and POST
13 command can transfer data. And claim 1 requires
14 transfer of file and your own declaration uses
15 Sigurdsson's reference to a very large file as a
16 file. So aren't you saying that PUT and POST
17 command can transfer a very large file?

18 MR. WHITT: Objection, form.

19 THE WITNESS: I think I'm saying PUT and
20 POST commands can transfer data. Files are data.
21 And Sigurdsson's showing that data can be
22 transferred and files can be transferred. Whether
23 or not there's a limit on the size of a file or the
24 size of data that can be put -- transferred using
25 PUT and POST, that level of granularity is not

1 something I looked into because I don't believe that
2 is necessary to interpret the claims. The claims do
3 not put a limit or requirement on the granularity of
4 the size of the file.

5 BY MR. IYER:

6 Q Your own declaration -- you're free to look
7 at your previous declaration. This is the only
8 reference to files being transferred. I present
9 that to you. If you can show me anything in your
10 previous declaration or in this declaration, you
11 know, where examples of file other than the very
12 large file that you mention, if you can, please do
13 so.

14 A Well, I'll take your representation for it.
15 I don't think it matters whether it's a very large
16 file or a small file. I think I've already answered
17 the question in my previous answer, PUT and POST
18 commands can move data. Files are data. And
19 therefore, Sigurdsson is clearly showing that files
20 can be moved. And the size is another level of
21 granularity that's not required in the claim to
22 conform to a particular size or requires that
23 particular sized files be moved.

24 Q You said that PUT and POST commands can
25 transfer -- you put two and two together and your

1 conclusion was that it can transfer files. And do
2 you know the requirement that prior art has to be
3 enabled for what it is supposed to be teaching?

4 MR. WHITT: Objection, form.

5 THE WITNESS: You'd have to show me the
6 specific legal definition. I'm not sure what you
7 mean exactly because here we're talking about an
8 obviousness combination.

9 BY MR. IYER:

10 Q No, PUT and POST command, for them to be
11 used to transfer files, it has to be enabled to do
12 that and at least enabled to do the examples that
13 you also cite?

14 A Well, the claims does not say PUT and PUSH
15 or PUT and POST. The claims do not also say HTTP.
16 These are just examples. And even in Sigurdsson,
17 HTTP is an example. I think I was very clear in
18 that in my declaration, if not in the first
19 declaration, certainly in both declarations. So I
20 think you're trying to narrow it or Dr. Shenoy is
21 trying to narrow it to only HTTP. And again, I
22 would also say that this notion of file size is not
23 something the claims have a limitation on or a
24 requirement to support small or any granularity. It
25 just says file.

1 Q You're using Sigurdsson and Sigurdsson has
2 HTTP protocol. That's what it is using to describe.
3 And under the HTTP protocol, data is transferred
4 only using -- HTTP Version 1 only using PUT and
5 POST, and PUT and POST refer to transfer of data
6 from client to the server.

7 So putting all that together, HTTP command
8 does not enable transfer of a large file from the
9 first device -- from the second device all the way
10 to the third device which is what the claim
11 requires?

12 MR. WHITT: Objection. Go ahead.

13 THE WITNESS: I completely disagree with
14 that characterization.

15 BY MR. IYER:

16 Q So explain how using HTTP Version 1 you
17 could take a file which is -- which could be of any
18 size, from a second device and transfer it all the
19 way to the third device --

20 MR. WHITT: Objection to form.

21 BY MR. IYER:

22 Q -- which the claim requires.

23 MR. WHITT: Objection, form.

24 THE WITNESS: The claim does not require
25 HTTP 1 to do anything. The claim just requires a

1 transfer of file. The claim doesn't say you need to
2 use HTTP.

3 BY MR. IYER:

4 Q The only --

5 A Neither does it say what the size of the
6 file is, so I'm confused what --

7 Q The reference you have cited is Sigurdsson.
8 And Sigurdsson describes an HTTP protocol. So we're
9 not talking about what the claim does. I'm asking
10 you about what Sigurdsson does.

11 Show me using PUT and POST command how a
12 file can be transferred -- a large file at that, can
13 be transferred from the second device through the
14 first device to the third device.

15 MR. WHITT: Objection, form.

16 THE WITNESS: Give me one moment because I
17 want to look at my declaration again on this topic
18 because I think I covered some of these issues, not
19 the size issue, but the broader issue. So first of
20 all, I don't think Sigurdsson is limited and I think
21 I say this very clearly in paragraph 35 of my reply
22 report. Sigurdsson is not limited to only using a
23 client to transfer information. It can be used as
24 client and a server on each of its devices. So for
25 example, Client B can include both a client and a

1 server that bi-directionally communicates with a
2 server, so there's a reciprocal client and a server
3 there. So that's point Number 1.

4 BY MR. IYER:

5 Q So sticking with that, so you're saying the
6 only way -- or you're giving a way of transferring
7 the file from the server to the third client using
8 the client side of the first device because that's
9 only -- you only said you can use PUT and POST
10 command. And the PUT and POST command is a client
11 side command. So to transfer the file from the
12 server to the -- from the first device to the third
13 device, you have to use the client side of the first
14 device?

15 MR. WHITT: Objection, form.

16 THE WITNESS: I did not say you have to use
17 the client side. I think very clearly paragraph 35
18 onwards I say it can be used -- you can use the
19 server side or the client side.

20 BY MR. IYER:

21 Q How do you use the server side?

22 A Server can move data to other -- to other
23 clients based on a request.

24 Q Using Version 1.1 on HTTP, how would a
25 server send a file to a third device?

1 MR. WHITT: Objection, form.

2 THE WITNESS: Well, once a request comes in,
3 it would send the file.

4 BY MR. IYER:

5 Q So the request has to come in from the third
6 device?

7 A Sure.

8 Q Okay.

9 A In that example.

10 Q Give me another example where it doesn't
11 require a request for a file to be transferred from
12 the server to a third device?

13 MR. WHITT: Objection, form.

14 THE WITNESS: I'm not sure I understand the
15 question. If it's acting as a server, the request
16 has to come in and it sends the file over.

17 BY MR. IYER:

18 Q Can we upload Exhibit 4?

19 (Balakrishnan Exhibit 4 marked for
20 identification.)

21 THE WITNESS: Okay, I've got Exhibit 4.

22 BY MR. IYER:

23 Q Do you recognize this document?

24 A I believe I've seen this, yes.

25 Q If you want to take a moment to review that,

1 please go ahead. This is not part of your
2 declaration.

3 A This is a pretty long -- it's a 100-page
4 document, so if you want me to look at the whole
5 thing, it's going to take a while. If you want to
6 point me to a particular section and I can look at
7 that.

8 Q Familiarize yourself with what the document
9 is at this stage and, you know, skim it briefly.

10 A So at a very high level, this appears to be
11 describing the HTTP 2 -- sorry, HTTP protocol but
12 Version 2.

13 Q So the earlier version was 1.1, and this is
14 Version 2. Are you familiar with anything in
15 between?

16 A When you say in between, you mean in between
17 versions?

18 Q Yeah.

19 A I'm generally familiar with it. Have I
20 studied it lately? No.

21 Q So now can you scroll down to -- yeah,
22 page 3 of this document?

23 A I'm there. Still in the Table of Contents,
24 right?

25 Q Yeah. Can you see Section 8.2?

1 A Sure, I do see that.

2 Q Okay. What is it called?

3 A It's a server push -- push request, push
4 responses.

5 Q So do you want to familiarize that section?

6 A Sure. Okay, I've read the Section 8.2, but
7 not -- I haven't read the subsequent 8.2.1,
8 et cetera.

9 Q So what is a server push that is described
10 here? Can you give a general understanding to the
11 extent -- you're an expert in this field, to the
12 extent you can, you know, understand in this short
13 time?

14 A Sure. Just from reviewing this as opposed
15 to studying it in detail for the purpose of this
16 answer and my general understanding of the field is
17 in this particular version of HTTP, Version 2, it
18 allows for preemptive sending or pushing information
19 to a client when it -- preemptive means before the
20 client necessarily requests that particular thing in
21 specifics.

22 Q So a server push is a feature in Version 2
23 that can enable the server to push data to the
24 client without a request? Would that be a fair
25 characterization?

1 A At a very high level, without a specific
2 request, yes.

3 Q And when you say -- you said specific
4 request. What would your understanding be of a
5 specific request as opposed to something other than
6 a specific request?

7 A Well, for HTTP to work, you know, there
8 would have to be an initial request for some
9 connection. So if there was no request at all, then
10 the server wouldn't even know this was a client. So
11 that's what I meant. There's an initial connection
12 request. And after that, if you're sending
13 something beyond that, that would be -- could be
14 encompassed by the server push functionality as one
15 example.

16 Q So server push can push data to a client
17 without a specific request like you mentioned in
18 your previous answer?

19 A Yes. In this example of HTTP, yes.

20 Q Do you know when Version 2 came into
21 acceptance by the community?

22 A I don't have a specific date. I see a
23 May 2015 date on this document, but I haven't looked
24 at that. It's not something I've opined on.

25 Q Do you have a reason to believe that it

1 could have been issued before May 2015?

2 A It could have, but I don't -- I don't have
3 that data to say either way.

4 Q So the server push as described in Version 2
5 is not there in Version 1.1, am I correct?

6 MR. WHITT: Objection, form.

7 THE WITNESS: I would say this particular
8 implementation described in this document is not
9 specifically discussed in Version 1.1.

10 BY MR. IYER:

11 Q So am I correct in saying that the feature
12 that you described as being server push, that is
13 pushing data without a specific request, that
14 feature -- any command that implements that feature
15 was not there in Version 1.1?

16 MR. WHITT: Objection, form.

17 THE WITNESS: I would say this command in
18 this document was not available in 1.1. But as I
19 testified earlier, the notion of pushing information
20 that wasn't necessarily specifically requested was
21 inherent in the original HTTP because I could
22 request a web page and I get stuff back that was not
23 exactly what I requested. And I've already gone
24 through that several times. But if you're talking
25 about this particular implementation of server push

1 that's in paragraph 8.2 of this document as
2 Exhibit 4, this part I would agree was not in 1.1.

3 BY MR. IYER:

4 Q Do you know what version of HTTP is used
5 currently?

6 A I'd have to look it up. It depends on what
7 you're running.

8 Q Are you running any HTTP applications in any
9 of your machines?

10 A Right now I don't believe so because --
11 well, I guess the Zoom meeting is launched through a
12 browser, so I guess yes. Beyond that, I'm not -- I
13 don't have anything else open except all these PDF
14 files that you've sent me.

15 Q Do you know any reason why HTTP server push
16 was introduced into Version 2?

17 A I have not looked into that question.

18 Q Would I be correct in saying that there was
19 a need for something like a server push that
20 prompted the HTTP protocol to have that feature
21 added to Version 2?

22 MR. WHITT: Objection, form.

23 THE WITNESS: I have not opined on that so
24 I'd have to look into the need issue.

25 ///

1 BY MR. IYER:

2 Q So today if a device is -- a device has or a
3 system has HTTP as the base, would that be --
4 reasonably speaking on all practical matters, would
5 that be Version 2 or Version 1.1?

6 MR. WHITT: Objection, form, scope.

7 THE WITNESS: I'd have to look at the
8 current version that's running to answer the
9 question. It would be some superset of 1.1.

10 BY MR. IYER:

11 Q What do you mean by superset?

12 A It would do -- typically do more than 1.1
13 would do. That's typically how these things work.

14 Q Right. So --

15 A I'd have to study the current version to
16 answer that in specifics. If you want specifics,
17 and I don't -- I can't do that in a depo. That's
18 something that needs further investigation on my
19 part.

20 Q So HTTP 2 version adds a feature that was
21 not there in 1.1. So why would HTTP 2 not be a
22 superset of HTTP 1.1?

23 MR. WHITT: Objection, form.

24 THE WITNESS: I did not say it was not a
25 superset. It probably was a superset or a different

1 set. I haven't done the investigation to see
2 whether it excludes anything in 1.1. So if it does
3 exclude something in 1.1, it won't be a superset, a
4 different set. But that level of detail is not
5 something I looked at for this case because it
6 wasn't relevant to the claims.

7 BY MR. IYER:

8 Q No, but 1.1 did not have an HTTP PUSH?

9 MR. WHITT: Objection, form.

10 THE WITNESS: 1.1 did not have the
11 particular implementation of PUSH request that's on
12 paragraph 8 or Section 8.2 of this document in
13 Exhibit 4, but I think I've already -- the concept
14 of pushing information with the ad example I gave
15 earlier I believe was already there.

16 BY MR. IYER:

17 Q Other than the ad example, do you have any
18 example of a file being pushed without a request
19 using HTTP Version 1?

20 A Yes, viruses. I remember at that time you
21 went to a web page and you ended up with a virus on
22 your device. I never asked for the virus. So
23 that's analogous to an ad, something I did not ask
24 for comes from the server.

25 Q So the server is the agent that is pushing

1 the virus? Is that your --

2 A Absolutely.

3 Q And a virus would be an example of a file
4 that is pushed?

5 A It could be encapsulated in a file that is
6 pushed, yes.

7 Q So HTTPS -- HTTP would take a virus,
8 encapsulate in a file and push to the third device?

9 MR. WHITT: Objection, form.

10 THE WITNESS: What do you mean by third
11 device here? Are we talking --

12 BY MR. IYER:

13 Q To a third device according to --

14 A The claim doesn't require HTTP, just to make
15 that very clear.

16 Q No, in your example that you cite to arrive
17 at claim 1 being obvious?

18 MR. WHITT: Objection, form.

19 THE WITNESS: Well, I would say yes, back in
20 the day, viruses got moved through the web when I
21 didn't request it specifically.

22 MR. IYER: I think it's about 12:22.

23 Counsel, if you -- you said you had a phone call
24 around this time so if you want to take a break,
25 it's lunchtime for us. I'm not sure in the West

1 Coast, it could be late breakfast time or something.

2 MR. WHITT: I'm on the East Coast as well.

3 I think actually all of us are on the eastern time
4 zone, I think. So is it a good time for lunch?

5 MR. IYER: Yeah. I mean, you had a call so
6 I don't want to deprive you of that opportunity and
7 add the lunch.

8 MR. WHITT: That works.

9 MR. IYER: What time would you like? It's
10 12:22 or so.

11 MR. WHITT: Do you want to come back at 1:15
12 eastern?

13 MR. IYER: Yeah, that's fine with us.

14 MR. WHITT: Okay.

15 MR. IYER: All right. Dr. Balakrishnan, we
16 can regroup at 1:15 which should be 10:15 for you.

17 THE WITNESS: No, I'm on eastern time.

18 MR. IYER: Oh, you're on eastern time.
19 Sorry. So 1:15 let's regroup.

20 VIDEOGRAPHER: Stand by. The time is
21 12:22 p.m. and we're going off the record.

22 (Whereupon, the deposition in the
23 above-entitled cause was recessed
24 to 1:16 p.m. this date.)
25

1 A F T E R N O O N S E S S I O N

2 VIDEOGRAPHER: The time is 1:16 p.m. and
3 we're back on record.

4 EXAMINATION (resumed)

5 BY MR. IYER:

6 Q All right. We can proceed when everybody
7 else is ready.

8 A I'm ready.

9 Q So are we good to go?

10 MR. WHITT: Let's go back on the record,
11 yeah.

12 BY MR. IYER:

13 Q So Dr. Balakrishnan, are you familiar with
14 Box's product?

15 MR. WHITT: Objection, form.

16 THE WITNESS: Which product?

17 BY MR. IYER:

18 Q The product that -- its file management
19 product.

20 MR. WHITT: Objection, form.

21 THE WITNESS: If you're talking about the --
22 what's available online as -- it's a service, I'm
23 familiar as a -- how do I put this -- as a lay user
24 of it, but I haven't investigated the product as
25 part of this case.

1 BY MR. IYER:

2 Q What do you know about the product? To the
3 extent -- I understand you haven't investigated for
4 this case, but what do you know about that?

5 MR. WHITT: Can I just have a standing
6 objection to form and scope on this line of
7 questioning, counsel? Is that okay?

8 MR. IYER: You've stated your objection on
9 record, but please answer.

10 THE WITNESS: So can I go ahead and answer?

11 MR. WHITT: Yes.

12 BY MR. IYER:

13 Q You are required to answer. It's not a
14 privilege issue.

15 A Okay. Thank you. Just wanted to make sure
16 I'm not talking over any of you guys.

17 So at a very high level, again I have not
18 investigated it as part of this case. I haven't
19 looked at the internals of the system and how it
20 operates. As a user, I've used the Box and Dropbox
21 products -- I'm not going to say products, I'm going
22 to say the service -- to upload files and download
23 files in various instances when I collaborate with
24 colleagues or with clients.

25 Q So have you used a Box or Dropbox product

1 using multiple devices?

2 MR. WHITT: Objection, form.

3 THE WITNESS: Multiple of my own devices?

4 BY MR. IYER:

5 Q Yes.

6 A Yes. I mean, to the extent that I've logged
7 in or downloaded things from let's say my phone or
8 my laptop or my desktop machines, yes.

9 Q So have you made changes or modified your
10 files in one device within the Box software?

11 A When you say modified the file, to the
12 extent that I've uploaded a new file to override a
13 previously existing file, yes, with the same name.
14 So I have a file called A.doc, I've updated with a
15 new file called A.doc that has some uploads in it,
16 so in that sense it is modifying.

17 Q So when you uploaded the new file, have you
18 downloaded or have you received that same file at
19 your second device?

20 A I don't recall if I've encountered that
21 scenario with a Box or Dropbox software. I may
22 have, but I don't recall specifics.

23 Q Were you asked to look at Box and Dropbox
24 products in connection with preparation for this --
25 these declarations that you filed in this case?

1 MR. WHITT: I'm going to object to the
2 extent it seeks attorney work product and mental
3 impressions of attorneys. You can answer with
4 respect to the content that's in your declarations
5 and your opinions in these IPRs.

6 THE WITNESS: Sorry. I've got to think a
7 bit more about how to answer that given that
8 instruction. I would say I haven't provided any
9 opinions in that regard in either declaration.

10 BY MR. IYER:

11 Q Have you reviewed the products?

12 MR. WHITT: Objection, form. Objection to
13 the extent it calls for attorney work product.

14 THE WITNESS: Should I answer or no?

15 MR. WHITT: You can answer if you have
16 looked at any Box or Dropbox products in preparing
17 your opinions in these IPRs.

18 THE WITNESS: I did not. I just want to
19 clarify that answer. I did not specifically look at
20 it for preparation of these reports. But as I said
21 earlier, I have used Box and Dropbox products in my
22 regular day-to-day work.

23 BY MR. IYER:

24 Q Can you please go to paragraph 20 of your
25 declaration?

1 A The reply declaration?

2 Q Yeah. Exhibit 2.

3 A Give me one moment, please. Okay, I'm
4 there.

5 Q Can you review this paragraph just for
6 familiarity?

7 A Sure. Just give me a moment.

8 Q And can we upload Exhibit 4, which is --
9 yeah, Exhibit 7. So you could look at Exhibit 7 in
10 connection with paragraph 20.

11 (Balakrishnan Exhibit 7 marked for
12 identification.)

13 THE WITNESS: Okay. Yes, so I've reviewed
14 paragraph 20 and I have the Hepworth reference
15 Exhibit 7 open in front of me.

16 BY MR. IYER:

17 Q Okay. Your first sentence says, It was
18 well-known in the art to use HTTP to push updates
19 from server to client. Okay. And you cite to
20 Hepworth, page 26, lines 13 to 14.

21 A Yes.

22 Q Okay. So can we go to page 26 of Hepworth?

23 A I'm there.

24 Q Okay. You refer to lines 13 and 14?

25 A In part, yes.

1 Q Yes. So that sentence that we read from
2 your declaration, you cite to 26, lines 13 and 14?

3 A Yes.

4 Q Okay. So can you read the lines 13 and 14?

5 A Sure. It says, "However, the implementation
6 described herein uses HTTP to provide push-type
7 functionality based on a pull protocol." You want
8 me to continue or --

9 Q Just those two -- at the moment that's fine.

10 A Okay.

11 Q So that sentence says that push-type
12 functionality is based on a pull protocol. So
13 what's your understanding of that?

14 A What that is saying is using the pull
15 protocol of HTTP, the underlying pull protocol which
16 it subsequently says it can be looked at as a silent
17 pull to implement effectively push-type
18 functionality. And it says on the next sentence, in
19 operation, what may look to a user like a push is
20 actually a silent pull. So it's basically using the
21 underlying pull functionality to implement a push.

22 Q Okay. Read the next sentence of
23 paragraph 20 starting with "for example."

24 A Sorry, back to my declaration?

25 Q Yes.

1 A I was looking at -- sure. So this next line
2 of my paragraph 20 says, "For example, Hepworth
3 describes an embodiment in which calendar events or
4 updates may be pushed to a user's digital calendar,"
5 cites to Id. which is Hepworth 26:2-4.

6 Q Yeah. So can you refer back to Hepworth
7 page 26 and read what looks like the first two
8 sentences of the page? Can you read that?

9 A Sure. It says, "In this scenario, events or
10 updates are pushed to the user calendar 10. The
11 concept of pushed events may generally be based on
12 push protocols." Should I stop there?

13 Q Yeah. So what do you -- I mean, who is
14 pushing to whom in this sentence?

15 A This is events or updates are being pushed
16 to the user's calendar from a server or a system or
17 a calendar manager or whatever.

18 Q Okay. Can you read the next line?

19 A Sorry. It says, "This means that in
20 contrast to the World Wide Web, which is based on
21 pull protocols, in which the user browser must
22 request a web page before it is sent, push protocols
23 send the informational content to the user computer
24 automatically, typically based on information
25 prespecified by the user."

1 Q Right. So according to this sentence,
2 Hepworth takes the position that World Wide Web is
3 based on pull protocols and does not provide push
4 functionality?

5 MR. WHITT: Objection, form.

6 THE WITNESS: I don't agree with that
7 characterization. I think it says very clearly that
8 the World Wide Web is based on pull protocols. But
9 if you read the next sentences, it talks about how
10 using the pull protocols, you could implement
11 effectively push protocols. That's exactly what I
12 cited to and read earlier on when you started this
13 line of questioning.

14 BY MR. IYER:

15 Q Yeah. So from the first sentence and this
16 sentence, you agreed -- you agree that this is not
17 the same as server push as we saw in HTTP Version 2?

18 MR. WHITT: Objection, form.

19 THE WITNESS: If you are asking is it using
20 the same push -- server push commands or
21 implementation of HTTP 2, I would say no.

22 BY MR. IYER:

23 Q So the difference -- like you had mentioned
24 this difference before, so is that a specific
25 request is not made by the client device in HTTP

1 Version 2, whereas here it's based on a request?

2 MR. WHITT: Objection, form.

3 THE WITNESS: It depends on what you mean by
4 a request because you read line -- let me see 1 --
5 BY MR. IYER:

6 Q The must request?

7 A Even if you look at line -- line -- sorry,
8 not line 6. Line 8 of the Hepworth reference on
9 page 26 it says -- if you're starting on line 7,
10 push protocols send the informational content to the
11 user computer automatically, typically based on
12 information prespecified by the user.

13 So even if your only push protocol where
14 it's automatic, it's still based on some information
15 that has been provided by the user beforehand. So
16 there is a request at some level. But it's not that
17 clean-cut between a request and a push and a pull.
18 I think that's been my point throughout this whole
19 set of both declarations and both depositions.

20 Q So earlier before lunch you said that the
21 specified information that acts as a request is
22 something more than a mere connection request?

23 MR. WHITT: Objection, form.

24 THE WITNESS: For -- if you are requesting a
25 specific thing, yes.

1 BY MR. IYER:

2 Q And the next — you read the implementation
3 regarding HTTP, the first sentence in the second
4 paragraph, to mean that the HTTP also is being used
5 to provide push functionality based on a pull
6 protocol?

7 MR. WHITT: Objection, form.

8 THE WITNESS: That's what the document says
9 and that's how I meant it as well.

10 BY MR. IYER:

11 Q So the first paragraph and this sentence
12 together mean that World Wide Web and HTTP both
13 implement push only based on a pull protocol?

14 MR. WHITT: Objection, form.

15 BY MR. IYER:

16 Q At least as far as this reference is
17 concerned?

18 A As far as this reference is concerned, the
19 implementation is based on the pull protocol.

20 Q Is there any other protocol that you are
21 aware of from this time period which provides push
22 functionality, server push functionality as defined
23 in HTTP Version 2?

24 MR. WHITT: Objection, form.

25 THE WITNESS: A specific type of push that's

1 identified in Version 2 that we went over that's not
2 present in Version 1 or 1.1, that specifically?

3 BY MR. IYER:

4 Q Yeah. What I'm asking is is there any other
5 protocol that you are aware of which would provide
6 push functionality without resorting to the pull
7 protocol?

8 MR. WHITT: Objection, form.

9 THE WITNESS: Well, I think I've already
10 talked about the ad example and the virus example.

11 BY MR. IYER:

12 Q I'm talking about protocols. The www.HTTP,
13 other than that, are you aware of any protocol out
14 there that -- during this time period that provided
15 push functionality?

16 A Within HTTP?

17 Q Other than HTTP or World Wide Web? Those
18 two have been discussed.

19 A Absolutely. Back then, Unix allowed servers
20 to push information and that dates back to the
21 1970s. If you're talking about HTTP, that's a
22 different question. But if you're asking in
23 general, absolutely. Pushing, pulling and all of
24 that stuff was well-known in the art.

25 Q And is there any suggestion in Hepworth that

1 talks about push without resorting to a pull
2 protocol?

3 A In Hepworth?

4 Q In Hepworth, yeah.

5 A In Hepworth, I believe they rely on the
6 underlying pull protocol to implement push as I've
7 cited in my declaration.

8 Q Show me where you have talked about the push
9 functionality using a pull protocol in your
10 declaration. I mean, I'm assuming it's around
11 paragraph 20, if at all, it takes -- can you take a
12 look?

13 A So paragraph 20, paragraph 21 which talks
14 about the category subscription.

15 Q But you're saying the pull protocol, you say
16 that push is implemented using the pull protocol,
17 just like Hepworth suggests?

18 A 28 is talking about Hepworth, what Hepworth
19 -- I'm sorry. Maybe this is a miscommunication.

20 Q I'm asking in 20, all you're saying is the
21 event or updates may be pushed and then you're
22 citing to Hepworth.

23 A Right.

24 Q You're not explicitly saying that the push
25 is implemented using a pull protocol?

1 A Well, my cite to Hepworth is.

2 Q Okay. So you're citing. I'm asking is
3 there an explicit, you know, statement in your
4 declaration that says that the push is implemented
5 using the pull protocol?

6 A I think the cite is there, so I'm pointing
7 to something that is showing how it's implemented.
8 So I think that is explicit.

9 Q So are you suggesting that -- are you saying
10 that Hepworth, one reading Hepworth -- a person of
11 skill in the art reading Hepworth would understand a
12 push using a pull protocol based on what Hepworth is
13 suggesting?

14 A I think in part reading Hepworth, somebody
15 would understand -- a person of skill would
16 understand that here is a way, one way to implement
17 push protocols using the underlying pull protocol
18 and Hepworth provides examples, several examples of
19 that.

20 Q So the concept of push, pushing a file,
21 according to you would be obvious to a skilled
22 artisan in view of Hepworth?

23 A I think it would be obvious to a skilled
24 artisan even without Hepworth. This is basic
25 background knowledge and Hepworth is simply another

1 example. And I would note further I don't think
2 Hepworth -- later on in Hepworth it talks about
3 transferring data between client and server. I
4 think I cite to additional things. On page 17 of my
5 declaration, I cite various additional segments of
6 -- sorry, not segments -- sections of Hepworth or
7 statements in Hepworth where they describe
8 transferring data without details on how to
9 implement it which makes it clear that someone of
10 skill would have understood that the source of
11 functionality to do pulling and pushing is
12 well-known background information.

13 Q So your position is that if something is not
14 described, that in turn means that anyone can do it?

15 MR. WHITT: Objection, form.

16 THE WITNESS: Not as a general matter. But
17 in this situation, I've got a person of skill in the
18 art would bring their knowledge at that time frame
19 on computing and networking to bear. And I think I
20 have made it clear again and again that this is in
21 background knowledge to understand what pushing and
22 pulling is. So it's not just -- if you don't say it
23 specifically, you would know everything. But I'm
24 saying you would know these particular concepts
25 because it's standard stuff taught in our

1 undergraduate curriculums.

2 BY MR. IYER:

3 Q Ask you read paragraph 21.

4 A Of my report?

5 Q Yeah.

6 A Okay. You want me to read it into the
7 record?

8 Q No, no, no. You can review just for the
9 next questions.

10 A Okay, I've read paragraph 21 of my reply
11 declaration.

12 Q So in your paragraph -- in this paragraph 21
13 you cite to page 27, 19 through 21.

14 A I cite -- you're talking about the very
15 first sentence I cite to paragraph --

16 Q Yeah.

17 A Page 27, line 16 to I think it's page 29,
18 line 10, if I'm not mistaken. I think that's the
19 correct cite. Actually, sorry. Yeah, 27, line 16
20 is the start of the category subscription section of
21 Hepworth to 29:10.

22 Q Are you familiar with the term broadcast
23 push?

24 A As a general matter, yes.

25 Q Can you describe what a broadcast push is?

1 A As a very general matter, not tied to the
2 claims here, I would say where a system puts out
3 some data and any set of listening systems can
4 accept that data as it comes in.

5 Q So what would be a broadcast push different
6 from some other type of push?

7 A Well, again very generally and not tied to
8 the claims, not specific to the issues here, I would
9 say you could have a broadcast push where the
10 recipient devices have not initiated some kind of
11 original connection per se. There's always some
12 kind of connection. I have to say I'm connected to
13 the network, for example. But it may not be -- and
14 that question may not be specifically directed to a
15 particular recipient in the broadcast situation,
16 whereas a more -- a more targeted push may say I
17 want -- I want this thing to go to user X which is
18 more specific as opposed to going to every user who
19 is connected which would be typically more the
20 broadcast situation. Again, this is very, very high
21 generalities and not tied to the claims.

22 Q And on page 27 and 28, you talk about -- I
23 mean Hepworth talks about weather forecasts. That
24 would be an example of a broadcast push?

25 MR. WHITT: Objection, form.

1 THE WITNESS: In some ways, but in other
2 ways no because there is a subscription required.
3 So the user -- the recipient would have to say I
4 want to get this information and I want to, you
5 know, subscribe. I think it says here -- let's see
6 what -- subscription to weather forecast, for
7 example. Once a user has said I want this, it keeps
8 getting an updated feed as Hepworth talks about.

9 So it's not a completely broad broadcast.
10 That's probably a bad choice of words, but it's -- I
11 think this is more of a targeted broadcast based on
12 a request for it or an initiated request that I'm
13 subscribing to the service for this feed.

14 BY MR. IYER:

15 Q So the subscription is to all weather
16 information as opposed to a specific request for a
17 specific piece of data?

18 MR. WHITT: Objection, form.

19 BY MR. IYER:

20 Q Correct?

21 A Not necessarily. It could be saying I only
22 want weather for Toronto. So it all depends on what
23 you've subscribed to. Or it could be, could be give
24 me all weather information too. Hepworth is silent
25 on the scope of that and appropriately so because

1 it's giving the general example.

2 Q So so long as a subscription is generated,
3 the information is sent on periodic or whenever the
4 information is available? Am I right on that?

5 MR. WHITT: Objection, form.

6 THE WITNESS: In Hepworth?

7 BY MR. IYER:

8 Q Yeah.

9 MR. WHITT: Objection, form.

10 THE WITNESS: In Hepworth I think it says
11 once there is a subscription, it pushes data. It
12 also talks about removing old data. So it's not
13 just putting new data, it's also taking away data.
14 So I'll leave it at that.

15 BY MR. IYER:

16 Q So the server pushes data and removes old
17 data once a subscription is found in Hepworth, is
18 that right?

19 A In this particular example, sure. That's
20 one example, yes.

21 Q What other examples have you cited from
22 Hepworth illustrating push?

23 A Well, I talked about the calendar manager
24 earlier on. And then even in this -- in this
25 category subscription, it's not just weather. It

1 talks about concert listings, et cetera, et cetera.

2 Q Can you read the next two sentences starting
3 with Hepworth describes the functionality?

4 A So back in my declaration?

5 Q Yeah, paragraph 21.

6 A Got to find it. Are you talking somewhere
7 in the bottom part of page 17?

8 Q Yeah, after the block quote.

9 A So it says, "Hepworth describes this
10 functionality without providing" -- is that the
11 sentence?

12 Q Yeah, yeah.

13 A Do you want me to read it into the record?

14 Q Yeah, yeah.

15 A "Hepworth describes this functionality
16 without providing any detail as to how a POSA" --
17 person of skill in the art -- "would need to
18 implement it, making it clear that a POSA would have
19 understood the implementation of this sort of
20 functionality to be routine, well-understood,
21 conventional and within the background knowledge of
22 a POSA. "

23 Q And in the next sentence you say that -- you
24 kind of conclude that specifically in view of
25 Hepworth and other references described herein and

1 in your opening declaration, it would have been
2 obvious to implement functionality of pushing files
3 from a server to a client and replacing older
4 versions of files on the client with the new files.
5 Am I correct?

6 A I say that, yes. And I continue to talk
7 about what one of skill in the art would have known
8 to do citing even from the patent. And when I say
9 the patent, the patents-in-suit here, the '942
10 patent itself talks about it.

11 Q But you have not shown anything that
12 implements push without using a pull methodology?

13 MR. WHITT: Objection, form.

14 THE WITNESS: No, I disagree with that. I
15 think what I'm saying here is this is well-known to
16 one of skill in the art. In fact, the patent itself
17 -- and I cite this in paragraph 22 -- cited a
18 portion of the patent that says, for example, an
19 alternative to the approach, et cetera, et cetera,
20 to push modified files. So the patent itself is
21 saying this is known.

22 BY MR. IYER:

23 Q Can you please read the section which you're
24 citing from the patent?

25 A In paragraph 22?

1 Q Yeah, in paragraph 22. You can read the
2 second sentence, for example.

3 A "For example, as an alternative to the
4 approach described with reference to Figure 3,
5 wherein the transfer clients 310, 320 function to
6 push modified or created files to the synch
7 application 380, the synch application 380 may
8 instead function to periodically pull or otherwise
9 actively retrieve such files from the transfer
10 clients."

11 Q Okay. So what are the transfer clients 310
12 and 320? What would you read the claim limitation
13 on 310 and 320?

14 A Give me one second to bring up the patent
15 again. Well, I would say these are the clients that
16 are involved in moving data around.

17 Q Okay. So read that paragraph carefully.
18 The paragraph is talking about pushing data from the
19 client to the server 310 through 380. And 310 and
20 380 are clearly listed as — 310 and 380 is listed
21 as the server and 310 is listed as the client. Look
22 at Figure 3 if you want to have a reference.

23 A I'm looking at it.

24 Q 310 is a user device?

25 A Well, 380 is referred to as a

1 synchronization application.

2 Q Within the -- within the server because it's
3 the middle device?

4 A Sure. And my point with this citation, just
5 to make it very clear, is that the patent recognizes
6 that pushing and pulling is well-known. That's the
7 point I'm trying to make.

8 Q You're citing to client pushing to the
9 server in support of that and not -- and server
10 pulling data. But these do not stand for server
11 pushing data to the client?

12 A Oh, I disagree with that.

13 MR. WHITT: Objection, form.

14 THE WITNESS: I disagree with that. The
15 notion of pushing and pulling can happen in both
16 directions. And Hepworth is giving an example right
17 there that -- we've already gone through this where
18 it's showing how you can implement pushing using
19 pulling. And this is all stuff I'm citing to say
20 this is well-known in the art. I don't think it's
21 limiting it to clients going -- in a particular
22 example it may go from one direction to the other
23 direction, but it doesn't matter. But one doesn't
24 understand the general issue because what I'm trying
25 -- the point I'm trying to make in these paragraphs

1 is that because the very fact that Hepworth in the
2 '942 and the '561 patents talk about push and pull
3 very generally without elaborating on each
4 implementation is because these are well-known,
5 routine, and conventional designs. It's not
6 something that needs to be gone into in great
7 excruciating detail because it's known. That's the
8 point I'm trying to make in these -- in these
9 paragraphs.

10 BY MR. IYER:

11 Q So but coming back to this paragraph, this
12 paragraph the way it is written talks about pushing
13 data from the client to the server or the server
14 pulling data from the client. It's not talking
15 about server pushing data to the client?

16 A It doesn't -- it doesn't say it's not
17 pushing data to the client. It's giving an example
18 of pushing data from the client to the server. But
19 without giving any detail, it's well-understood that
20 someone of skill would understand how to do pushing
21 and pulling. That's the point I'm trying to make.

22 Q You cited this paragraph specifically with
23 an example that explicitly talks about client
24 pushing data to the server or server pulling data
25 from the client. That's the example that you have

1 cited. And you are again looking at absence of a
2 disclosure to mean the opposite of what is
3 disclosed.

4 MR. WHITT: Objection, form.

5 THE WITNESS: I disagree with that. It's
6 not an absence of a disclosure. It's giving an
7 example of one thing. It doesn't mean that a person
8 of skill in the art would not understand the general
9 concept. And that's exactly the point I'm trying to
10 make in this paragraph. I say like Hepworth, the
11 '942 and '561 patents merely reference push and pull
12 without further elaborating on how to implement
13 either because a person of skill would have viewed
14 them as well-known, routine or conventional.

15 You don't need to explain something that's
16 well-known because it's well-known. So an example
17 is simply an example. I don't need the
18 counter-example to understand that it's well-known.
19 So it's not the way you are characterizing it as
20 absence of disclosure. It is a disclosure -- it's
21 an example. The disclosure gives you an example to
22 one of skill in the art pushing and pulling.
23 Well-known, I got this. And that's in the second
24 here.

25 ///

1 BY MR. IYER:

2 Q So again going back, you have explicitly
3 taken a paragraph and cited it for a proposition for
4 which the paragraph does not explicitly state?

5 MR. WHITT: Objection, form.

6 THE WITNESS: Again I disagree with that.
7 I've already given my answer multiple times on why I
8 am citing this paragraph and Hepworth.

9 BY MR. IYER:

10 Q Okay. Can you go to the next sentence which
11 starts with Hepworth further explains, after the
12 block quote, the first sentence.

13 A Sorry. Which paragraph are you looking at?

14 Q I'm in paragraph 21.

15 A You're back in 21, okay. Okay. I see that,
16 yeah.

17 Q What is XML?

18 A XML is a protocol, a type of file, file
19 format.

20 Q File format?

21 A Yes.

22 Q So do you say that any XML is a file?

23 A Well, it's a -- it's a file that has
24 instructions in it.

25 Q I'm not asking an XML. I'm asking about

1 XML.

2 A You mean the language itself is simply a
3 marker language for specifying particular types of
4 data.

5 Q So that is XML. And XML file, if I say that
6 XML file is a file that contains XML statements
7 formatted in the XML format, am I correct?

8 A I think that's one example, yes.

9 Q So just an XML command or instruction is not
10 an XML file?

11 MR. WHITT: Objection, form.

12 BY MR. IYER:

13 Q Am I right?

14 A Are you saying an XML rule in the language?
15 It's not necessarily -- yeah, it would have to be
16 saved in a file to become an XML file.

17 Q Okay. How is XML implemented?

18 MR. WHITT: Objection, form.

19 BY MR. IYER:

20 Q What is XML used for or and how it is
21 implemented?

22 MR. WHITT: Same objection.

23 THE WITNESS: It's a way to provide
24 structure for data at a very high level. It's says
25 here's the data in a particular structure so the

1 system reading it knows how to parse that data.

2 Parse as in p-a-r-s-e.

3 BY MR. IYER:

4 Q Would XML be a way of displaying information
5 on the screen in a web page?

6 MR. WHITT: Objection to form.

7 THE WITNESS: I would say HTML would
8 typically govern how information is displayed on a
9 web page, whereas XML governs or describes how the
10 data may be stored -- stored or moved around, the
11 structure of the underlying data.

12 BY MR. IYER:

13 Q What does XML stand for?

14 A It's something markup language. The X --

15 Q X --

16 A Extended or extensible or something like
17 that.

18 Q So extended markup language as compared to
19 HTML, which is hypertext markup language, is XML an
20 add-on or a further version of HTML?

21 A I haven't thought about that
22 characterization. That may be one way to
23 characterize it. I'm not sure if add-on is the
24 right -- I haven't considered that. I need more
25 time to think about how you would phrase that. I

1 haven't opined on that.

2 Q So when I say something -- some data is in
3 XML format, what would that mean?

4 A At a very high level, that just means that
5 the data is formatted using the structures or the
6 language of XML. That's all.

7 Q Does that mean that it is put in an XML
8 file?

9 A Sorry. You said that -- can you maybe ask
10 the question again?

11 Q Earlier I asked when something is in XML
12 format, what would that mean. And now I'm asking
13 based on your answer, whatever you answered, does
14 that mean that it has to be in an XML file or --

15 A It doesn't have to be. But if I have an XML
16 file, typically it would contain XML encoded
17 information.

18 Q So if you have a file, XML file, that would
19 have XML instructions or lines or code in it, am I
20 correct?

21 A It's not really code, but it's the XML
22 structured data. It's not code in the sense that it
23 doesn't -- it's not coding. It's not a programming
24 language if that's what you mean by code.

25 Q So would you send information in XML or

1 using HTTP PUT or HTTP POST?

2 MR. WHITT: Objection, form.

3 THE WITNESS: I don't see why not. It's
4 just data. I haven't considered that question in
5 the detail you're asking. I don't think it's
6 relevant to the claims, but PUT and PUSH -- sorry,
7 PUT and POST data, XML could be data so you know,
8 it's a yes as a general matter. But I haven't
9 looked into the specifics of that and I have not
10 provided an opinion on that.

11 BY MR. IYER:

12 Q Earlier you mentioned that you looked at --
13 you know, you're generally familiar with Box and
14 Dropbox products. Do you have any insight into use
15 of XML to transfer data in Box and Dropbox?

16 MR. WHITT: Objection, form.

17 THE WITNESS: I have not looked into that.
18 I have no opinion on that right now.

19 BY MR. IYER:

20 Q Let me ask another question. Do you have an
21 insight into how data is transferred in Box and/or
22 Dropbox?

23 MR. WHITT: Objection, form.

24 THE WITNESS: I have not looked into that
25 and I'm not providing an opinion. I would say I'm

1 not providing an opinion at this time. If at a
2 later time I'm asked to look at it for this case, I
3 reserve my comments to that at that time.

4 BY MR. IYER:

5 Q Going back to Hepworth itself, is there any
6 reference to data being transferred in Hepworth
7 where the data is a file?

8 MR. WHITT: Objection, form.

9 THE WITNESS: So I haven't looked into that
10 question so if you want me -- I'm going to have
11 to --

12 BY MR. IYER:

13 Q Yeah.

14 A I don't think I can give you an answer
15 offhand because I have to study this again because I
16 haven't looked at that question in my -- in
17 preparing my report. And I don't think I just want
18 to skim this document right now because it seems to
19 be a question that -- it's not something I looked
20 into for this.

21 Q Okay. We've gone for close to an hour. We
22 can maybe take a bio break and, you know, you can
23 take the time, a few minutes if you want to look at
24 Hepworth, feel free to. So we can regroup in 10,
25 15 minutes.

1 MR. WHITT: I'm just going to state for the
2 record, you know, if you want him to review things
3 that take a lot of time, I'd prefer to take that on
4 the record. If you're planning to use all seven
5 hours of the deposition -- is that your intention,
6 counsel?

7 MR. IYER: I may not need all seven, but
8 offhand I don't want to rule that out.

9 MR. WHITT: I mean I'd prefer for him to
10 refer things on the record then.

11 MR. IYER: Then let's get back in 10 minutes
12 after a bio break and then continue.

13 MR. WHITT: Sounds good.

14 VIDEOGRAPHER: Stand by. The time is
15 2:08 p.m. and we're going off the record.

16 (Short recess.)

17 VIDEOGRAPHER: The time is 2:20 p.m. and
18 we're back on the record.

19 BY MR. IYER:

20 Q We were discussing if you wanted to take
21 some time to review Hepworth. So go ahead.

22 A Sorry. What was the question again?

23 Q Can we go back? Can we go back and check on
24 the record what the question was?

25 (Record read as requested.)

1 THE WITNESS: Okay. I would say yes.

2 BY MR. IYER:

3 Q Can you point out where?

4 A Well, first of all, I think on page 12 it
5 says the database is implemented as an XML-based
6 store. In other words -- or it says, i.e., as an
7 XML file or collection of files. But further down
8 where it talks about the calendar, if I look at
9 page 18, it says the browser -- sorry, page 18,
10 line 16, it says, the browser then launches the
11 calendar manager, passing it a reference to a file
12 containing the XML. And further down that same page
13 it says, the event data is extracted from the XML
14 file. So it's clearly contemplating moving data
15 around as files to the extent that's all that's put
16 because in the end a file is simply data.

17 Q Let's go step-by-step. You first cite to
18 abstract of Hepworth. When you're -- Hepworth
19 further explains that among the data that may be
20 transferred --

21 A Where are you now? Sorry to interrupt.

22 Q We are on paragraph 21 of your declaration.

23 A Okay. I see where you're at.

24 Q So let's look at the abstract and go line by
25 line where you say it can be XML file. You cited

1 these for the proposition that an XML file is
2 transferred because you've -- in your declaration
3 you put it in quote. So show me in the abstract
4 where XML file is transferred because you've cited
5 that.

6 A Well, it says the browser downloads the XML
7 response. So that XML response -- when you download
8 something, it's downloading a file. That's the -- a
9 person of skill would read it as downloading the
10 file.

11 Q So any data is file, that's what you're
12 saying?

13 A I'm saying the file is data. So if you're
14 talking about data, it could be a file.

15 Q It could be a file. But where is it showing
16 that when XML is downloaded, an XML file is
17 download?

18 A I'm saying it's downloading the XML
19 response. So as a person of skill in the art
20 reading this, it's entirely reasonable and, in fact,
21 expected that it would -- when you download it, you
22 download -- typically you download a file. You
23 don't just download snippets of data.

24 Q Let's go to page 6, line 22.

25 A Okay.

1 Q Okay. In that sentence, is there a
2 reference to XML file?

3 A In line 22 it's talking about a calendar
4 entry generator generates an XML-based HTTP
5 response. Again, one of -- one of skill in the art
6 reading that would go XML, it's almost certainly an
7 XML file. It doesn't have to be, but it's certainly
8 one reasonable interpretation as a skilled person
9 reading this.

10 Q So your sentence before is that --

11 A Sorry. I'm sorry. Just to complete that
12 answer, if you keep going to the next page of that
13 same paragraph, it says using the file association.
14 So right there is another indication that it's using
15 .XML as the association which indicates a file to
16 one of skill in the art. And I'm sorry to have
17 interrupted you.

18 Q The next page simply says the browser
19 downloads the XML response and the XML response
20 triggers the browser to launch the calendar manager.
21 It doesn't say the XML response is an XML file. And
22 your declaration specifically puts it in parentheses
23 clearly intending to misread the suggestions from
24 Hepworth.

25 MR. WHITT: Objection.

1 THE WITNESS: I completely disagree with
2 that characterization that I intend to mislead.
3 That's just wrong. What I've just said is one
4 reading these disclosures in Hepworth can reasonably
5 expect that these are XML files.

6 BY MR. IYER:

7 Q But the explicit statement doesn't say that.
8 There's no XML file reference to --

9 A I disagree. I think if you want the word
10 file I would say, yeah, the word file is not there.
11 But when it says file association in line type, one
12 of skill in the art reading this would go, yeah,
13 that's an XML file.

14 Q But where is the file association reference
15 to the XML data?

16 A What else would it be referencing if it's
17 the file association. XML responds to launch using
18 the file association that is about that XML file
19 because it's downloading the XML response. I think
20 you're looking for things that one of skill in the
21 art would not be looking for. Maybe lawyers look
22 for that, but skilled people don't look for those
23 kinds of things when you read this.

24 Q Can we go to the next reference that is on
25 page 12, lines 11 through 12.

1 A Yeah, I'm there.

2 Q So that particular line just says that
3 database is implemented as an XML file or collection
4 of files. That sentence does not stand for an XML
5 file being transferred?

6 MR. WHITT: Objection, form.

7 THE WITNESS: Well, the database is storing
8 XML files and information from that database is
9 subsequently being extracted and transferred. I
10 think one of skill in the art would read that to
11 definitely mean that XML files are being
12 transferred.

13 BY MR. IYER:

14 Q Again continuing, page 14, 3 through 7, show
15 me where XML file is mentioned.

16 A So it says XML-based HTTP responses. And
17 again, one of skill in the art would read this
18 including XML files.

19 Q Go to page 17, lines 9 through 11.

20 A Yeah, so this one says -- sorry. Is there a
21 question?

22 Q I mean, the lines 9 through 11 says the
23 contents is XML-based. It doesn't say file. It's
24 an XML file.

25 A Again, reading this as one of skill in the

1 art and reading what is the content, the content's
2 coming from these databases that we already talked
3 about earlier, there was disclosure that these are
4 stored as XML files. One of skill in the art would
5 read this as, yeah, this would include XML files.

6 Q Go to the next reference, page 18, I think
7 11 through 19. Yeah, page 18, 14 through 19.

8 A Yes. And the question again? It's the same
9 question?

10 Q Yeah.

11 A Well, in this example, again HTTP response,
12 it talks about the response comprising a particular
13 file MIME type, which means file type, and passes it
14 a reference to a file containing the XML. So that's
15 an XML file.

16 Q It's a -- it talks about a reference to a
17 file. There's no -- there's no disclosure of the
18 data being transferred being an XML file.

19 A If it's passing a reference to a file
20 containing the XML, what would the data be
21 transferred that's not that file. I think one of
22 skill in the art reading this would definitely
23 100 percent see that it's an XML file being moved
24 around.

25 Q So when a reference to a file is

1 transferred, it automatically means that the whole
2 file is transferred? Is that what you said?

3 MR. WHITT: Objection.

4 THE WITNESS: Well, no, but read the rest of
5 the paragraph. It says the calendar manager then
6 extracts the information it requires. In order to
7 do that, it would have to transfer the file or read
8 the file or read parts of the file.

9 BY MR. IYER:

10 Q Right. Read parts of the file or extract
11 information from the file and it is transferred. It
12 doesn't say that the file is transferred.

13 A Well, you just said that it's transferring
14 reading -- describing information and so that is the
15 file that's being transferred.

16 Q So when you extract information from a file
17 and it is transferred and then too using an HTTP PUT
18 or POST, that is not the file that's being
19 transferred?

20 A It's certainly a portion of the file at
21 least. And one of the skill in the art would
22 understand that it could be the entirety of the
23 file. So I think you're overly narrowly trying to
24 parse this. And one of skill in the art would
25 100 percent see this as moving XML files around.

1 Q Where do you get that 100 percent figure?

2 A Because the I'm one of skill in the art and
3 I'm reading this and I'm going, how else would I
4 read this.

5 Q Let's go to page 19, 22 on, the next
6 reference.

7 A Yes. So I'll give you the same answer. One
8 of skill in the art reading this would say, yeah,
9 this is an XML. It would include or could include
10 an XML file being transferred.

11 Q So it says an XML-based HTTP entity body is
12 used. Doesn't say XML file?

13 A The word file is not there, but one of skill
14 in the art would understand that this could include
15 or certainly encompass the notion of an XML file.

16 Q And the next sentence simply talks about
17 again about XML entity body. It doesn't talk about
18 XML file.

19 A I disagree. One of skill in the art reading
20 this would understand it to encompass XML files.

21 Q Go to the next one. So it talks about the
22 steps 1, 2, 3. And the only reference to XML is an
23 XML response and XML response, there's no equivalent
24 drawn to XML file.

25 A I disagree with that for the same reasons

1 I've already explained in earlier answers.

2 Q Lastly, page 23, 8 through 13.

3 A Yeah, I'm there.

4 Q So --

5 A I'll give you the same answer.

6 Q So it says the browser downloads an XML
7 response. It doesn't say XML file?

8 A Again, I disagree that one of skill in the
9 art would read this as encompassing an XML file,
10 especially in the context of downloading something.

11 Q Okay. Let's go back to paragraph 20.

12 A Sorry, of my report?

13 Q Of your declaration.

14 A Okay.

15 Q And --

16 A Okay, I'm there.

17 Q And also look at, you know, Figure 1 of
18 Hepworth. Can you briefly explain how this figure
19 shows a file being pushed from a server to a client
20 like you have claimed it to suggest?

21 MR. WHITT: Objection, form.

22 THE WITNESS: I think we've already talked
23 about this earlier, but so this has to do with the
24 calendar manager doing synchronization process
25 connecting intervals and getting the events into to

1 the text here.

2 BY MR. IYER:

3 Q So it goes by step. Okay. So in the middle
4 of figure -- you say -- I mean the figure says
5 server side. And at the bottom of the figure, there
6 is a Box that says computer. And what are you
7 construing the server side to be and a computer to
8 be the situation?

9 A As an example, I would say the main source
10 is in the bigger box in the middle which has the
11 synch manager highlighted in blue and the computer
12 which has the calendar and the calendar manager
13 highlighted in yellow.

14 Q So what are you trying to show in this
15 figure of calendar updates to a user's digital
16 calendar? So what is updated if the data was in the
17 calendar? How do you construe that to be a file?

18 MR. WHITT: Objection, form.

19 THE WITNESS: The data in the calendar is
20 being brought through as a score -- sorry, not
21 scores. This is calendar. Why would that not be a
22 file? Calendar data, we all are familiar with this.
23 You get files on you put it in your calendar as a --
24 as an appointment, for example.

25 ///

1 BY MR. IYER:

2 Q So are you talking about a calendar event --
3 I mean calendar event being a file?

4 A One of skill in the art would certainly see
5 that as encompassing the possibility of a file, yes.

6 Q When is -- show me an example of how a
7 calendar event can be a full file.

8 A Well, a calendar event is a bunch of data.
9 It's encoded in a particular way and it's sent as --
10 in some structure and that structure could certainly
11 be a file. I mean we get these -- you know, today
12 when I got the calendar event from Mr. Whitt for
13 this deposition, it was sent to me as a file.

14 Q The event --

15 A One of skill in the art would certainly
16 understand events is implementable as a file or the
17 data could be transferred as a form.

18 Q So again you're going back to this
19 proposition that in software, you can implement
20 anything and everything and therefore, everything is
21 obvious? Is that your position?

22 MR. WHITT: Objection, form.

23 THE WITNESS: I think you are
24 mischaracterizing my position. I'm saying in this
25 situation where I'm transferring data, particular

1 types of data, one of skill in the art would
2 understand that those types of data, like calendar
3 events, would be sent around as files. And it would
4 certainly be part of the knowledge of one of skill
5 in the art reading something like this. I would see
6 it as yes, a file could be moved around as part of
7 the event.

8 BY MR. IYER:

9 Q You haven't given an example of when an
10 event would be a file.

11 A I just gave you an example of my deposition
12 -- my deposition calendar event came as a file.

13 Q When you receive an email with a calendar
14 event, that calendar event comes as a file, is that
15 your deposition -- is that your position?

16 A In my example, yes, it came in as a file.

17 Q So can you describe the sequence as in
18 Figure 1, and you may refer to Hepworth, event
19 updating on page 22. Sorry, wait a minute. I take
20 that back. I'm losing my reference. Yeah, can you
21 go back to page 21 of Hepworth and describe the
22 sequence of events and correlate to how that
23 corresponds to a file being pushed from a server to
24 a client?

25 MR. WHITT: Objection, form.

1 THE WITNESS: So on page -- where are we
2 talking about here?

3 BY MR. IYER:

4 Q 21 of Hepworth.

5 A So now this is talking about Figure 4,
6 right?

7 Q Yeah.

8 A Okay. So I'm just going to read it. It
9 says, the steps involved as illustrated in Figure 4,
10 user clicks on the hyperlinks the event on the
11 partner web page. And a hyperlink is typically a
12 link to a file on a website somewhere. And then it
13 goes to the next instance.

14 Q Sorry. Why do you assume that hyperlink
15 links to a file?

16 A I don't assume it. I'm saying typically
17 hyperlinks are links to a file, to a web file
18 somewhere, a website somewhere and that's a file.
19 You can go on the web, go on the browser and click
20 on something. It goes to a -- it goes to an HTML
21 file somewhere. And that's a file.

22 Q And then in step 2, continue in step 2?

23 A It says, "The calendar entry generator 30
24 transmits details of the events to the browser in
25 the form of an XML response marked with the

1 appropriate content type." And that's an XML
2 response and again, one of skill in the art would
3 understand XML response would encompass including an
4 XML file, particularly when it says what the content
5 type is, file type.

6 And then I go on to step 3. It says -- in
7 here it says launches the calendar manager using
8 standard file association indicating that files are
9 involved passing it the XML response. So and then
10 it says, which is the event to be added to the
11 calendar. So all of these one of skill in the art
12 would understand when it's talking about file
13 associations, XML, that these events would encompass
14 adding it as a file.

15 Q So you're saying that, you know, in a
16 calendar, an entry when it's updated that
17 essentially the data is transferred to a file?

18 A I'm saying transferring as a file is part of
19 what one of skill in the art would understand could
20 be used in that situation.

21 Q So going back to the basic definition of
22 push and pull, can that term -- can the terms push
23 and pull be used interchangeably?

24 A Depending on the context.

25 Q What context --

1 A Yes.

2 Q -- which would be considered a pull?

3 A It depends on which direction you're looking
4 at it. So --

5 Q Give me --

6 A If I'm pushing something from A to B -- if
7 I'm pushing something from A to B, in effect, B is
8 receiving that thing. And if it had requested it in
9 some fashion, some people -- some skilled in the art
10 people would say that's effectively I'm pulling it,
11 pulling it periodically. And we talked about this.
12 Was it Hepworth? Yeah, maybe it was Hepworth where
13 you set up this link and you get this periodic
14 update basically doing push functionality using pull
15 implementations. So it depends on the context. A
16 lot of these things are very context dependent.

17 Q So is it correct to say that the entity
18 making the request is a factor in determining
19 whether it's a push or a pull?

20 MR. WHITT: Objection, form.

21 THE WITNESS: Depending. Depending on the
22 context it could have -- could be a factor; again,
23 very context dependent.

24 BY MR. IYER:

25 Q In what context push would be considered a

1 pull based on the entity making the request? Well,
2 let me rephrase it.

3 Is there any other way in which a pull would
4 be considered a push or the other way around other
5 than the entity making the request?

6 A I'm not sure I completely understand the
7 question, but I can see a situation where I could
8 have pushes that are not really requested. We
9 talked about broadcast pushes earlier as an example
10 where just because I'm on the network, I may receive
11 a bunch of broadcast information. And beyond
12 connecting to the network, I have not explicitly
13 said I want any of this information. So that's a
14 push in my examples earlier of ads or viruses and
15 another example where stuff is pushed without the
16 recipient's consent or certainly without the
17 recipient's request. When it's convenient, could we
18 get a five-minute bio break?

19 MR. IYER: Sure, I don't want to hold you on
20 up. Please go ahead. Let's take a break and
21 regroup in 10.

22 VIDEOGRAPHER: Stand by. The time is
23 2:51 p.m. and we're going off the record.

24 (Short recess.)

25 VIDEOGRAPHER: The time is 3:01 p.m. and

1 we're back on record.

2 BY MR. IYER:

3 Q Can you look at paragraph 23 of your
4 declaration?

5 A Okay, I'm there.

6 Q In that you cite to a new reference, Wong.
7 And if you want to review Wong, I can get it
8 updated.

9 A Sure. Let's put it on the chat if you don't
10 mind.

11 Q Can you upload Exhibit 6?

12 (Balakrishnan Exhibit 6 marked for
13 identification.)

14 THE WITNESS: Sorry, hang on. Talking about
15 file transfers. Just give me one second. Okay,
16 I've got it. Okay, I have Wong. And I have
17 paragraph 23 of my reply declaration open.

18 BY MR. IYER:

19 Q Okay. You refer to paragraph -- I mean
20 column 1, 19 through 24 of Wong. And you mention
21 that conventional products focusing on delivering
22 breaking news and information to user desktops
23 automatically, instead of the user constantly
24 surfing multiple websites for blah, blah, blah, and
25 many incorporate push functionality into their

1 products. Okay.

2 So what do you refer these products to be in
3 relation to say the claims in question?

4 A I'm not sure I understand the question.

5 Q I mean the products here refer to a client
6 or a server or user machine?

7 A Well, here they're talking about products
8 like, for example, Microsoft and Netscape having
9 push clients, but also being able to push software
10 -- using push to distribute software. So that's
11 coming from a server to clients. And I think I cite
12 this later on in paragraph -- at the end of
13 paragraph 23, they talk about -- Wong talking about
14 distributing software. So that's from Microsoft's
15 service, for example, pushing software updates
16 across the network to ultimately the users, their
17 clients.

18 So this clearly talks about doing both,
19 pushing from clients to servers, servers to clients.
20 And my main point that I'm trying to drive home with
21 this reference is that knowing how to push things
22 from A to B was a well-known thing as of that
23 timeframe. That's the purpose of citing to Wong.

24 Q What paragraph in Wong do you refer to that
25 specifically talks about files being pushed?

1 A Well, when it talks about software being
2 pushed, what is software is -- it's a file.

3 Q Where is it talking about software being
4 pushed?

5 A So column -- I think I cite to column 2,
6 line 18. So let's go there. Column -- okay, so
7 this is an example, seamlessly deliver software
8 updates. I mean, this is very clear, software
9 updates are pretty much always a file being sent as
10 an update. This is absolutely well-known.

11 Q So --

12 A And we could keep going on. And on line 35,
13 for example, files tend to be very large and the
14 delivery of these files must be well-managed.
15 Incremental downloading -- blah, blah, blah --
16 software -- this is all talking about files being
17 sent.

18 Q So do you read anything in Wong that shows
19 files originating from a client device being sent to
20 a second client device through a server?

21 A Well, yes. I think I cite right from the
22 start -- where is that, column 1, line 19 to 24 as
23 just a starting point. Talks about synchronization
24 of local copies of files on multiple mobile users'
25 client computer hard disk to the current versions.

1 And that's really just talking about I've got
2 Client A, Client B and I want to keep things
3 synchronizing. This is synchronization between --
4 (Cross-talk.)

5 BY MR. IYER:

6 Q Which section are you citing?

7 A I'm looking right now at column 1 as a
8 starting point and I'm talking about citing starting
9 from line -- sorry, column 1, line 19 onwards talks
10 about synchronization of local copies of files on
11 multiple mobile client computer disks to the current
12 versions on the network drives. And I have
13 Client A, Client B is keeping everything
14 synchronized. So this is client to network and to
15 other clients.

16 Q It talks about synchronizing what's in the
17 server versus what's up on client device. It's not
18 talking about Client A with Client B of -- you know,
19 the same file synchronized between Client A and
20 Client B?

21 A I disagree. I think I would read this as
22 absolutely about synchronizing. The whole point of
23 keeping things synchronized is I have multiple
24 clients and I want to keep all the files
25 synchronized. This is what A, B, C, D, keeping

1 things in sync with the server.

2 Q Show me exactly where A, B, C, D and
3 Client A and Client B having associated with the
4 same user and the file being synchronized between
5 that?

6 MR. WHITT: Objection, form.

7 THE WITNESS: Well, I'm reading this
8 paragraph right here. It says the invention
9 involves a synchronization of local copies of files
10 on multiple mobile users' client computer hard
11 disks. So that's the whole point. It's multiple of
12 these. It's not just one client to the server.
13 It's multiple of these connected to each other.

14 BY MR. IYER:

15 Q So the last part says, current version of
16 the files on a network, not file on one device being
17 synchronized with another device?

18 A No. If I -- one of the multiple client
19 computers is synchronized with the networks and the
20 other client computer's also synchronized with the
21 network, then both clients also synchronize based on
22 logic from reading this -- just this sentence.

23 Q Go to paragraph 25.

24 A Of Wong?

25 Q No, of your declaration.

1 A Okay, I'm there.

2 Q So in this paragraph you refer to more
3 Moromisato.

4 A Moromisato, yes.

5 Q So do you agree that Moromisato is referring
6 to push/pull in the context of peer-to-peer
7 implementation?

8 MR. WHITT: Objection, form.

9 THE WITNESS: I would say that Moromisato's
10 discussion appears in the context of a peer-to-peer
11 implementation. And I think I cite to -- I cite to
12 something in Moromisato in that regard. And then I
13 -- I further say one of skill in the art would have
14 understood, especially in view of other references
15 like Hepworth, that this could be from a server --
16 to and from a server and to and from a client as
17 well. But yes, I think a simple answer to your
18 question is yes and I discuss that as well.

19 BY MR. IYER:

20 Q So you're saying Moromisato in view of
21 Hepworth, you could implement push or pull to send
22 data from a server to a client? So you're reading
23 Moromisato in view of Hepworth in this -- in this
24 reference to Moromisato?

25 A With regard to this push and pull

1 functionality, yes.

2 Q And likewise in paragraph 24, you are
3 referring to Wong and basically suggesting that
4 push-based applications as taught in Wong would have
5 been obvious?

6 A Oh, absolutely. Wong was -- predates the
7 2008 date that we are concerned with in this case
8 and, yes, absolutely.

9 Q So going back to HTTP protocol as it existed
10 in Version 1 versus Version 2, if push-based
11 applications are that well-known and obvious, why
12 was it not included in the HTTP Version 1?

13 MR. WHITT: Objection, form.

14 THE WITNESS: I think that's something you
15 ought to ask the people who implemented HTTP
16 Version 1. They clearly saw that omission later on
17 and fixed it in Version 2. But as I've also
18 testified earlier, Version 1 did support pushing of
19 certain things like ads and viruses as I've already
20 talked about. So we can go over that again if you
21 want. I think I've covered that again and again.

22 BY MR. IYER:

23 Q You agree that it didn't have a push
24 functionality. It was implementing push using pull?

25 A I did not agree to that as far as the ads

1 and viruses were concerned. That was with regards
2 to I think -- was it Hepworth?

3 Q Going back to the ads and viruses, do ads
4 and viruses get pushed to a specific user?

5 A Yes. Well, to a specific connection. That
6 connection may be associated to one or more users.

7 Q Is that a broadcast push?

8 A It could be a broadcast push. It could also
9 be broadcast through if you go to a particular
10 website.

11 Q So based on Wong, you conclude on
12 paragraph 24 that a push-based application, as
13 suggested by Wong, is an obvious alternative to HTTP
14 client-server. That's what you're saying in
15 paragraph 24, am I correct?

16 A Not necessarily as taught by Wong, but
17 push-based applications in general, of which Wong is
18 one example, yes.

19 Q In this paragraph you're talking about as
20 taught in Wong, so you're talking about suggestions
21 of Wong. Am I correct?

22 A In the start of the paragraph and then using
23 the suggestions of Wong as bolstering my assertion
24 that a person of skill would view push-based
25 applications as an obvious alternative to HTTPS or

1 HTTP for file synchronization.

2 Q Can you look at paragraph 26?

3 A Yes, I'm there.

4 Q Yeah. You're referring to Shenoy
5 declaration paragraph 32?

6 A Yes.

7 Q Can you look at paragraph 32 of Shenoy?

8 A Hang on. I've got to -- okay, I've got it.
9 Okay.

10 Q So in this paragraph and you know, your
11 reference to this paragraph, you again go back to
12 limiting claims in a certain way, whereas Shenoy is
13 merely talking about what the prior art is lacking.

14 Why do you read his description about what
15 prior art is lacking as something to do with claim
16 limitation?

17 MR. WHITT: Objection, form.

18 THE WITNESS: I'm not understanding the
19 question. I'm looking at his paragraph 32 and he's
20 saying that -- he's saying that I was incorrect in
21 saying ads are not -- are sent automatically without
22 a request. So that is -- he's disagreeing with
23 something I said and I'm now disagreeing with what
24 he said.

25 ///

1 BY MR. IYER:

2 Q Yeah, but in your disagreement in
3 paragraph 26, you talk about limiting the claim?

4 MR. WHITT: Objection, form.

5 THE WITNESS: Well, because it's not about
6 limiting the claim. It's talking about the claims,
7 which is what all of this is about ultimately is the
8 claims do not require such an implementation
9 where -- as I talk about in paragraph 26. So we're
10 not talking always in the abstract. This is in the
11 end how do these prior art things affect the claims.
12 Maybe I'm missing something in your question or
13 misinterpreting, but I think I made it pretty clear
14 where the disagreement is.

15 BY MR. IYER:

16 Q This paragraph that Dr. Shenoy is talking
17 about talks about deficiencies in the prior art.
18 And deficiencies in the prior art, from there you
19 are drawing some claim limitations just from this
20 description which doesn't have any reference to
21 claims. It's talking about what the prior art is
22 lacking.

23 MR. WHITT: Objection, form.

24 THE WITNESS: I'm not sure -- I think I'm
25 still missing something. He's saying something that

1 I'm disagreeing with and then I'm putting that in
2 context further that the claims do not require what
3 he's saying is missing.

4 BY MR. IYER:

5 Q Look at paragraph 27 of your declaration.

6 A Okay.

7 Q And again you're talking about paragraph 34.

8 A Yes.

9 Q Okay.

10 A Of Shenoy, yes.

11 Q Paragraph 34 of Shenoy. It's a short
12 paragraph.

13 A Sorry, what is 34?

14 Q It's a very short paragraph. It talks about
15 HTTP protocol as practiced during 2007–2008 and what
16 it does not do. On the other hand, you conclude
17 from that paragraph, referring to that paragraph,
18 that Dr. Shenoy appears to incorrectly limit the
19 claims.

20 Why is talking about some deficiency in the
21 paragraph, why is that limiting the claims?

22 A Well, because I disagree with his
23 paragraph 34, first of all. And he's talking about
24 paragraph 34 as impacting the claims in this entire
25 document. It's all about the claims and we're here

1 because of the claims. And by him saying it doesn't
2 practice it, he's implying that -- he's essentially
3 saying that because HTTP in his view does not do
4 push-type implementation, therefore the prior art
5 doesn't render the claims obvious. But that's where
6 I'm disagreeing.

7 First of all, the claims do not require or
8 do not limit to a push-type implementation, neither
9 are they limited to HTTP. So him pointing out that
10 HTTP is supposedly -- which I disagree with -- that
11 it doesn't allow for, in his view, a push
12 implementation is not relevant to whether the claims
13 are obvious or not. That's what I'm trying to say
14 in my paragraph 37.

15 Q What do you understand by the word
16 automatically as used in the '561 and '942 patents,
17 claim 1?

18 A Well, it's the system has to do it on its
19 own, but it could have intervening steps. It
20 doesn't have to be solely without any user
21 intervention or any other intervention.

22 Q What do you construe or understand the term
23 automatically and the term associated with the user
24 as used in claims 1 of '561 and '942 patent?

25 A Sorry, hang on. I've got to find associated

1 with the user. Well, first of all, I think I've
2 said this in my declaration. I'm trying to find it.
3 There has not been a claim construction beyond the
4 plain and ordinary meaning. So I would understand
5 it and the patent I think is using it to mean
6 transferred automatically without manually being
7 transferred. I think if I look at quickly the
8 patent -- let's look at the '942 which I have open,
9 I believe. The '942 patent -- '942 talks about FTP.
10 Just give me one second. Right, it talks about the
11 problems with distributed file systems in FTP where
12 things are manual. It moves things manually,
13 customized to manually move things around. So
14 automatically here means it's not done manually.
15 And so that's been -- my understanding has been the
16 meaning of the word automatic here.

17 Q So if a protocol uses a push model, a
18 particular push implementation, then can it also
19 operate on a pull mechanism using the same
20 instruction, even the other way around pull to push?
21 I'm asking now push to pull?

22 MR. WHITT: Objection, form.

23 THE WITNESS: I'm not sure I understand the
24 question. So you've got the push protocol, the push
25 system if I understand correctly.

1 BY MR. IYER:

2 Q Yeah.

3 A Now what do you want to do? You want to
4 flip it?

5 Q I want to see whether you have an opinion on
6 whether a push protocol can be used to implement a
7 pull protocol?

8 MR. WHITT: Objection, form.

9 THE WITNESS: I haven't really considered
10 that issue, but just thinking off the top of my head
11 here I don't see why not. You could use a push
12 protocol to implement a periodic pull, kind of
13 inverse of what -- was it Hepworth that was teaching
14 or using -- using pull protocol to implement a push.

15 So I think just hypothetically, yes, from
16 just a purely conceptual point of view. But I
17 haven't studied it in detail to provide you with a
18 specific example or an implementation for it. Just
19 thinking off the top of my head here, the answer
20 would be yes.

21 BY MR. IYER:

22 Q Okay. Can you look at paragraph 34 of your
23 declaration and read that paragraph and familiarize
24 yourself?

25 A Okay.

1 Q Can you please read the first sentence?

2 A Sure. The first sentence says, "The
3 challenged patents expressly contemplate user
4 devices connecting to a server via internet." And I
5 cite to -- sorry, I cite to '942 patent, column 7,
6 lines 28 to 32.

7 Q And earlier in paragraph 13 I believe, you
8 take exactly a different view in the sense that --
9 can you scroll up to paragraph 13 and read the first
10 two sentences?

11 A Sure. I'm at paragraph 13 of my
12 declaration, my reply declaration and it says -- it
13 says, "Dr. Shenoy states that the challenged claims
14 require a 'server'" -- in quotes, Shenoy declaration
15 paragraph 22. "To the contrary, none of the
16 challenged claims recites the word server. See
17 Balakrishnan opening declaration, lines 6" -- sorry,
18 paragraph 63 to 64. I'll stop there.

19 Q Okay. And on 34 -- in paragraph 34, you are
20 taking --

21 A Sorry, give me one second. I need to get
22 back to 34. Okay, I'm there.

23 Q Yeah. Look at the first two sentences of
24 paragraph 34.

25 A Yes.

1 Q It seems to be completely contradictory to
2 what you say in 13.

3 MR. WHITT: Objection, form.

4 THE WITNESS: I don't think that's true.
5 I've got to go back to 13. 13 I'm talking about the
6 challenged claims.

7 BY MR. IYER:

8 Q Yeah. And where --

9 A It doesn't have the word server. And in 34,
10 I'm talking about -- sorry, I'm going to get back to
11 it. It's hard to flip back because they're not
12 bookmarked. 34 is talking about the specification.
13 It's talking about contemplating connecting to a
14 server. So this is different from the claims. So a
15 server is not contradiction here. In 13 I'm talking
16 about -- focused on the claims. Here I'm not
17 focused on the claims per se. I'm talking about the
18 patent as a whole.

19 Q So earlier when we were talking about
20 paragraph 13 when I pointed out that you're
21 mischaracterizing Dr. Shenoy's -- the cites to
22 Shenoy, at that time you took a position that Shenoy
23 is talking about specification implies that he's
24 talking about claims?

25 MR. WHITT: Objection, form.

1 THE WITNESS: I don't think I said exactly
2 that. Certainly I'll leave whatever I said before
3 as what I said before.

4 BY MR. IYER:

5 Q So let's go back to paragraph 13.

6 A Okay.

7 Q In 13 you refer to paragraph 22 of Shenoy?

8 A Right.

9 Q In paragraph 22 of Shenoy, there's no
10 mention of claim?

11 A Hang on. I got to get back to Shenoy.

12 Q Yeah.

13 A The difference here in paragraph 22, he says
14 the focus of the '942 patent. That's -- I think we
15 went over this earlier today in today's deposition;
16 the focus, right. So that's why I'm reading it the
17 way I'm reading it.

18 Q So focus of the patent, and there you
19 construed that to be claims. And you're
20 contradicting that in your paragraph 34 where you're
21 saying exactly the opposite of what you said in 13?

22 MR. WHITT: Objection, form.

23 THE WITNESS: No, I'm not saying the
24 opposite. I'm not contradicting anything. I'm just
25 saying in 34, I'm not talking about the focus, I'm

1 not talking about the claim. I'm talking about the
2 patents contemplating something expressly. That's
3 different from the focus. It's different from the
4 claims.

5 BY MR. IYER:

6 Q Okay. In paragraph 34, you are talking
7 about device reconnecting to the server and you are
8 construing that to mean reconnection is the same as
9 a request.

10 A I'm not sure I'm doing that. I'm saying
11 this is just a requirement to re-establish
12 communication before anything can happen.

13 Q So your position is that just because a
14 connection is re-established, it's not a request --
15 it's not -- particularly it's not a specific request
16 from the client?

17 MR. WHITT: Objection, form.

18 THE WITNESS: No, it could be but not
19 necessarily.

20 BY MR. IYER:

21 Q Now, let's turn to paragraph 40.

22 A Okay.

23 Q Can we please -- can you please take a look
24 at it and familiarize yourself?

25 A Okay.

1 Q It talks about polling or polls. Can you
2 describe what is polling or polls in this context?

3 A In this context simply means it's checking
4 whether they're in communication with the server
5 running the synch application. So it's a commonly
6 used term in the art.

7 Q In other words, polling is simply checking
8 if there is -- somebody is connected or some device
9 is connected?

10 A In this example, yes.

11 Q So polling does not mean that it's checking
12 if there is an outstanding request?

13 MR. WHITT: Objection, form.

14 THE WITNESS: It doesn't have to mean that.
15 It could mean that, but it doesn't have to. It
16 could also mean I'm just checking to see if I'm
17 connected or the other device is connected.

18 BY MR. IYER:

19 Q But in this context, in the context in which
20 we are talking about, paragraph 40, what would
21 polling exactly mean?

22 A Here it's simply saying is it in connection
23 -- is it in communication with the synch application
24 as I state.

25 Q Can we look at paragraph 52?

1 A Okay.

2 Q Can you read that and familiarize yourself?

3 A Okay.

4 Q So here you're referring to the term
5 user-centric?

6 A Yes.

7 Q Okay. What do you understand by the term
8 user-centric as used in this paragraph or as you
9 understood Dr. Shenoy to be using it?

10 A Give me a second to pull up Dr. Shenoy's
11 declaration. I think based on the way Dr. Shenoy is
12 describing it that the device is associated with a
13 user, some kind of association with the user.

14 Q In paragraph 22 of -- can you read
15 paragraph 22 of Shenoy into the record?

16 A Sure. That paragraph reads, "The focus of
17 the '942 patent is to provide a user-centric
18 computer network architecture for file
19 synchronization where a server automatically
20 receives a modified file from one device associated
21 with a user when the user modifies the file and the
22 server automatically transfers it to another device
23 associated with the same user."

24 Q So what do you understand that to mean?

25 A Well, what he is saying there is there's one

1 device associated with a user. When the user
2 changes or modifies that file, the server
3 automatically synchronizes or transfers it to some
4 other device that's associated with the same user.
5 That's my understanding of what he's saying.

6 Q So can you read the first sentence of
7 paragraph 52 of your declaration?

8 A "In addition, for the reasons discussed
9 above, a person of skill in the art would understand
10 that server 106 automatically sends the Client A
11 content to Client C, even though Client C requests a
12 list of missing content and requires the missing
13 Client A from server 106."

14 Q So if Client C is required to request, how
15 would it be user-centric?

16 MR. WHITT: Objection, form.

17 THE WITNESS: I'm not sure it's required to
18 request. I would say that it's automatically
19 sending it from A to C, the server.

20 BY MR. IYER:

21 Q You qualified that by saying even though
22 Client C requests. So you are saying that it's
23 immaterial if the Client C requests, you still
24 consider it user-centric?

25 MR. WHITT: Objection, form.

1 THE WITNESS: I would say yes. If I
2 requested or not, it's still going from A to C
3 automatically.

4 BY MR. IYER:

5 Q So the characterization of user-centric as
6 being automatic is irrelevant according to you?

7 MR. WHITT: Objection, form.

8 THE WITNESS: I would say yeah, there's not
9 a requirement for sending something from A to B —
10 or sorry, A to C. It doesn't change the automatic
11 nature of it.

12 BY MR. IYER:

13 Q The next sentence you say, "A POSA would
14 view the sending of Client A content from the server
15 to Client C to be automatic both from the server's
16 perspective and the user's perspective."

17 A Yes.

18 Q What do you mean by that?

19 A I mean exactly what it says, it's automatic.
20 The server does it automatically and the user, it's
21 coming automatically as well.

22 Q Okay. What do you mean by something being
23 automatic from a server's perspective?

24 A That means it just does it automatically.
25 It's not — I'll leave it at that. It sends it

1 automatically on its own.

2 Q Without a request?

3 A Without necessarily a request. It could
4 have a request. Doesn't need a request.

5 Q So even if it's a request made, you would
6 still consider it to be automatic from the server's
7 perspective?

8 A Given the entirety of the disclosure, yes.

9 Q Entirety of what disclosure?

10 A We're talking about the '942 patent.

11 Q Here you're talking about Sigurdsson.

12 A Sorry, we're back to Sigurdsson. Yes,
13 that's right. Sorry. Sorry, I misspoke. Yes, I
14 meant the entirety of Sigurdsson.

15 Q But then your next sentence seems to admit
16 that Sigurdsson systems or methods are only
17 automated from the user's perspective and that
18 means, you know, that's in contradiction to your
19 previous statement that it is automatic from the
20 server's perspective as you understand the term to
21 be?

22 MR. WHITT: Objection, form.

23 THE WITNESS: I disagree with your
24 characterization. Just -- I'm not saying -- well,
25 what I am saying is even if Sigurdsson's systems are

1 only automated from the user's perspective, that is
2 all that's required.

3 BY MR. IYER:

4 Q So according to your testimony, so long as
5 something is not manual, everything is user-centric
6 and server-centric?

7 MR. WHITT: Objection, form.

8 THE WITNESS: I'm not sure user-centric and
9 server-centric is something I would necessarily use
10 as terms, but I would say if it's not manual, it's
11 happening automatically in this context.

12 BY MR. IYER:

13 Q In the last sentence you say you assume that
14 intervening steps are okay so long as you used
15 comprising language in the claim?

16 MR. WHITT: Objection, form.

17 THE WITNESS: I'm given to understand that
18 the way the claims that have the word comprising in
19 it means there can be additional steps. That's all
20 I'm saying there.

21 BY MR. IYER:

22 Q And would those additional steps, would they
23 be required to be in the context of a specification
24 and what one skilled in the art would understand?

25 MR. WHITT: Objection, form.

1 THE WITNESS: As a general matter, probably
2 yes, because patent claims are read in light of the
3 specification and in light of one -- knowledge of
4 one of skill in the art.

5 BY MR. IYER:

6 Q Can you go to paragraph 67?

7 A I'm assuming of my declaration?

8 Q Yeah.

9 A Okay, I'm there. Can you give me a moment
10 to read it? Okay.

11 Q So again, you appear to be repeating your
12 position that so long as there's the word
13 comprising, you could add intervening steps even if
14 they are contradictory to the actual plain meaning
15 of the claim?

16 MR. WHITT: Objection, form.

17 THE WITNESS: I disagree with that last part
18 where you say it's contradictory. I don't think I
19 say that. I say that comprising means there could
20 be additional steps.

21 BY MR. IYER:

22 Q So this would make sense only if automatic
23 is read to mean even if there's a specific request
24 from the client and then this would make sense, am I
25 correct?

1 MR. WHITT: Objection, form.

2 THE WITNESS: I don't believe so. I'm not
3 sure I understand the question.

4 BY MR. IYER:

5 Q You're trying to read automatic to mean that
6 it covers a situation even when a file is
7 specifically requested by the user?

8 MR. WHITT: Objection, form.

9 BY MR. IYER:

10 Q You would construe that situation to be
11 still covered by the word automatic?

12 MR. WHITT: Objection, form.

13 THE WITNESS: I think what I'm saying is
14 Sigurdsson says it moves from A to C automatically.
15 It's not saying that it cannot respond to a request
16 as well. But just because it's a request, it
17 doesn't negate the fact that it could be automatic.
18 That's the whole point I'm trying to make throughout
19 this whole Sigurdsson discussion.

20 MR. IYER: I think we've gone on close to an
21 hour so we can take another break. How are we doing
22 on the clock?

23 VIDEOGRAPHER: Let me take us off record and
24 I'll give you an exact time. The time is 3:54 p.m.
25 and we're going off the record.

1 (Short recess.)

2 VIDEOGRAPHER: The time is 4:06 p.m. and
3 we're back on record.

4 BY MR. IYER:

5 Q So can you review paragraph 62 of your
6 declaration?

7 A Okay.

8 Q You take the position that no modifications
9 of Sigurdsson would be necessary to implement push
10 functionality in the middle of the paragraph. Do
11 you see that?

12 A Yes, because it's expressly recited in 68 of
13 Sigurdsson.

14 Q Can we look at paragraph 68 of Sigurdsson?
15 Did we put up Sigurdsson? Is it already put up?

16 MR. WHITT: Exhibit 11.

17 THE WITNESS: Okay. So yeah. I've got Sig
18 68.

19 BY MR. IYER:

20 Q Yeah. So you're construing the last
21 sentence of 68 to support a position that push
22 functionality is suggested by Sigurdsson without any
23 modification?

24 MR. WHITT: Objection, form.

25 THE WITNESS: I'm not construing anything.

1 I'm just reading paragraph 68 including that last
2 sentence that says the server can then transmit the
3 content to the remaining client peers, such as the
4 Clients B and C. That to me is express disclosure
5 that Sigurdsson is doing or was disclosing push
6 functionality.

7 BY MR. IYER:

8 Q So Sigurdsson is disclosing is suggesting
9 peer-to-peer, am I correct?

10 MR. WHITT: Objection, form.

11 THE WITNESS: Sigurdsson discusses
12 peer-to-peer but also discusses going through the
13 server.

14 BY MR. IYER:

15 Q And at that time, you know, HTTP did not
16 have functionality for push?

17 MR. WHITT: Objection, form.

18 THE WITNESS: I disagree. I think we've
19 gone over this again and again.

20 BY MR. IYER:

21 Q So HTTP server push is implemented as using
22 a client pull?

23 MR. WHITT: Objection, form.

24 BY MR. IYER:

25 Q That's to the extent that we have gone

1 through?

2 A I disagree with that. I think I've again
3 and again in this deposition and the previous
4 deposition. I've also given examples such as ads
5 and viruses that is not a client pull. And then
6 we've today talked about the Hepworth reference that
7 talks about how we implement a pull -- sorry, a push
8 using client pull. So we've discussed this again
9 and again today and in the previous depo.

10 Q So the only discussions are push using a
11 client pull or ads and viruses. Other than that,
12 you have not given any example or you've not
13 discussed any example of implementing push?

14 MR. WHITT: Objection, form.

15 THE WITNESS: In HTTP. I'm not restricting
16 anything to HTTP, just to be clear.

17 BY MR. IYER:

18 Q Can we look at paragraph 71 and 72 of your
19 declaration?

20 A Yes, I'm there.

21 Q You refer to paragraph 79 of Shenoy
22 declaration. Can you --

23 A I refer to 79 of Sigurdsson.

24 Q Shenoy declaration, paragraph 70.

25 A Sorry, where are you?

1 Q In your paragraph 70?

2 A 7-0, okay.

3 Q Sorry. I meant please review paragraph 70
4 of your declaration.

5 A Sorry, I was at 71.

6 Q Sorry about that.

7 A No problem. Just give me a moment, please.
8 Okay.

9 Q And please review paragraph 79 of Shenoy's
10 declaration. So?

11 A I'm sorry, give me one moment. I'm just at
12 Shenoy's declaration.

13 Q Yeah, yeah, please.

14 A Give me one second. Okay.

15 Q Please review the first sentence of
16 paragraph 70 of your declaration.

17 A Okay.

18 Q So you say that Dr. Shenoy incorrectly
19 asserts it would have been obvious in view of
20 embodiments to push data. Was that a typo? I mean,
21 I hope it is because that's kind of 180 degrees
22 opposite of what Shenoy is saying.

23 MR. WHITT: Objection, form.

24 THE WITNESS: No, so I think if I read my --
25 I just want to make sure which one you're reading.

1 My paragraph 70, there is a comma there. It says,
2 "Even if the Board were to conclude that one or all
3 of Sigurdsson's embodiments are limited to
4 pull-based HTTP mechanisms as Dr. Shenoy incorrectly
5 asserts" citing to Shenoy declaration 79. In other
6 words, the assertion by Shenoy that I'm talking
7 about here is the limitation to pull-based HTTP
8 mechanisms.

9 I'm saying even if Shenoy's assertion is
10 accepted by the Board, it would still have been
11 obvious in view of the embodiments disclosed in
12 paragraphs 31 and 68 to push data from server 106 to
13 a client. So I'm not saying that Dr. Shenoy is
14 saying the second half of my sentence. Does that
15 clarify the situation?

16 BY MR. IYER:

17 Q I guess the sentence is confusing. Anyway,
18 I'll move on. Okay.

19 Can you look at paragraph 71 and 72? Just
20 so that -- since we got into the previous
21 paragraphs, can you review this?

22 A Okay.

23 Q And you see the first line? Can you read
24 the first line?

25 A Of paragraph 71?

1 Q Yeah.

2 A It reads, "Dr. Shenoy is incorrect in
3 attempting to draw a bright line between embodiments
4 of Sigurdsson that use a peer-to-peer architecture
5 and embodiments that use a client-server" in
6 brackets "(drop box) architecture. See Shenoy
7 declaration, paragraph 80."

8 Q So is your position that client-server and
9 peer-to-peer protocols are interchangeable?

10 A Well, what I'm saying is Sigurdsson is
11 disclosing embodiments that intermingle these
12 things. So they are interchangeable in the sense
13 that these concepts don't have to be in purely
14 separate buckets. They can overlap if one chooses
15 to do so. That's the point I'm trying to make here.

16 Q So --

17 A And Sigurdsson provides examples where such
18 intermingling occurs or can occur.

19 Q So as an expert in this field, is your
20 opinion that protocols that are set for certain
21 functionalities and providing certain advantages
22 does not matter?

23 MR. WHITT: Objection, form.

24 THE WITNESS: I never said that. Protocols
25 matter, but they can -- they don't exist in a

1 vacuum. They can often be intermingled. They can
2 used both for the protocols at the same time in
3 particular combinations depending on the situation.
4 It all depends on the context. And I never said the
5 protocols don't matter.

6 BY MR. IYER:

7 Q So again, can you give examples apart from
8 what you suggest -- what you say Sigurdsson suggests
9 where a client-server architecture and a
10 peer-to-peer architecture are used interchangeably?

11 A I would say they intermingle in the sense
12 that you could have client-server architectures and
13 peer-to-peer architectures co-existing and
14 overlapping and intermingling. And that's my point.
15 I mean, I see this in my office right now. I've got
16 multiple machines connected to each other, but
17 they're also connected to a server, they're
18 connected to the internet or the internet. They're
19 connected to my network in my research laboratory.
20 So I have multiple client-server setups at work in
21 my computing environment as well as multiple
22 peer-to-peer setups, all happily co-existing.

23 Q Again, going back to the granularity of
24 time. As a virtual machine, can a device act as
25 peer-to-peer and client-server at the same time?

1 MR. WHITT: Objection, form.

2 THE WITNESS: Sorry, I'm not sure I
3 completely understand the question so maybe you
4 could rephrase or repeat.

5 BY MR. IYER:

6 Q Earlier on we were talking about a certain
7 granularity of time when we talked about client and
8 server. Using that same concept, is it your
9 position that a device can be a peer-to-peer virtual
10 machine as well as a client to -- client-server
11 virtual machine at the same time?

12 MR. WHITT: Objection, form.

13 THE WITNESS: It can -- I would say at the
14 same time, a single virtual machine running a single
15 instruction would be one or the other. However, a
16 machine can run multiple instructions at the same
17 time because of multi-threaded architectures. In
18 that situation, it could certainly be operating in a
19 peer-to-peer situation as well as in a client-server
20 situation or multiple client-server situations at
21 the same time.

22 BY MR. IYER:

23 Q In paragraph 71, you refer to paragraph 79
24 of Sigurdsson.

25 A Yes.

1 Q Let's look at paragraph 79 of Sigurdsson.

2 A Okay.

3 Q So in paragraph 79 of Sigurdsson, it clearly
4 says that Client C 406 requests the content. So
5 that paragraph is talking about the client
6 requesting the content. And in your declaration,
7 you are citing -- you are like referring to that as
8 an example of, you know, server push or, you know,
9 concepts similar to that.

10 A I'm not --

11 MR. WHITT: Objection, form.

12 THE WITNESS: I'm not sure I understand the
13 confusion. Paragraph 79 is very clear.

14 BY MR. IYER:

15 Q 79 --

16 A Paragraph 79 is very clear that if, for
17 example, two clients, first and second are offline
18 at the time of the third client's request, the third
19 client can get the content from the server instead
20 of the peer-to-peer connection. So it doesn't -- it
21 doesn't necessarily require that -- it doesn't have
22 to get it from a peer if the peers are offline.

23 And it gives additional examples, for
24 instance, a client made a request if the other
25 clients have less available bandwidth, for example,

1 at the end of paragraph 79. So this is precisely
2 the contemplation of this combination of
3 peer-to-peer and client-server being intermingled or
4 inter-used at the same time.

5 Q Right. But paragraph 79 explicitly states
6 that the Client C requests the content. It's not
7 automatically coming from the server if the first
8 client cannot be connected in a peer-to-peer
9 fashion?

10 MR. WHITT: Objection, form.

11 THE WITNESS: In that example, that is
12 correct. There was a request, but we've already
13 talked about paragraph 68 that talks about the
14 server pushing stuff to the other clients without
15 that request. But this again is precisely my point
16 that Sigurdsson is contemplating both peer-to-peer
17 and client-server architectures and push
18 architectures.

19 BY MR. IYER:

20 Q Can you look at 76?

21 A On my -- in my declaration?

22 Q Yeah.

23 A Okay. Give me a moment, please, to read it.

24 Okay.

25 Q So in your first sentence you refer to

1 Dr. Shenoy and opine that he's incorrect in
2 asserting that it would not have been obvious to
3 combine Sigurdsson and Shappell because Shappell
4 teaches away from a server -- from using a server.
5 And you refer to paragraph 79 of Sigurdsson and say
6 that Sigurdsson teaches that use of a server is
7 interchangeable with the use of a client in a
8 peer-to-peer setup. Am I correct?

9 A Yes, that's what I say, yes.

10 Q So what you are combining here is Shappell
11 which is a server-less environment and Sigurdsson in
12 its mold of a peer-to-peer environment. So what you
13 are combining is actually a peer-to-peer with
14 another peer-to-peer?

15 MR. WHITT: Objection, form.

16 BY MR. IYER:

17 Q And that you are citing to --

18 MR. WHITT: Same objection.

19 THE WITNESS: Whatever combination you use,
20 he's saying we cannot combine because Shappell
21 teaches away. And I'm saying Shappell is supposedly
22 server-less, right. I agree with that. But
23 Sigurdsson is contemplating both. And therefore,
24 why it doesn't require the use of a server is my
25 point here. Since Sigurdsson also discloses

1 server-less environments, why not combine with
2 Shappell.

3 BY MR. IYER:

4 Q So the combination is the server-less aspect
5 of Sigurdsson with Shappell, so essentially you're
6 suggesting -- you're pointing to suggestion of a
7 server-less Sigurdsson with a server-less Shappell?
8 That's what you're combining in this fashion?

9 MR. WHITT: Objection, form.

10 THE WITNESS: No, the combination is
11 Shappell with Sigurdsson as a whole. And this is
12 just -- this paragraph is just saying that
13 Sigurdsson is not limited to server and not limited
14 to peer-to-peer. So therefore, it can combine with
15 other non-server disclosures.

16 BY MR. IYER:

17 Q Let's read sentence two. You're saying "To
18 the contrary, paragraph 79 of Sigurdsson teaches the
19 use of a server is interchangeable with the use of a
20 client in a peer-to-peer setup."

21 So either Sigurdsson is a server as in a
22 client-server setup or it's peer-to-peer?

23 A No. It has client-server and it has
24 peer-to-peer and it intermingles the two.

25 Q Yeah.

1 A I've gone over this before again and again.
2 It is not either/or. It teaches both and the
3 co-existence of both.

4 Q Okay, look at the last sentence. The last
5 sentence is contradictory to what you just mentioned
6 in the previous two sentences here in your
7 testimony. Please read the last sentence, because
8 Sigurdsson.

9 A Sure. Because Sigurdsson also discloses
10 certain server-less embodiments involving direct
11 file transfers from client to client, the person of
12 skill in the art would have been motivated to look
13 to other server-less embodiments such as those in
14 Shappell for the reasons discussed in my opening
15 declaration.

16 And there's nothing contradictory here at
17 all. This is exactly what I've been talking about
18 all this while which it contemplates both.
19 Sigurdsson discloses server-less which is
20 peer-to-peer. It discloses client-server and it
21 discloses intermingling. So therefore, one could
22 also look at other server-less embodiments to see
23 what other combinations are possible. There's
24 nothing contradictory about it at all.

25 Q So your position is server-less to

1 server-less can be combined? Shappell has nothing
2 about server, so Shappell would remain server-less?

3 A That part I agree with.

4 Q Yes. Yes. So therefore, if your position
5 is that server-less to server-less can be combined,
6 you're combining only server-less aspect of
7 Sigurdsson?

8 MR. WHITT: Objection, form.

9 THE WITNESS: No, I'm just saying that
10 Sigurdsson has both, an intermingling of both. So
11 therefore, I can look at other things that have one
12 of them is what I'm saying. I'm not saying ignore
13 everything else in Sigurdsson.

14 BY MR. IYER:

15 Q So in paragraph 77, you are saying -- you're
16 referring to Dr. Shenoy to discounting the use of
17 server? Okay?

18 A In Shappell.

19 Q In Shappell?

20 A Yes.

21 Q So sticking with server-less to server-less
22 combination and with Shappell describing the
23 client-server implementation, how do you arrive at
24 claim 1?

25 MR. WHITT: Objection, form, scope,

1 foundation.

2 THE WITNESS: Well, Shappell doesn't
3 disparage the client-server implementation. I never
4 said that. In fact, it doesn't -- it does not
5 disparage it, but just says the type of network is
6 not critical and is only preferably peer-to-peer.
7 It doesn't -- it doesn't disparage it at all.

8 BY MR. IYER:

9 Q So why would a reference discount something
10 saying that it needs a server-less environment,
11 specifically saying server-less? It's not silent on
12 the server. It's specifically says server-less
13 environment. Why would a reference say that if it's
14 not disparaging a server?

15 A It's not disparaging. It's just saying we
16 are looking at this particular one which is
17 server-less. It doesn't say that's disparaging,
18 let's beat up or discount the client-server
19 implementation. Where does it say discounted or
20 disparaging?

21 Q Less is discount, is that right?

22 A I'm sorry, what?

23 Q Less, server-less means discounting the
24 server?

25 MR. WHITT: Objection, form.

1 THE WITNESS: No. Server-less just means no
2 server. It doesn't mean discount the server.

3 BY MR. IYER:

4 Q Let's move on to paragraph 81.

5 A Okay.

6 Q So what's your understanding of associated
7 with a user as used in the claims and as you
8 describe here in this paragraph?

9 A Well, here it just means that in this
10 paragraph it's talking about the computers involved
11 in synchronization have to be associated with the
12 user and that the user's part of the same group or
13 that the files are shared and synchronized. So
14 there's a connection and some relationship to the
15 user.

16 Q So here, associated with the user would mean
17 members of the group and not your own second
18 computer?

19 MR. WHITT: Objection, form.

20 BY MR. IYER:

21 Q You wouldn't obviously share a file with
22 yourself. You're talking about a group, a group
23 share work environment?

24 MR. WHITT: Objection, form.

25 THE WITNESS: Well, you could share a file

1 with yourself. I wouldn't exclude that. But here
2 we are talking about sharing files with other
3 members of a group.

4 BY MR. IYER:

5 Q So when you are talking about group sharing
6 for working together in a group, obviously you're
7 not talking about yourself, sharing files with
8 yourself?

9 MR. WHITT: Objection, form.

10 THE WITNESS: I don't think it excludes
11 sharing files with yourself, but I would definitely
12 include sharing files with others. I share files
13 with myself all the time. I email things to myself.

14 BY MR. IYER:

15 Q Would that be construed as you working with
16 yourself?

17 A It could.

18 MR. WHITT: Objection.

19 THE WITNESS: It could.

20 BY MR. IYER:

21 Q Can we move to paragraph 163?

22 A Are we still in my declaration, I would
23 assume?

24 Q Yeah.

25 A Okay.

1 Q So referring to Hesselink, you're talking
2 about a connection server 14. If you want to look
3 at Hesselink, I can --

4 A I think we should put it up just so I have
5 it. Thank you.

6 Q Exhibit 13, please.

7 (Balakrishnan Exhibit 13 marked for
8 identification.)

9 THE WITNESS: Okay, I have Hesselink in
10 front of me. Maybe you should ask your question.
11 BY MR. IYER:

12 Q Yeah. So in this paragraph, in your
13 paragraph 163, you use the term connection server as
14 used in Hesselink.

15 A Right.

16 Q Okay. So what's your understanding of
17 connection server as used in Hesselink, Figure 10?
18 I think it's 140 -- I mean Figure 10?

19 A I would say this connection server is an
20 intermediary that enables the connections between
21 the different clients all connected to it.

22 Q So is it merely a conduit for data or does
23 it provide server-type functionalities?

24 MR. WHITT: Objection, form.

25 THE WITNESS: Well, I think it is providing

1 server-type functionality because it's pushing stuff
2 out from the server to the clients. So it is a
3 conduit and a server in that sense.

4 BY MR. IYER:

5 Q So where does it say that Hesselink is
6 pushing data to a client device?

7 MR. WHITT: Objection, form. Are you asking
8 him to read the whole reference?

9 MR. IYER: I mean if it helps.

10 THE WITNESS: Give me a moment. I just want
11 to find the right spot. Well, first of all, you
12 know, I would look at paragraph 80 in the
13 description of connection server in itself, it's a
14 Unix Windows Novell, et cetera, and all of those are
15 well-known to do server functionality which includes
16 push functionality. So I think that by definition
17 connection server is -- can act as a push -- a push
18 server capable of disclosures or at least that part
19 of the disclosure in Hesselink. That's just one
20 example. Did counsel drop off?

21 (Stenographer clarification.)

22 MR. WHITT: Oh.

23 BY MR. IYER:

24 Q I'm sorry, I was conferring with my
25 associate. Sorry about that.

1 So if you look at your paragraph 162 --

2 A Hang on. I got to get there.

3 Q Actually 163?

4 A Okay. I'm there right now. Yeah, I'm
5 there.

6 Q So referring to paragraph 141 of Hesselink,
7 one client may send a file modification to another
8 client which in turn may broadcast the file
9 modification to all other subscribed user modules.
10 Considering that Hesselink is a peer-to-peer
11 environment, doesn't this not -- doesn't this
12 indicate that there's no role for the server pushing
13 clients?

14 A No, I disagree because these clients are
15 also connected through this connection server and we
16 just went through that.

17 Q It says it may broadcast the file
18 modifications to another client which in turn may
19 broadcast to all other subscriber user modules.
20 Okay. So the question of sending it to another
21 device associated with the same user, what does this
22 indicate?

23 MR. WHITT: Objection, form.

24 THE WITNESS: Well, because it's going
25 through the transfer of content from one client

1 through the connection server and then being pushed
2 out to another client, so that's a push-based
3 transfer.

4 BY MR. IYER:

5 Q Why do you say that?

6 A Well, because it's going from client to a
7 connection server to another client.

8 Q So --

9 A The other client didn't request it. It's
10 being pushed to it.

11 Q So if the server is merely used as a
12 conduit, you would consider that to be the same as
13 push?

14 MR. WHITT: Objection, form.

15 THE WITNESS: It's still pushing it because
16 it is going through that server. It is not directly
17 going from Client A to Client B. It's going through
18 the connection server to some other client and
19 that's called a destination client and that is a
20 push as well.

21 BY MR. IYER:

22 Q So in the context of Hesselink, how would
23 you interpret the term associated with the user as
24 used in claims of, you know, '561 and '942?

25 MR. WHITT: Objection, form.

1 THE WITNESS: Give me a moment. I'm just
2 going to find where I have that. So Hesselink at
3 120 -- so Hesselink at paragraph 120 talks about the
4 present invention enables a user to access devices
5 18a to n of all the computers that a user would
6 normally have access to from any single location.
7 So that is giving me -- it's clearly teaching that
8 the user has access to computers that are associated
9 with a user. So that is an association. It has
10 access to those and therefore it's associated.

11 BY MR. IYER:

12 Q So your position is that so long as a person
13 has access to a computer, you would construe that to
14 mean associated with that user?

15 MR. WHITT: Objection, form.

16 THE WITNESS: Because they not only have
17 access to which -- access means not just I can look
18 at it. I can actually login and use that computer.
19 That would be my position, if that -- taking that
20 interpretation of access.

21 BY MR. IYER:

22 Q So --

23 A For example, if you were to walk into my
24 office, my computer's there. You would not have
25 access to that unless I gave you the login on that.

1 Q So wouldn't it be a correct characterization
2 that associated with the user would require at least
3 a login account on that computer?

4 MR. WHITT: Objection, form.

5 THE WITNESS: It doesn't require necessarily
6 a login account, but a login account would indicate
7 an association when logged in.

8 BY MR. IYER:

9 Q What other ways you would interpret that to
10 mean, like associated with the user? You said login
11 is one. Is there any other way I can be associated
12 with the computer? You already discounted just
13 merely having a physical access.

14 A Well, mainly if you had access to something
15 I don't actually have access to. So physically if
16 it's in the same room, I physically can grab the
17 computer, but if I can't use it, then I don't really
18 have access to it in a usable fashion. But I can
19 imagine, for example, let's take a computing system
20 like a phone that is setup for me. I don't actually
21 log into the phone. I have a password for it. And
22 I could set up the phone without a password, but the
23 password in itself gives me access to that phone.

24 So I don't actually have an account on my
25 phone. I don't have a login on my phone, but I'm

1 given access to that phone. So that is an example
2 of a non-login access or a non-account-based access.

3 Q Would I need to have control of a computer
4 to be considered to be associated with me?

5 A What do you mean by control?

6 Q If you heard the word control in this
7 context, what would you mean?

8 MR. WHITT: Objection, form.

9 THE WITNESS: Where does the word control
10 appear in the -- control is -- can you give me some
11 clarification.

12 BY MR. IYER:

13 Q You defined peer-to-peer by defining one
14 computer to be controlled by another computer.

15 A Where do I say that?

16 Q Let me search. Strike that. I cannot find
17 it. Can we take another break? We've gone for
18 close to an hour again.

19 A Sure.

20 VIDEOGRAPHER: Okay. Stand by. The time is
21 4:58 p.m. and we're going off the record.

22 (Short recess.)

23 VIDEOGRAPHER: The time is 5:12 p.m. And
24 we're back on record.

25 MR. IYER: I have no further questions. If

1 Sam, you want to carry on I can give --

2 MR. WHITT: Sure, you pass the witness.

3 Okay.

4 REDIRECT EXAMINATION

5 BY MR. WHITT:

6 Q I just had a few questions on redirect.

7 Dr. Balakrishnan, is a file a form of data?

8 A Yes.

9 Q Did you review anything in preparing your
10 opinions for these IPRs that says that data does not
11 include files?

12 A Absolutely not.

13 Q Would a person of ordinary skill in the art
14 have recognized files to be a form of data?

15 A Of course, yes.

16 Q If we could look quickly at Exhibit 5, this
17 is going to be page 8. I think this is the HTTP 1.1
18 specification.

19 A Yes, I've pulled it up.

20 Q So do you recall your testimony earlier
21 today about the terms resource and entity on this
22 page?

23 A Not the details of the testimony, but yes,
24 in the general things, yes.

25 Q So in the definition of resource on this

1 page, is there any restriction on the size of the
2 resource?

3 A No.

4 Q And in the definition of entity on this
5 page, is there any restriction on the size of an
6 entity?

7 A No.

8 Q Is there anything on this page or anything
9 else you reviewed in preparing your opinions for
10 these cases that says that an HTTP resource could
11 not include a file?

12 A Sorry, there's a negative there. Can you
13 repeat that?

14 Q Yeah. I tried my best with this.

15 Is there anything that you reviewed in
16 preparing your opinions for these IPRs that says
17 that an HTTP resource could not include a file?

18 A No, there's nothing to say it could not
19 include a file.

20 Q Okay. And then same question, did you
21 review or consider anything in preparing your
22 opinions that says that an HTTP entity could not
23 include a file?

24 A No. Nothing said that HTTP entity could not
25 include a file.

1 Q And then on PDF page 61 of Exhibit 4, this
2 is the HTTP 2 protocol.

3 A Sorry. PDF page what?

4 Q PDF page 61.

5 A Okay. I'm there.

6 Q Let me pull it up just to make sure I'm
7 asking you the right -- yeah. So the -- so you
8 recall that actually it was the previous page, you
9 were asked -- do you recall being asked questions
10 about the last paragraph on PDF page 60?

11 A On the server push, yes.

12 Q And the first sentence -- could you please
13 take a look at first sentence on PDF page 61 at the
14 top?

15 A Yes.

16 Q Okay. So is this saying that the client can
17 control whether server push is disabled or enabled?

18 A Yes.

19 Q And would that take place before any server
20 push actually arrives at the client?

21 A Yes, after the setting's been changed, it
22 would be disabled or enabled as the case may be.

23 Q And could you please take a look at line 4
24 of Exhibit 7? This is going to be the Hepworth
25 reference. So there's going to be -- let me find a

1 page. Sorry. So this is going to be page 26.

2 Apologies. So the first paragraph --

3 A Hang on. Page 26 of Hepworth? Pushed
4 events?

5 Q Yeah, internal page 26, PDF page 28.

6 A Yep.

7 Q The second sentence there, do you recall
8 questions about that sentence?

9 A Yes.

10 Q Okay. Would a person of ordinary skill in
11 the art have been familiar with the push protocols
12 referenced here?

13 A Absolutely.

14 Q Does Hepworth elaborate about these push
15 protocols anywhere in its disclosure in terms of
16 explaining them in further detail?

17 A No.

18 Q And does that indicate to you that a person
19 of ordinary skill in the art would have known what
20 they were and how to implement them?

21 A Absolutely, as I made clear in my
22 declaration multiple times.

23 Q Do you recall the line of questioning about
24 Hepworth pushing files using HTTP?

25 A I believe so, yes.

1 Q Yeah. And on page 2 of -- actually. Let me
2 double-check this. Sorry. I'm on the wrong page
3 here.

4 This is going to be paragraph 21 of your
5 reply declaration. This is the discussion of
6 Hepworth that you were asked about.

7 A Give me one second.

8 Q Sure.

9 A Sorry. Paragraph 21, you said?

10 Q Yes, paragraph 21 of your reply declaration.

11 A Okay. I'm there.

12 Q Okay. And then this is on page 17 towards
13 the middle after the block quote. There's a
14 sentence that says "Hepworth further explains that
15 among the data that may be transferred between a
16 client and a server in its embodiment is an XML
17 file." Do you see that sentence?

18 A Yes.

19 Q Is an XML file a file?

20 A Absolutely.

21 Q Is this an example of a file that could be
22 pushed to a user device from a server as disclosed
23 in Hepworth?

24 A Yes.

25 Q If you could go down to -- it's going to be

1 paragraph -- double-check here. So this is going to
2 be paragraph 23 of your reply declaration.

3 A Okay.

4 Q And then at the very last line at the bottom
5 of page 19, there's a partial sentence there at the
6 end it says, "Wong further discusses delivering
7 changes or updates to the same physical files using
8 push." Do you see that?

9 A Yes.

10 Q And so is it still your opinion that Wong
11 discusses delivering changes or updates to the same
12 physical files using push?

13 A Yes, absolutely.

14 Q Okay. Last couple of questions. Let's take
15 a look at paragraphs 140 through 142 of your reply
16 declaration. If you could just skim those quickly
17 just to refresh your recollection.

18 A Okay.

19 Q Are the examples from Hesselink that you
20 discuss here examples of push-based functionality?

21 A Yes.

22 Q Is there any disclosure of the source client
23 controlling the connection server or does the
24 connection server decide to forward the file
25 independent of the source client?

1 A The latter.

2 Q And then the last section here is just
3 paragraphs 164 through 168. If you could just read
4 those quickly. I just have one question about
5 those.

6 A You said 164, right?

7 Q Yeah, 164 through 168.

8 A Just give me a minute. Okay.

9 Q And are the embodiments from Hesselink that
10 you discuss in these paragraphs based on a
11 client-server architecture, at least in part?

12 A Yes.

13 Q And in these paragraphs, do you discuss
14 disclosures from Hesselink related to association of
15 multiple devices with the same user?

16 A Yes.

17 Q And have any of your opinions changed in any
18 of your declarations or deposition testimony given
19 in these matters?

20 A No.

21 MR. WHITT: No further questions.

22 MR. IYER: Okay. I have a few questions.

23 RE CROSS EXAMINATION

24 BY MR. IYER:

25 Q Dr. Balakrishnan, what's your understanding

1 of a file?

2 A At a very high level, it's a data structure,
3 an organization of data.

4 Q What are some are the features of a file?

5 A It contains data. It can be moved around.
6 It could be transmitted.

7 Q Does it have a name?

8 A It could have a name. It doesn't have to
9 have a name.

10 Q Do you know of files which do not have a
11 name?

12 A Yes, you could have a blank file that has
13 bits of file structure without a name. It is
14 possible.

15 Q Is a file required to have a permanent
16 storage?

17 A What do you mean by permanent storage?

18 Q As in a memory in which the file is stored?

19 A Not necessarily. You could have transient
20 files.

21 Q When a file is modified and saved, when you
22 say that it is saved and transferred, does that
23 indicate that it has a permanent storage?

24 A It depends where you're saving it to, what
25 the — what locality you're saving it to. Sometimes

1 you can save it to a transient place. Other times
2 you can save it to a more permanent place.

3 Q Is there any situation where you can look at
4 claim 1 in '561 and '942 patent where you would
5 consider that the file is transient and not in
6 permanent storage?

7 A So give me one second to look at the claims.
8 I've got to find -- I think the claims are silent as
9 to the type of storage where the file is. It
10 doesn't say either way so I think --

11 Q When a user modifies a file, would that be
12 an indication that the file is not a transient file?

13 A Not necessarily. Could be, but it doesn't
14 have to.

15 Q In a practical sense?

16 A What do you mean by practical?

17 Q As in looking at the claims, when you modify
18 a file and that file is sent to your second device,
19 in that context, are we talking about a transient
20 file in a practical sense?

21 A I could. I don't have to. It could be
22 permanent. It could also be transient.

23 Q Can you explain how it would be transient if
24 the file is going to your second device which is
25 actually the third device in the claim?

1 A Well, the multiple devices could all store
2 temporarily the same file for a period of time that
3 it's transient and then it goes away. So it all
4 depends on what you mean by permanent and transient.

5 Q To one reading the claims in light of the
6 specification, would that possibility that a file is
7 sent to a third device and it merely stays in
8 transient stage and not stored at all, would that be
9 within the coverage of claims '942 and '561 to one
10 skilled in the art?

11 A I would say for both patents, they would
12 encompass the notion of files broadly defined
13 whether or not permanently stored or transiently
14 stored.

15 Q Would a file that is stored in a permanent
16 storage, would it have a name?

17 A Usually, yes.

18 Q For example --

19 A Doesn't have to. It doesn't have to. I
20 could have a file ID that is not named.

21 Q Okay. Name as in name or ID?

22 A Some identifier I would say, yes.

23 Q Would it have a time stamp?

24 A Depends on the file system.

25 Q Would it have a version?

1 A Depends on the file system and whether
2 versioning was implemented or not.

3 Q So if you are just sending data that is not
4 a file, would that data have a name?

5 A It could. It doesn't have to.

6 Q Okay. Can you give me an example of when
7 you would have data and then have a name associated
8 with that data?

9 A Sure, a database record that's just a record
10 that is not encapsulated as a file could have a name
11 associated with it or an ID associated with it or
12 some identifier.

13 Q So you're saying that a database record has
14 -- each record has a name or an ID associated with
15 it?

16 A I'm saying it can have a name or an ID
17 associated with it.

18 Q And would it have a time stamp associated
19 with it?

20 A Depends on the record.

21 Q And would it have a version associated with
22 it, a database record?

23 A Depends on the implementation and what is
24 being stored.

25 Q Do you know of any implementation where a

1 database record is associated with a name, time
2 stamp and a version control?

3 A Absolutely.

4 Q Can you give me an example?

5 A There are built systems in some of my
6 companies that store what I would call digital
7 assets and those assets were stored in a database
8 and they had names, versions, times, times when they
9 were modified, all kinds of parameters associated
10 with the data.

11 Q Would a skilled artisan looking at a
12 database record would know that a database record
13 would have a name, a time stamp, and a version
14 associated with it?

15 A I think a skilled person would know that a
16 database record could have those parameters
17 associated with it.

18 MR. IYER: Give me a minute. I'll take a
19 couple of minutes break and then we can come back on
20 the record.

21 VIDEOGRAPHER: Stand by. The time is
22 5:30 p.m. and we're going off the record.

23 (Short recess.)

24 VIDEOGRAPHER: The time is 5:36 p.m. And
25 we're back on record.

1 BY MR. IYER:

2 Q Dr. Balakrishnan, in the previous break or
3 this break, did you have any conversation with your
4 attorney?

5 A No.

6 Q And in any of the previous breaks through
7 the day, did you have any conversation with your
8 attorney?

9 A No.

10 MR. IYER: Okay. That's all I have. Thanks
11 a lot for your time.

12 THE WITNESS: Thank you.

13 MR. WHITT: Thanks, Ravin.

14 THE WITNESS: Thank you all.

15 VIDEOGRAPHER: Stand by. The time 5:36 p.m.
16 and we're going off the record.

17

18 (Time Noted: 5:36 p.m.)

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C E R T I F I C A T E

I, Sandra L. Rocca, CSR, RMR, RDR, CRR, a
Certified Court Reporter within and for the States
of Illinois, Florida, Washington and Georgia, do
hereby certify:

That RAVIN BALAKRISHNAN, Ph.D., the witness
whose deposition is hereinbefore set forth, was duly
sworn by me and that such deposition is a true
record of the testimony given by such witness.

I further certify that I am not related to
any of the parties to this action by blood or
marriage; and that I am in no way interested in the
outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my
hand this 7th of March, 2024.



Sandra L. Rocca, CSR, RMR, RDR, CRR

IL License 084-003435

Washington St.: 22001337 Florida 1245

Georgia License: 5104-4011-7213-5936

Illinois, D.C. and Florida Notary