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Transcript of Richard Martin Stern, Jr., Ph.D.

Date: October 30, 2025

Case: Amazon, Inc., et al. -v- SoundClear Technologies, LLC (PTAB)

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WORLDWIDE COURT REPORTING & LITIGATION TECHNOLOGY

SoundClear Exhibit 2020
Amazon et al. v. SoundClear - IPR2025-00673

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

- - - - - x

AMAZON.COM, INC., :
AMAZON.COM SERVICES LLC, :
and AMAZON WEB SERVICES, :
INC., :
Petitioners : IPR2025-00565
v. : U.S. Patent
SOUNDCLEAR TECHNOLOGIES LLC, : No. 11,069,337
Patent Owner. :

- - - - - x

Videotaped Deposition of
RICHARD MARTIN STERN, JR., Ph.D.
Conducted Remotely
Thursday, October 30, 2025
12:15 p.m. Eastern Standard Time

Job No. 604599
Pages: 1 - 119
Reported by: Janet A. Hamilton, RDR

1 Videotaped deposition of RICHARD MARTIN

2 STERN, JR., Ph.D., held remotely:

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12 Pursuant to Notice, before Janet A.

13 Hamilton, Registered Diplomate Reporter and Notary

14 Public in and for the State of Maryland.

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A P P E A R A N C E S

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C O N T E N T S

PAGE

EXAMINATION OF

RICHARD MARTIN STERN, JR., Ph.D.

By Mr. To

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E X H I B I T S

(Attached to the transcript)

STERN DEPOSITION

Exhibit 1 Patent Owner's Notice of 11

Deposition of Dr. Stern

Exhibit 1001 U.S. Patent No. 11,069,337 26

(Naganuma)

Exhibit 1002 Declaration of 12

Richard Stern, Ph.D.

Exhibit 1003 US Patent Publication 73

No. 2017/0083281

(Shin)

Exhibit 1004 Japanese Unexamined Patent 85

Application No. 2005-202076

(Shimomura)

1	THE VIDEOGRAPHER: Here begins media	12:14:44
2	number one in the videotaped deposition of	12:14:45
3	Dr. Richard Stern in the matter of Amazon, Inc.,	12:14:48
4	et al. versus SoundClear Technologies, LLC in the	12:14:51
5	United States Patent and Trademark Office before	12:14:55
6	the Patent and Trial [sic] in case number	12:14:57
7	IPR2025-00565. Today's date is October 30th,	12:15:03
8	2025. The time on the video monitor is 12:15.	12:15:08
9	The remote videographer today is Jose Gonzalez,	12:15:12
10	representing Planet Depos. All parties of this	12:15:15
11	video deposition are attending remotely.	12:15:17
12	Would counsel please voice identify themselves and	12:15:18
13	state whom they represent.	12:15:21
14	MR. TO: Yeah. This is Anderson To with	12:15:23
15	the law firm Daignault Iyer representing Patent	12:15:26
16	Owner, SoundClear Technologies. With me is my	12:15:30
17	colleague, Steve Reynolds.	12:15:32
18	MR. REEVES: This is Nathan Reeves from	12:15:34
19	Morgan Lewis & Bockius, LLP for Petitioners and	12:15:37
20	the witness. With me is my colleague, Colin	12:15:41
21	Heideman.	12:15:46
22	THE VIDEOGRAPHER: The court reporter	12:15:47

1 today is Jan Hamilton, representing Planet Depos.

12:15:48

2 The witness will now be sworn.

12:15:50

3 P R O C E E D I N G S

4 -----

5 DR. RICHARD MARTIN STERN, JR.,

6 a witness herein, being duly sworn, testified as

7 follows:

8 EXAMINATION BY COUNSEL FOR PATENT OWNER

12:16:16

9 BY MR. TO:

12:16:16

10 Q Good afternoon, Dr. Stern. Thank you for

12:16:18

11 being with us today. Can you please state your

12:16:19

12 full name for the record?

12:16:22

13 A Full name is Richard Martin Stern, Jr.

12:16:23

14 Q Have you had your deposition taken before?

12:16:29

15 A Yes, I have.

12:16:32

16 Q Sir, can we go off the record for a

12:16:35

17 second? I think there's a technical issue.

12:16:37

18 THE VIDEOGRAPHER: Please stand by. We

12:16:40

19 are going off the record. The time is 12:16.

12:16:42

20 (A discussion was held off the record.)

12:17:20

21 THE VIDEOGRAPHER: We are going back on

12:17:21

22 the record. The time is 12:17.

12:17:23

1 BY MR. TO: 12:17:26

2 Q So throughout the deposition I'll ask you 12:17:29

3 a series of questions. Your attorney might 12:17:30

4 object, but unless the attorney specifically 12:17:33

5 instructs you not to answer you have to answer my 12:17:35

6 question. 12:17:37

7 Is it okay? 12:17:38

8 A Yes. 12:17:39

9 Q And if there's any question you don't 12:17:40

10 understand, I expect you'll ask me and I'll try to 12:17:42

11 rephrase it if I can. Otherwise, if you don't ask 12:17:45

12 me, I'll assume you understood my question. All 12:17:49

13 right? 12:17:51

14 A That's fine. 12:17:51

15 Q At this time do you have any documents 12:17:53

16 open in front of you, either virtually or 12:17:55

17 physically? 12:18:00

18 A I have an unmarked copy of my own 12:18:01

19 declaration which I know is in your possession as 12:18:03

20 well. 12:18:07

21 Q I'll ask that you don't refer to them 12:18:07

22 unless I point you to a specific document. 12:18:09

1 Is it okay? 12:18:12

2 A Of course. 12:18:13

3 Q I suppose we'll take a short break after 12:18:14

4 each hour of testimony, but if you need -- if you 12:18:19

5 need to use the restroom just let me know and we 12:18:21

6 can accommodate that. 12:18:25

7 A Thank you. 12:18:26

8 Q I only ask that if there's a pending 12:18:26

9 question that you provide a response before taking 12:18:28

10 a break. 12:18:30

11 Is that okay? 12:18:31

12 A Yes, of course. 12:18:32

13 Q Do you have any kind of device in front of 12:18:35

14 you other than the one that is being used for this 12:18:38

15 deposition? 12:18:41

16 A No, I do not. 12:18:42

17 Q And on the computer that you're using to, 12:18:45

18 for this deposition do you have any windows open 12:18:48

19 other than this video conference? 12:18:51

20 A No, I do not. 12:18:53

21 Q Is there any reason you can't give your 12:18:58

22 full and accurate testimony today? 12:19:00

1	A No.	12:19:03
2	Q Are you being compensated for your work	12:19:05
3	for this case?	12:19:07
4	A Yes.	12:19:08
5	Q What is your hourly rate for this case?	12:19:09
6	A It's currently \$575 per hour.	12:19:12
7	Q And is that your normal consulting rate?	12:19:19
8	A It is. If anything, it's a bit lower than	12:19:22
9	my current normal consulting rate. I haven't	12:19:26
10	raised my rates with Amazon in quite a while.	12:19:29
11	Q And are you being paid for your time at	12:19:32
12	this deposition today?	12:19:34
13	A Yes.	12:19:36
14	Q How much time did you spend preparing for	12:19:38
15	this deposition?	12:19:40
16	A Probably somewhere between 10 or 15 hours.	12:19:43
17	Q And did you meet with anyone in	12:19:49
18	preparation for this deposition?	12:19:51
19	A I met with Attorneys Reeves and Heideman	12:19:54
20	yesterday for about two-thirds of the day, and	12:19:58
21	I've had one or two phone conversations with	12:20:04
22	Attorney Reeves.	12:20:06

1 Q And how long were those phone 12:20:09
2 conversations? 12:20:12

3 A Less than an hour each. 12:20:13

4 Q And did you speak with anyone else in 12:20:18
5 preparation for this deposition other than those 12:20:21
6 that you just mentioned? 12:20:24

7 A Well, another attorney from, from Morgan 12:20:26
8 Lewis participated briefly in the preparation but 12:20:30
9 not very substantively. 12:20:38

10 Q Did you review any documents in 12:20:41
11 preparation for this deposition? 12:20:43

12 A I reviewed the documents that are in vary, 12:20:45
13 with varying degrees of care that are part of the 12:20:49
14 set of exhibits that are included in the packet 12:20:53
15 that you have. I did not look over any other 12:20:57
16 documents. 12:21:00

17 Q Sorry. So you only looked at Exhibit 1 to 12:21:05
18 1001 to 1004, or did you -- is there any other -- 12:21:08

19 A There are more than that, but -- and let 12:21:14
20 me see. I don't have the list of exhibits in 12:21:17
21 front of me. The most important objects of the 12:21:20
22 review were the declaration and the prior art that 12:21:24

1 was cited in the declaration as part of the 12:21:30
2 grounds for, for invalid, you know, the grounds 12:21:33
3 for anticipation and obviousness. 12:21:41

4 Q Thank you. I provided you with a document 12:21:47
5 marked as Exhibit 1 to your deposition. Can you 12:21:50
6 please open that on your computer? 12:21:53

7 A Let's see. How do I do that? It would 12:22:06
8 just appear on the screen. Is it in the chat or 12:22:17
9 is that -- go there -- here -- okay. Sorry. 12:22:25

10 Q No problem. Can you let me know when you 12:22:32
11 have it open? 12:22:40

12 A Yeah. The -- the sharefile is thrashing 12:22:41
13 around. Seems to be coming up now. Okay. 12:22:45
14 Exhibit 1? 12:22:54

15 Q That's right. 12:22:55

16 (Deposition Exhibit 1 was introduced for
17 identification.) 12:23:04

18 A Okay. The title is indicated as the 12:23:04
19 Patent Owner's Notice of Deposition. 12:23:06

20 Q That's right. Do you recognize this 12:23:09
21 document? 12:23:11

22 A I had seen it once before. 12:23:12

1 Q Okay. Do you understand that you are here 12:23:17
2 today to testify in response to this notice of 12:23:19
3 deposition? 12:23:22

4 A Yes, I do. 12:23:23

5 Q Okay. So I provided you with a document 12:23:24
6 marked as Exhibit 1002 to your deposition. I 12:23:30
7 understand that you have a local copy, physical 12:23:35
8 copy. If you would like to refer to that, you 12:23:38
9 may. 12:23:41

10 A Yes, thank you. And of course I do have 12:23:42
11 it. 12:23:45

12 (Deposition Exhibit 1002 was introduced
13 for identification.) 12:23:47

14 Q Okay. And you recognize Exhibit 1002; 12:23:47
15 correct? 12:23:52

16 A Yes, I do. 12:23:52

17 Q What is it? 12:23:53

18 A It's the declaration that I prepared for, 12:23:56
19 for this IPR. 12:24:02

20 Q Did you prepare this document in its 12:24:05
21 entirety by yourself? 12:24:09

22 A I prepared the document in collaboration 12:24:12

1 with the attorneys that I'm working with. 12:24:16

2 Q Without revealing any privileged 12:24:21

3 information can you tell me what that process 12:24:24

4 looked like? 12:24:26

5 A Well, this is part of multiple patents and 12:24:27

6 IPRs. So I had been engaged in an ongoing series 12:24:41

7 of discussions with the attorneys, including the 12:24:47

8 two who are in the room representing Amazon for 12:24:50

9 these cases. 12:24:54

10 Typically we would begin by discussing 12:24:56

11 prior art, the patents at issue, and general 12:25:00

12 strategies for developing comparison between 12:25:06

13 what's taught in what was in the patents and 12:25:14

14 what's taught in the prior art, and then from that 12:25:18

15 we would draft language that ultimately became the 12:25:26

16 declaration. 12:25:30

17 Q Did you do any prior art searching 12:25:33

18 yourself or were those provided to you? 12:25:36

19 A In this particular case I don't think that 12:25:39

20 I did. In other -- in other elements of the 12:25:43

21 cases, you know, frequently I do. There were a 12:25:49

22 number of things going on at once, and so I think 12:25:53

1 no. I don't remember super well. It was just 12:25:57

2 almost a year ago. 12:26:00

3 Q And did you receive any drafts of your 12:26:04

4 declaration or did you start from scratch? 12:26:08

5 MR. REEVES: Objection. Form. 12:26:14

6 Q You can answer. 12:26:18

7 A Some -- some of the text I drafted. Some 12:26:20

8 of the text, particularly concerning section 2, 12:26:26

9 applicable legal standards, was first drafted by 12:26:30

10 the attorneys. Certainly the background is work 12:26:37

11 that I've, you know, is text that I've used in 12:26:44

12 many similar declarations, and the technology 12:26:50

13 background and pretty much everything going from 12:26:55

14 there onward I'm responsible for. 12:27:03

15 Q When you say you're responsible for, what 12:27:07

16 do you mean by that? 12:27:09

17 A We had the discussions that I mentioned 12:27:13

18 earlier. Some decisions were made about which of 12:27:16

19 the multiple potential prior art sources could be 12:27:27

20 used, and we chose the ones that are currently in 12:27:34

21 the declaration, and the rest was really just 12:27:39

22 fleshing out the, and making explicit, the reasons 12:27:44

1 why the elements of the claims of the '337 patent 12:27:49
2 are anticipated by or were rendered obvious by the 12:27:55
3 teachings of the prior art. 12:27:57

4 Q So you were given the prior art, and then 12:28:10
5 you immediately went to seeing whether the prior 12:28:15
6 art anticipates the '337 patent; is that right? 12:28:20
7 Did you -- 12:28:25

8 MR. REEVES: Objection. Form. Objection. 12:28:27
9 Form. 12:28:30

10 Q Strike that. Did you perform any 12:28:34
11 independent analysis as to whether the prior art 12:28:37
12 actually renders the claim invalid? 12:28:39

13 MR. REEVES: Objection. 12:28:46

14 A Well --

15 MR. REEVES: Form. 12:28:48

16 A Yes. I read and considered carefully the 12:28:50
17 prior art and made sure that the prior art, 12:28:53
18 indeed, disclosed the various things that I have, 12:29:06
19 or that are written up, of course. 12:29:10

20 Q But you began with the assumption that the 12:29:15
21 prior art does disclose limitation of the patent? 12:29:17

22 MR. REEVES: Objection. Objection. 12:29:24

1	Misstates testimony.	12:29:25
2	A Yeah, I certainly didn't say that, and my	12:29:27
3	job is to render an opinion as stated without	12:29:32
4	preconceived notion of what that opinion would be.	12:29:38
5	Q Thank you for clarifying that.	12:29:47
6	Can you please turn to page 13 of your	12:29:48
7	declaration?	12:29:52
8	A Okay.	12:29:57
9	Q So on page 13, section A states	12:29:59
10	"Classifying Users Based on Proximity." Do you	12:30:02
11	see that?	12:30:06
12	A Yes, I do.	12:30:06
13	Q And you provide this section because you	12:30:07
14	think this is relevant technology background to	12:30:10
15	understanding the patent; correct?	12:30:13
16	A Yes. I -- yes.	12:30:16
17	Q Can you go to paragraph 36?	12:30:20
18	A Yes.	12:30:25
19	Q You stated, and I quote, "Many devices	12:30:26
20	that classified users based on their proximity to	12:30:31
21	the device were known in the art."	12:30:34
22	Is that right?	12:30:39

1	A	Is it right that they were known or is it	12:30:39
2		right that I was stating that?	12:30:41
3	Q	Do you see that?	12:30:42
4	A	I do.	12:30:45
5	Q	Do you understand the '377 patent to	12:30:46
6		describe classifying users based on proximity --	12:30:51
7	THE REPORTER:	Sorry, counsel. Could you	12:30:55
8		slow down and say that again? Sorry.	
9	MR. TO:	Yeah, sure. Sorry.	12:30:57
10	Q	Do you understand the '337 patent to	12:30:58
11		describe classifying users based on proximity	12:31:01
12		between the user and the device?	12:31:04
13	A	Yes.	12:31:07
14	Q	You discuss Kim, a reference named Kim in	12:31:11
15		paragraph 36 of your declaration; correct?	12:31:16
16	A	Yes.	12:31:19
17	Q	And you stated that -- you stated that Kim	12:31:19
18		collects context information associated with the	12:31:22
19		user to determine whether a user is a first	12:31:25
20		specified user; is that right?	12:31:28
21	A	That's what the declaration states, yes.	12:31:32
22	Q	And this context information may include	12:31:35

1 distance information detected by the user? 12:31:38

2 MR. REEVES: Objection. Form. 12:31:44

3 A If you're asking about whether I agree 12:31:47

4 that the Kim reference states that, I'd like to 12:31:51

5 have a look at the reference which I don't have in 12:31:54

6 front of me. If you're asking whether the 12:31:56

7 declaration states that I say that, that's clearly 12:31:59

8 true. 12:32:02

9 Q Do you understand Kim's determination of 12:32:12

10 whether a user is a first specified user based on 12:32:14

11 distance to be a classification in the context of 12:32:18

12 the '337 patent? 12:32:22

13 MR. REEVES: Objection. Form. Scope. 12:32:24

14 Calls for a legal conclusion. 12:32:33

15 A In answering this question do you mind if 12:32:34

16 I have a look at the Kim reference while I form my 12:32:37

17 answers? 12:32:40

18 Q We can get to that later. Just based on 12:32:40

19 what you have in your declaration. 12:32:43

20 MR. REEVES: Same objections. 12:32:46

21 A Well, having -- it's stated in the 12:32:53

22 declaration that Kim reference teaches classifying 12:32:56

1	voices based on proximity between the speaker and	12:33:02
2	the device.	12:33:06
3	Q And would that be a classification as used	12:33:12
4	and described in the '337 patent?	12:33:17
5	MR. REEVES: Objection. Form. Calls for	12:33:20
6	a legal conclusion. Asked and answered.	12:33:22
7	A I assume that I still have to answer.	12:33:28
8	Could you repeat the question?	12:33:31
9	Q Yeah. So what -- what Kim described or	12:33:35
10	discloses -- strike that.	12:33:40
11	So what -- do you understand Kim's	12:33:41
12	determination of whether a first -- a user is a	12:33:46
13	first specified user based on distance, do you	12:33:49
14	understand that to mean classification?	12:33:53
15	MR. REEVES: Objection. Form. Asked and	12:33:55
16	answered. Calls for a legal conclusion.	12:33:59
17	A I'd like to remind you that the Kim	12:34:02
18	reference is not one of the references that we use	12:34:05
19	as part of the grounds for our response for, in	12:34:08
20	the declaration. Because of that I reviewed it at	12:34:13
21	the time that the declaration was prepared but not	12:34:19
22	so much recently. So if you'd like me to opine on	12:34:21

1	Kim, I'd like to do it with the Kim reference in	12:34:24
2	front of me. Otherwise you're just, you know,	12:34:28
3	relying on faulty recollections.	12:34:32
4	Q Okay. We can come back to this later.	12:34:37
5	Can you move on to paragraph 37 of your	12:34:40
6	declaration?	12:34:43
7	A Yes.	12:34:45
8	Q Let me know --	12:34:45
9	A I'm there.	12:34:50
10	Q Here you discuss a reference called	12:34:51
11	Aoyama; right?	12:34:53
12	A Yes.	12:34:56
13	Q So Aoyama discloses determining a user	12:34:56
14	state such as whether a user is stopped, walking	12:34:59
15	or running; is that right?	12:35:05
16	A Yes.	12:35:06
17	Q And you opine in your declaration that a	12:35:07
18	POSITA would have understood that determining	12:35:09
19	whether a user is stopped, walking or running	12:35:11
20	requires the device to calculate its distance from	12:35:14
21	the user at sequential time intervals; correct?	12:35:17
22	A That's what I state, yes.	12:35:21

1 Q Do you understand Aoyama's determination 12:35:24
2 of user states to be a classification in the 12:35:27
3 context of the '337 patent? 12:35:30

4 MR. REEVES: Objection. Form, scope, and 12:35:35
5 it calls for a legal conclusion. 12:35:37

6 A Once again, in answering that, for the 12:35:39
7 same reason, I'd like to have a copy of the Aoyama 12:35:41
8 reference in front of me. Do you mind if I do 12:35:45
9 that? 12:35:48

10 Q We can come to that later. So looking at 12:35:48
11 paragraph 37 of your declaration -- 12:35:52

12 A Yes. 12:35:55

13 Q -- you -- the information in there is not 12:35:57
14 sufficient for you to have an opinion as to 12:36:00
15 whether that's a classification as used and 12:36:03
16 described by the '337 -- 12:36:06

17 MR. REEVES: Objection. Sorry. 12:36:07
18 Objection. Misstates testimony. Form. Calls for 12:36:10
19 a legal conclusion. 12:36:13

20 A I have my own opinions, but this is an 12:36:16
21 important question in which much may depend, and 12:36:20
22 therefore, I'd like to answer it in the context of 12:36:29

1	inspecting the reference itself.	12:36:33
2	Q Okay. We can come back to this later.	12:36:39
3	Can you turn to paragraph 47 of your declaration?	12:36:41
4	A Okay.	12:36:54
5	Q So in paragraph 47 you stated, and I	12:36:56
6	quote, "When the voice is classified as the first	12:36:59
7	voice, e.g., nearer than a threshold distance."	12:37:02
8	Do you see that?	12:37:12
9	A Yes.	12:37:13
10	Q And then you went on to state, "When the	12:37:14
11	voice is classified as the second voice, e.g.,	12:37:16
12	further than the threshold distance."	12:37:20
13	Do you see that?	12:37:23
14	A I do.	12:37:24
15	Q Do you understand nearer or further than a	12:37:25
16	threshold distance to be a voice classification in	12:37:28
17	the context of the '337 patent?	12:37:31
18	MR. REEVES: Objection. Form. Calls for	12:37:33
19	a legal conclusion.	12:37:40
20	A My interpretation is that the device is	12:37:40
21	making decision based on a measurement of	12:37:45
22	distance. So that would be a classification.	12:37:49

1 Q Just to be clear, you're talking about the 12:37:56
2 '337 patent just now; right? 12:37:58

3 A I'm talking about the '337 patent, that's 12:38:03
4 correct. 12:38:14

5 Q So would you -- would you also understand 12:38:14
6 if the device is making decision based on distance 12:38:18
7 that it would be a voice classification? 12:38:21

8 MR. REEVES: Objection. Form. Asked and 12:38:26
9 answered. 12:38:28

10 A It would have to depend on what the input 12:38:28
11 to the device is. Devices can make -- well, let 12:38:36
12 me stop there. 12:38:42

13 Q So whether -- whether something is a 12:38:50
14 classification or a voice classification depends 12:38:53
15 on the input to the device; is that right? 12:38:57

16 A The term voice classification, well, is -- 12:39:05
17 it would depend to my mind both on what the input 12:39:13
18 to the device is and, for that matter, what the 12:39:18
19 output from the device is. 12:39:21

20 Q Can you elaborate on that? Why would -- 12:39:25
21 why would that depend on the input and the output? 12:39:28

22 MR. REEVES: Objection. Form. Asked and 12:39:32

1	answered.	12:39:36
2	A Well, in considering the question of voice	12:39:36
3	classification there's a little bit of semantic	12:39:39
4	ambiguity. The question is voice classification.	12:39:43
5	Is that classification based on the voice that's	12:39:48
6	input or is it a classification that affects voice	12:39:52
7	that's output? At various times in my life I've	12:39:57
8	interpreted that phrase in different ways.	12:40:01
9	Q What was the interpretation you applied	12:40:07
10	when you were analyzing the claims?	12:40:10
11	MR. REEVES: Objection.	12:40:15
12	A At the end --	
13	MR. REEVES: Form.	12:40:16
14	A Sorry. At the end of the day I concluded	12:40:17
15	that in the context of paragraph 47 in my	12:40:20
16	declaration we were talking about classifying on	12:40:28
17	the basis of voice that's input to the device.	12:40:32
18	Q So if -- if the input to the device is	12:41:09
19	voice and that voice is used to determine	12:41:13
20	distance, that in your view would be a voice	12:41:21
21	classification; is that right?	12:41:23
22	MR. REEVES: Objection. Objection. Form.	12:41:25

1 Incomplete hypothetical. Calls for speculation. 12:41:36

2 Calls for a legal conclusion. 12:41:39

3 A Could you give me a more specific example? 12:41:40

4 Q I'm just trying to understand your 12:41:43

5 testimony just now. You stated that whether 12:41:44

6 something is a classification or a voice 12:41:48

7 classification depends on the input; right? 12:41:51

8 A It depends on multiple things. In this 12:41:55

9 particular situation we're talking about 12:42:01

10 classification based on distance. So that's going 12:42:03

11 to depend both on how the distance is determined 12:42:07

12 and in what fashion and also what the input to the 12:42:13

13 device might be. 12:42:17

14 Q How would whether it is a voice 12:42:27

15 classification or not depend on how the distance 12:42:30

16 is determined? 12:42:34

17 MR. REEVES: Objection. Form. 12:42:35

18 A In this particular example for this 12:42:37

19 particular use case we're talking about the 12:42:42

20 classification being based on a so-called 12:42:49

21 proximity sensor, and, therefore, the result of 12:42:52

22 the classification will depend on what the reading 12:42:59

1 of the proximity sensor tells us. 12:43:03

2 Q Okay. And where does the voice input come 12:43:12

3 into play in this scenario? 12:43:16

4 MR. REEVES: Objection. Form. 12:43:20

5 A As you stated, the voice input is the 12:43:23

6 input. We're classifying the voice that's input 12:43:26

7 based on reading of the proximity sensor. 12:43:32

8 Q Can you go to -- can you pull up Exhibit 12:43:46

9 1001? 12:43:50

10 A Which one is that? I have it. Thank you. 12:43:55

11 (Deposition Exhibit 1001 was introduced
12 for identification.) 12:44:03

13 Q Do you recognize Exhibit 1001? 12:44:03

14 A Yes, I do. 12:44:06

15 Q What is it? Can you state that for the 12:44:08
16 record, please? 12:44:12

17 A Yes. Exhibit 1001 is the US patent by 12:44:12

18 Tatsumi Naganuma, Patent No. 11,069,337, which we 12:44:18

19 refer collectively as the '337 patent. 12:44:26

20 Q Thank you. What is the field of 12:44:30

21 technology described in this patent? 12:44:33

22 MR. REEVES: Objection. Form. Outside 12:44:36

1 the scope. Calls for speculation. Calls for a 12:44:38

2 legal conclusion. 12:44:46

3 A Could you repeat the question again, 12:44:47

4 please? 12:44:49

5 Q What is the field of technology described 12:44:49

6 in the '337 patent? 12:44:51

7 MR. REEVES: Same objections. 12:44:54

8 A In general, the patent concerns a device 12:44:57

9 which takes speech input and also performs some 12:45:02

10 other measurements on the general environment 12:45:09

11 including distance and then modifies or 12:45:16

12 manipulates its output based on the speech input 12:45:21

13 and also based on its reading of the physics of 12:45:27

14 the world, including where the speaker is relative 12:45:33

15 to the, to the recording device. 12:45:36

16 Q So what is the -- what is the invention 12:45:51

17 described in the specification of the '337 patent? 12:45:57

18 MR. REEVES: Objection. Form. Asked and 12:46:01

19 answered. 12:46:01

20 A Well, why don't we go to the claims. 12:46:06

21 Q Well, I'm not -- I'm not asking you what 12:46:08

22 is claimed. I'm asking you what the specification 12:46:10

1 describes. 12:46:14

2 MR. REEVES: Same objections. 12:46:15

3 A The specification describes a plurality of 12:46:26

4 voice processing procedures. It talks about 12:46:33

5 multiple ways of classifying speech, for example, 12:46:38

6 based on distance, also presence or absence of 12:46:43

7 whispering, a couple of other things that I could 12:46:47

8 look at, and then makes a decision about what 12:46:53

9 information is output by the device that's likely 12:46:59

10 to be most appropriate for the needs of the human 12:47:03

11 user of the device. 12:47:06

12 Q So what's the plain and ordinary meaning 12:47:26

13 of the term voice that you apply when analyzing 12:47:29

14 the claims? 12:47:33

15 A The voice I consider to be the natural 12:47:37

16 productions that humans make in communicating with 12:47:41

17 each other via speech and also that humans make in 12:47:47

18 talking to machines using speech. 12:47:51

19 Q And what's the plain and ordinary meaning 12:47:57

20 of classify that you apply when analyzing the 12:47:59

21 claims? 12:48:03

22 MR. REEVES: Objection. Outside the 12:48:05

1 scope.

12:48:07

2 A In general, in a broad variety of
3 technical problems known as data recognition or
4 pattern classification, the system makes
5 measurements about things that come in, which in
6 this case could include both the speech itself and
7 also the readings of the proximity sensor, and
8 then makes a decision about the nature of the
9 input and in some cases about the nature of the
10 output but primarily the nature of the input.

12:48:10

12:48:16

12:48:20

12:48:25

12:48:30

12:48:34

12:48:39

12:48:43

12:48:46

11 Q So I'm just trying to understand your
12 testimony just now. So to classify is to make
13 decision about the nature of the input and output?

12:48:51

12:49:20

12:49:24

14 MR. REEVES: Objection. Form, to the
15 extent it misstates testimony.

12:49:30

12:49:32

16 A Just to clarify, the classification makes
17 a decision about the nature of the input. In the
18 particular technology disclosed by the '337
19 patent, that decision is used as the basis for
20 modifying the output. I apologize for conflating
21 the two, but the classification is processing the
22 input.

12:49:36

12:49:42

12:49:46

12:49:55

12:49:59

12:50:02

12:50:06

1 Q So when you're classifying the input, what 12:50:17
2 decision is being made regarding the input that 12:50:21
3 would make it the classification? 12:50:25

4 MR. REEVES: Objection. Form. 12:50:28

5 A The '337 patent is very general in terms 12:50:30
6 of the wording of the claims. The specification 12:50:36
7 includes a few examples including, for example, 12:50:40
8 the presence or absence of whispering, distance 12:50:44
9 between the speaker and the device and at least 12:50:51
10 one or possibly two more which I could specify by 12:50:55
11 looking through the document, if you wish. 12:51:01

12 Q Yes, please. Can you please do that? 12:51:10

13 A All right. Well, in column 5, for 12:51:14
14 example, of the specification of the patent 12:52:05
15 there's a discussion of technology referred to as 12:52:08
16 keyword detection in which words are detected that 12:52:12
17 are used to modify the nature of the output. 12:52:19

18 Q Does it say anything else? 12:52:35

19 A Well, I should mention that in addition to 12:52:37
20 and in parallel to the kinds of speech 12:52:41
21 classification decisions that are made based on 12:52:49
22 physical characteristics such as distance, 12:52:53

1 presence or absence of whispering, et cetera, 12:52:55
2 there also is another series of decisions that are 12:52:59
3 made based on the acoustic and the phonetic 12:53:03
4 content and the semantic content of what's 12:53:08
5 actually uttered. Part of the teachings that are 12:53:13
6 disclosed are providing information to the user 12:53:17
7 such as weather or -- let's see. What else is 12:53:21
8 cited? Possible geographic location and things 12:53:26
9 like that. So that's also a classification 12:53:32
10 decision. 12:53:35

11 Q I've noticed that you've been using the 12:53:40
12 phrase "speech classification" and "voice 12:53:42
13 classification" interchangeably. How is voice 12:53:44
14 different from speech or sound? 12:53:49

15 MR. REEVES: Objection. Form. Outside 12:53:53
16 the scope. 12:53:56

17 A In this context I have been using those 12:53:57
18 terms somewhat interchangeably. Sound encompasses 12:54:00
19 a lot of nonspeech production such as audio, 12:54:07
20 music, wind noise, hurricane noise. 12:54:14

21 Humans can also produce, you know, 12:54:18
22 nonverbal expressions such as laughter or screams, 12:54:25

1 things like that. When I speak about speech 12:54:29
2 and/or voice, and I do use those terms somewhat 12:54:33
3 interchangeably, I'm talking about the subset of 12:54:38
4 things that humans utter that are directed toward 12:54:41
5 communication of an idea or a request or something 12:54:46
6 like that, normal conversation. 12:54:51

7 Q So in your analysis of the claims do you 12:54:59
8 see the phrase "speech" and "voice" differently? 12:55:05

9 MR. REEVES: Objection. Form. Outside 12:55:09
10 the scope. 12:55:15

11 A So as we discussed, voice technically is a 12:55:26
12 more general label than speech. Voice could 12:55:34
13 include laughter, screaming, other kinds of 12:55:42
14 nonverbal productions, but in the claims and in 12:55:47
15 the specification, as I interpret it, the only 12:55:55
16 voice that's referred to in the claims or in the 12:56:01
17 patent -- I'm sorry -- in the claims or in the 12:56:05
18 specification of the patent appear to be speech. 12:56:07
19 So for that reason I've been using the two terms 12:56:11
20 interdependent and together without drawing a 12:56:16
21 distinction. 12:56:20

22 Q So what constitute a different class of 12:56:44

1 voices in the context of the '337 patent? 12:56:47

2 MR. REEVES: Objection. Form. Outside 12:56:52

3 the scope. 12:56:54

4 A Both the claims of the patent and the 12:56:57

5 specification associated with those claims are 12:57:04

6 very general in terms of what they, what are 12:57:06

7 referred to as classes, and personal opinion was 12:57:10

8 that that was deliberate. Some examples are 12:57:15

9 provided in the specifications, including the ones 12:57:19

10 that I've already named: Distance, classification 12:57:22

11 based on distance, based on presence or absence of 12:57:28

12 whispering, based on a few other things. But the 12:57:31

13 claims themselves do not define what the classes 12:57:39

14 are supposed to be. 12:57:44

15 Q The specification talks about a user 12:57:51

16 speaking in, in more than one voice; right? 12:57:53

17 MR. REEVES: Objection. Form. 12:57:59

18 A The specification talks about various 12:58:02

19 different modes of speaking and various different 12:58:05

20 physical conditions such as being near the 12:58:11

21 microphone, being at a greater distance from the 12:58:15

22 microphone, and labels those different conditions 12:58:20

1 first voice and second voice. With a possible 12:58:25
2 exception of whispering and volume, these aren't 12:58:30
3 even necessarily things that the speaker does on a 12:58:34
4 conscious basis. 12:58:39

5 Q So in the context of whispering, what does 12:59:03
6 the specification say about determining whether 12:59:09
7 something is a whisper or not? 12:59:13

8 MR. REEVES: Objection. Form. 12:59:16

9 A The specification -- and let me identify 12:59:24
10 exactly where it is. This would, of course, be a 12:59:31
11 lot faster if I could search the text 13:00:23
12 electronically from a PDF file, but I know I can't 13:00:28
13 do that. 13:00:30

14 Q Oh no, you're welcome to do so. That's 13:00:31
15 why I provided -- 13:00:33

16 A Yeah, I don't have a copy of it, so if 13:00:35
17 you'd like to point me where it is, I can answer 13:00:37
18 your question faster. I know it's in there though 13:00:40
19 because I have some thoughts about that in bottom 13:00:46
20 notes. So if you'd like to point me to the 13:00:48
21 column, I can respond to that. 13:00:50

22 Whispering is in the, is in the spec 13:00:52

1	somewhere, and I'm looking for it with my eyes	13:00:54
2	slowly.	13:00:59
3	Q So maybe I can help speed this up. Maybe	13:01:01
4	if you go to column 7.	13:01:04
5	A Thank you. Okay. So I see, and thank you	13:01:07
6	very much. Around 56, column 7, line 56, "the	13:01:33
7	voice is determined to be a whisper as a result of	13:01:39
8	analysis."	13:01:42
9	Then it goes on to say that "the voice	13:01:45
10	classifies to be the first when one voice is	13:01:47
11	determined not to be a whisper. A whisper is an	13:01:51
12	unvoiced voice spoken without vibrating the vocal	13:01:54
13	cords, but it is not limited to the unvoiced voice	13:01:58
14	spoken without vibrating the vocal cords as long	13:02:01
15	as it is classified to the second voice by, for	13:02:04
16	example, a method described later."	13:02:08
17	So that statement is correct, that we,	13:02:11
18	when we whisper, what we do is deliberately	13:02:20
19	disable the vocal cords and not invoke them in	13:02:24
20	producing sound.	13:02:27
21	Now, if memory serves, there is a	13:02:28
22	reference to whispering later in the specification	13:02:33

1	that's based specifically on the volume or the	13:02:36
2	intensity of the waveform without specific	13:02:41
3	reference to vocal fold, vocal cord or vocal fold	13:02:45
4	vibration. If you'd like to point me to that, I'd	13:02:50
5	be happy to comment further, but it's what I think	13:02:55
6	is what's referred to as later in the document.	13:02:59
7	Q Yeah. Why don't you read column 7, line	13:03:02
8	64, to column 8, line 37, just to yourself, you	13:03:06
9	don't have to read it out loud, and just let me	13:03:11
10	know when you're done.	13:03:14
11	A Sure.	13:03:15
12	Okay. I read that.	13:04:39
13	Q So what you just read is where the '337	13:04:39
14	patent described how to determine whether a voice	13:04:43
15	is a whisper or not; right?	13:04:45
16	A Mm-hmm.	13:04:47
17	MR. REEVES: Objection. Form. Outside	13:04:47
18	the scope.	13:04:49
19	Q Sorry. Can you say yes or no for the	13:04:54
20	record?	13:04:57
21	A What -- what's the question?	13:04:57
22	Q So column 7, line 64, to column 8, line	13:05:01

1	34, so the paragraph you just read, that's where	13:05:07
2	the '337 patent is describing how to determine	13:05:12
3	whether a voice is a whisper or not; correct?	13:05:17
4	MR. REEVES: Same objections.	13:05:20
5	A Yeah. It describes various methods for	13:05:22
6	identifying whispers. Yes. It does do that.	13:05:25
7	Q Can you turn to Claim 1 on page 17 of the	13:05:36
8	'337 patent?	13:05:39
9	A Yes.	13:05:45
10	Q Can you -- can you read the first	13:05:48
11	limitation of Claim 1 where it recites "a	13:05:50
12	proximity sensor configured to calculate a	13:05:54
13	distance between a user and the voice-content	13:05:57
14	control device"?	13:06:00
15	A Yeah, that is the first -- you stole my	13:06:01
16	thunder.	13:06:04
17	Q And then towards the end of the second	13:06:04
18	limitation it says "based on the distance between	13:06:08
19	the user and the voice-content control device";	13:06:12
20	right?	13:06:17
21	A That's correct.	13:06:17
22	Q So when you're analyzing the claims, do	13:06:17

1	you understand the distance, quote, "the distance	13:06:20
2	between the user and the device" as recited in the	13:06:23
3	second limitation as referring to the distance	13:06:27
4	calculated by the proximity sensor?	13:06:29
5	MR. REEVES: Objection. Form.	13:06:32
6	A It is my inference, indeed, that the	13:06:39
7	distance between the user and the device is what	13:06:41
8	the proximity sensor is intended to calculate.	13:06:44
9	Q So if we look at the first part of the	13:06:50
10	second limitation where it says "a voice	13:06:53
11	classifying unit configured to analyze the voice	13:06:56
12	spoken by user."	13:06:58
13	A Yes.	13:07:02
14	Q I lost my screen for a second. Strike	13:07:08
15	that. Let me start --	13:07:11
16	A Yeah, I missed the question there.	13:07:11
17	Q Yeah. So in the first half of the second	13:07:13
18	limitation where it states "a voice classifying	13:07:18
19	unit configured to analyze a voice spoken by a	13:07:21
20	user and acquired by a voice acquiring unit to	13:07:24
21	classify the voice as either one of a first voice	13:07:27
22	or a second voice," this analysis of the voice is	13:07:31

1 not for the purpose of determining distance; 13:07:39

2 right? That is determined by the proximity 13:07:41

3 sensor? 13:07:44

4 MR. REEVES: Objection. Form. 13:07:45

5 A Well, as we've already discussed, there 13:08:03

6 are multiple ways in which a voice can be 13:08:08

7 classified, a voice classification can take place, 13:08:13

8 and this really depends on how the classification 13:08:20

9 is performed. Some classifications that are cited 13:08:24

10 in the specification of the patent are based 13:08:31

11 specifically on distance. Other classifications 13:08:35

12 such as the presence or absence of whispering, 13:08:38

13 which is discussed in the sections that we've just 13:08:43

14 talked about, are based on the nature of the 13:08:45

15 speech that's coming in which is not dependent on 13:08:48

16 the nature of distance. 13:08:51

17 So what I'm suggesting is that the term 13:08:53

18 voice classification is sufficiently general to 13:08:58

19 include, and this is as used in this patent 13:09:03

20 language, both to include decisions that are made 13:09:08

21 about the nature of voice that are based on 13:09:12

22 distance calculations and other decisions that are 13:09:15

1 made without relying on distance calculations. 13:09:20

2 Q Sorry. Dr. Stern, I don't think you 13:09:32

3 answered my question. Let's try this again. 13:09:35

4 So you previously -- earlier you stated 13:09:37

5 that you understand "based on the distance between 13:09:39

6 the user and the voice-content control device" in 13:09:44

7 the second limitation that you -- you just stated 13:09:49

8 you understand this to be the distance calculated 13:09:53

9 by the proximity sensor in limitation -- in the 13:09:57

10 first limitation; right? 13:10:00

11 A I'm sorry -- 13:10:02

12 MR. REEVES: Objection. Objection. Form. 13:10:03

13 A I'm sorry. I was listening to the 13:10:05

14 question without reading the patent claims at the 13:10:07

15 same time. Always dangerous. The second 13:10:11

16 paragraph of Claim 1 very specifically says based 13:10:16

17 on the distance between the user and the 13:10:21

18 voice-control device. 13:10:23

19 Q Right. And that distance is referring to 13:10:26

20 the distance calculated by the proximity sensor; 13:10:30

21 right? I think that's what you -- 13:10:34

22 MR. REEVES: Objection. Form. 13:10:36

1	Q -- said earlier?	13:10:37
2	MR. REEVES: Asked and answered.	13:10:39
3	MR. TO: Do you mind letting me finish my	13:10:41
4	question before you object?	13:10:43
5	MR. REEVES: I'm sorry. Repeat the	13:10:44
6	question, please.	13:10:46
7	Q So the distance -- the distance between	13:10:59
8	the user and the voice-content control device in	13:11:02
9	the second limitation is referring to the distance	13:11:05
10	that was calculated by the proximity sensor in the	13:11:09
11	first limitation; is that right?	13:11:13
12	A Well, the second limitation doesn't	13:11:18
13	specify that explicitly.	13:11:20
14	Q Are you familiar with the concept of	13:11:24
15	antecedent basis, Dr. Stern?	13:11:29
16	A Not as a legal term. So, if you'd like to	13:11:30
17	explain that, I would welcome that.	13:11:35
18	Q That's all right. If you -- if you're not	13:11:37
19	familiar, that's okay.	13:11:41
20	But so your understanding of the claim is	13:11:42
21	that when -- in the second limitation when it's	13:11:47
22	talking about the distance between the user and	13:11:49

1	the voice-content control device, you don't	13:11:52
2	understand that to be referring to the distance	13:11:56
3	calculated by the proximity sensor? It can be any	13:11:59
4	distance; is that right?	13:12:03
5	MR. REEVES: Objection. Form. Misstates	13:12:04
6	testimony.	13:12:07
7	A You understand, of course, that I'm trying	13:12:10
8	to be very careful here, as I'm sure you are.	13:12:12
9	Q I appreciate that.	13:12:16
10	A Indeed, the first limitation explicitly	13:12:17
11	discloses a proximity sensor. The second	13:12:22
12	limitation discusses classification based on	13:12:27
13	distance. There's a reasonable implication that	13:12:31
14	the two are related, but sticking strictly to the	13:12:38
15	language of the limitations, the second limitation	13:12:46
16	does not disclose that the distance calculation is	13:12:49
17	based on the proximity sensor that is described in	13:12:54
18	the first limitation. They could have done that	13:12:58
19	but didn't, but it does -- I'm not sure that it	13:13:01
20	matters in terms of the interpretation of the	13:13:08
21	claims vis-à-vis the patent language -- I'm	13:13:11
22	sorry -- the prior art, the teachings of the prior	13:13:14

1 art vis-à-vis the claims in the patent language. 13:13:17

2 Q So just to clarify, when you were 13:13:25

3 analyzing the claims, you did not read the second 13:13:27

4 limitation to require the distance be calculated 13:13:30

5 by the proximity sensor; is that right? 13:13:35

6 MR. REEVES: Objection. Form. Misstates 13:13:37

7 testimony. 13:13:40

8 A I interpreted the, the second limitation 13:13:42

9 to teach a classification based on distance 13:13:50

10 estimation by any means. 13:13:54

11 Q Thank you. We're going for about an hour. 13:14:04

12 Should we go off the record for -- take a break? 13:14:09

13 MR. REEVES: Sure. 13:14:17

14 A Sure. 13:14:18

15 MR. TO: We'll take ten minutes. 13:14:19

16 THE VIDEOGRAPHER: We're going off the 13:14:19

17 record. The time is 1:14. 13:14:21

18 (A recess was taken.) 13:19:46

19 THE VIDEOGRAPHER: We are going back on 13:24:20

20 the record. The time is 1:24. 13:24:27

21 BY MR. TO: 13:24:32

22 Q Welcome back, Dr. Stern. Did you speak to 13:24:34

1 either of your attorneys during the break? 13:24:37

2 A Yes. 13:24:41

3 Q Did you discuss the deposition with your 13:24:42
4 attorney? 13:24:46

5 A No. 13:24:48

6 Q Okay. So let's jump back in. We were -- 13:24:51
7 earlier we were talking about the concept of the 13:24:57
8 patent, the '337 patent describing a user having 13:25:01
9 different voices. 13:25:05

10 A Yes. 13:25:07

11 Q Can -- a user can speak in the same voice 13:25:10
12 while moving closer or further from the device; 13:25:14
13 right? 13:25:17

14 MR. REEVES: Objection. Form. 13:25:17

15 A Repeat the question, please. 13:25:21

16 Q Yeah. Can a user -- can a user speak in 13:25:23
17 the same voice while moving closer or further from 13:25:27
18 the device? 13:25:32

19 MR. REEVES: Objection. Form. 13:25:32

20 A In the world of the patent? 13:25:33

21 Q That's right. 13:25:36

22 A The '337 patent describes different voices 13:25:37

1 based on distance between the speaker and the 13:25:42

2 microphone. 13:25:46

3 Q Okay. But if you recall our discussion 13:25:49

4 earlier about a voice being a whisper or not a 13:25:51

5 whisper. 13:25:55

6 A Yes. 13:25:56

7 Q Can a user whisper while moving closer and 13:25:57

8 further from the device? 13:26:02

9 MR. REEVES: Objection. Form. Outside 13:26:04

10 the scope. 13:26:08

11 A Yes. 13:26:08

12 Q So in that case the distance between the 13:26:14

13 user and a device might be different, but the user 13:26:17

14 is still whispering; is that right? 13:26:21

15 MR. REEVES: Objection. Outside the 13:26:24

16 scope. 13:26:32

17 A Yes. 13:26:32

18 Q And earlier you testified that a whisper 13:26:36

19 and not a whisper are two different type of 13:26:41

20 voices; right? 13:26:45

21 MR. REEVES: Objection to the extent it 13:26:46

22 misstates testimony. Form. 13:26:48

1 A I don't believe I stated that. What I did
2 state was that the '337 patent in the
3 specification describes a plurality of
4 classification decisions that could be made. Some
5 of them were explicitly based on distance. One of
6 them at least was presence or absence of
7 whispering.

8 Q Okay. So in the case of presence or
9 absence of whispering, and I think the
10 classification described that as a whisper or not
11 a whisper, a user can be whispering yet moving
12 closer or further from the device. You would
13 agree with that; right?

14 MR. REEVES: Objection. Form. Outside
15 the scope.

16 A That possibility is not addressed in the
17 patent language itself or the spec.

18 Q Okay. But the spec does talk about
19 determining whether a user is whispering or not?

20 A Yes, it does.

21 Q And the spec also talks about distance
22 between the user and the device; right?

1 A Yes, it does. 13:28:09

2 Q So my question is, can a user be 13:28:10

3 whispering in different distances between the 13:28:13

4 device? 13:28:16

5 MR. REEVES: Objection. Form. 13:28:18

6 A In principle, yes. That condition is not 13:28:23

7 explicitly addressed in the patent. 13:28:27

8 Q But in principle the user can be speaking 13:28:43

9 in the same voice yet be in different distances 13:28:46

10 from the device; right? 13:28:48

11 MR. REEVES: Objection. Form. 13:28:51

12 A When you say "in the same voice," do you 13:28:57

13 mean the colloquial plain English sense of voice 13:29:03

14 or do you mean the very specific classification of 13:29:11

15 voices as elucidated in the '337 patent? 13:29:14

16 Q Yeah, I mean that in the context of the 13:29:23

17 '337 patent. 13:29:26

18 A Say it again, please? 13:29:28

19 Q I mean that in the context of the '337 13:29:30

20 patent. 13:29:33

21 A Okay. And now would you mind repeating 13:29:37

22 the original question? 13:29:40

1	Q Sure. A user can be speaking in the same	13:29:42
2	voice yet be in different distances from the	13:29:48
3	device; is that right?	13:29:51
4	MR. REEVES: Objection. Form.	13:29:53
5	A According to the '337 patent, by moving	13:29:56
6	from one distance to another you could be	13:30:02
7	classified as moving from the first voice to the	13:30:06
8	second voice, or vice versa.	13:30:10
9	Q Okay. But in the context of determining	13:30:15
10	whether the user is whispering or not?	13:30:28
11	MR. REEVES: Objection. Form.	13:30:34
12	Q If the user is whispering and is -- sorry.	13:30:35
13	Go ahead.	13:30:43
14	MR. REEVES: Sorry. Counsel, is there a	13:30:45
15	question?	13:30:47
16	Q I'm in the middle of my question, but I	13:30:48
17	heard something.	13:30:50
18	A Sorry. Please repeat the question.	13:31:02
19	Q Yeah. So in the context of determining	13:31:07
20	whether the user is whispering or not, if the user	13:31:22
21	is, for example, at distance X versus at distance	13:31:26
22	Y, would the classification change?	13:31:31

1	MR. REEVES: Objection. Form. Incomplete	13:31:36
2	hypothetical.	13:31:42
3	A Yeah, I don't know. The patent does not	13:31:42
4	address that hypothetical situation directly. It	13:31:45
5	only considers independently and in isolation	13:31:49
6	classification based on distance and detection of	13:31:55
7	whispering.	13:31:58
8	Q Let's try this. Can you go to column 8,	13:32:14
9	line 5, for me?	13:32:18
10	A Okay.	13:32:39
11	Q Okay. If the column 8, line 5, starting	13:32:42
12	from line 5, the specification states, and I	13:32:46
13	quote, "For example, the voice classifying unit 38	13:32:48
14	determines the voice as a whisper to classify to	13:32:51
15	the second voice V1B when the peak frequency is	13:32:54
16	equal to or lower than the threshold, and	13:32:58
17	determines a voice as not a whisper to classify to	13:33:02
18	the first voice V1A when the peak frequency is	13:33:06
19	larger than the threshold."	13:33:08
20	So in this context if the user moved away	13:33:12
21	from the device, would the classification change?	13:33:18
22	MR. REEVES: Objection. Form.	13:33:23

1	A	I don't know. That possibility's not	13:33:26
2		addressed explicitly in the claim language or in	13:33:30
3		the specification.	13:33:34
4	Q	Can you determine peak frequency -- can	13:33:45
5		you determine distance based on peak frequency?	13:33:48
6	MR. REEVES:	Objection. Outside the	13:33:53
7		scope.	13:34:00
8	A	In general, frequency alone is not a good	13:34:00
9		indicator of distance. Certainly peak frequency	13:34:05
10		alone won't tell you that.	13:34:11
11	Q	So when the specification talks about a	13:34:14
12		peak frequency threshold, it's determining whether	13:34:18
13		the voice is a whisper or not; right?	13:34:21
14	MR. REEVES:	Objection. Form. Outside	13:34:25
15		the scope.	13:34:29
16	A	What the specification is stating is	13:34:29
17		referring to the volume or the intensity of the	13:34:34
18		signal at the frequency -- at the peak frequency	13:34:40
19		and comparing that to a threshold. They are using	13:34:47
20		that to classify speech as a whisper.	13:34:53
21	Q	And they're not using this to determine	13:34:59
22		distance; correct?	13:35:02

1 MR. REEVES: Objection. Asked and 13:35:03
2 answered. 13:35:07

3 A That's my interpretation. 13:35:07

4 Q And so if, according to the '337 patent, 13:35:20
5 I'm looking at peak frequency to determine whether 13:35:24
6 the user is whispering or not, and I've determined 13:35:28
7 that the user is whispering, in this case if the 13:35:32
8 user is moving away or further from the device or 13:35:38
9 closer to the device, does that have any impact on 13:35:42
10 the classification itself? 13:35:46

11 MR. REEVES: Objection. Form. Asked and 13:35:47
12 answered. Incomplete hypothetical. 13:35:49

13 A First of all, a clarification. The 13:35:53
14 specification does not teach a peak frequency. 13:35:57
15 What it talks about is looking at the frequency at 13:36:01
16 which the intensity is maximum. That's what peak 13:36:04
17 frequency is, I believe, and then measuring the 13:36:08
18 intensity at that frequency. So it's really a 13:36:11
19 measurement of intensity, not frequency. 13:36:14

20 Q Okay. Thank you for that clarification. 13:36:24

21 A Right. 13:36:26

22 Q With that in mind, can you answer my 13:36:27

1 question? 13:36:30

2 MR. REEVES: Same objections. 13:36:31

3 A Right. And just to make sure I do this 13:36:33

4 correctly, could you repeat the question, please? 13:36:38

5 Q Yeah. So when the patent is looking at 13:36:40

6 peak frequency, as you just clarified, intensity 13:36:49

7 frequency to determine whether the user is 13:36:56

8 whispering or not, and the patent -- and the 13:36:59

9 patent has determined that the user is, in fact, 13:37:02

10 whispering, in this case if the user is moving 13:37:05

11 further or closer to the device, does that have 13:37:08

12 any impact on the classification itself? 13:37:11

13 MR. REEVES: Objection. Form. Incomplete 13:37:15

14 hypothetical. 13:37:17

15 A It should not. 13:37:19

16 Q If the user is speaking in the same voice 13:37:49

17 and he or she moves closer to the device, would 13:37:52

18 the volume change? 13:37:56

19 MR. REEVES: Objection. Form. Outside 13:38:00

20 the scope. 13:38:05

21 A If the user is moving closer to the 13:38:05

22 device, the volume normally would increase, and by 13:38:11

1 that I mean the amplitude or the intensity or the 13:38:18
2 energy of the signal received by the microphone, 13:38:24
3 that should increase. 13:38:26

4 Q And if the user is moving away from the 13:38:28
5 device, the volume would normally decrease; right? 13:38:31

6 MR. REEVES: Objection. Form. Outside 13:38:34
7 the scope. 13:38:39

8 A Again, defining volume as just stated, the 13:38:39
9 intensity, energy, amplitude would decrease 13:38:44
10 normally. 13:38:48

11 Q Can you determine whether a user is 13:38:54
12 whispering or not based solely on distance alone? 13:38:57
13 Strike that. 13:39:03

14 MR. REEVES: Objection. Outside the 13:39:03
15 scope. 13:39:05

16 Q Strike that. 13:39:05

17 Can you determine whether a voice is a 13:39:06
18 whisper or not based solely on the distance 13:39:08
19 between the user and the device? 13:39:12

20 MR. REEVES: Objection. Outside the 13:39:13
21 scope. 13:39:15

22 A No. 13:39:15

1 Q Does the distance between the user and the 13:39:26
2 device alone tell you anything about the 13:39:29
3 characteristics of the user's voice? 13:39:31

4 MR. REEVES: Objection. Form. Outside 13:39:35
5 the scope. 13:39:39

6 A In general, no. 13:39:39

7 Q Earlier you testified that you can -- 13:40:02
8 generally when you move closer to the device, the 13:40:07
9 volume of the voice increases, but that's not 13:40:11
10 always true; is that right? 13:40:14

11 A It depends on a lot of things that are 13:40:18
12 well beyond the scope of the patent. It depends 13:40:21
13 on the room acoustics, whether you're outside or 13:40:24
14 in an enclosed room with hard surfaces. So I 13:40:28
15 can't really opine without additional context. 13:40:32

16 Q Would that also -- would one of the 13:40:37
17 factors affect this be the volume that the user is 13:40:39
18 speaking? 13:40:44

19 MR. REEVES: Objection. Form. 13:40:46

20 A I'm sorry. I lost the question with -- 13:40:51
21 could you repeat the original question including 13:40:55
22 the references? 13:40:57

1 Q Yeah. So earlier you testified that,
2 generally, if the user moved closer to the device,
3 the volume of the voice detected by the device
4 would increase, and you say whether that's true or
5 not depends on a lot of things that's out of scope
6 of the patent. I'm asking, is one of those
7 factors the volume in which the user is speaking?

8 MR. REEVES: Objection. Form. Outside
9 the scope.

10 A I'm not sure I understand the question.
11 If the user is speaking more loudly, the signal
12 level received by the device will increase
13 clearly. I thought that at one point -- never
14 mind. So I'm not sure what you're really trying
15 to -- what you're really asking here.

16 Q Yeah. Let me try to clarify. So if we're
17 looking at the volume detected by the device --

18 A Mm-hmm.

19 Q -- you can -- you can look at that volume,
20 if the volume is increasing, you can assume that
21 the user is moving closer to the device, but it
22 might also be true that the user is staying

1 stationary and simply increasing the volume in 13:42:31

2 which he's speaking; is that right? 13:42:33

3 MR. REEVES: Objection. Form. Outside 13:42:37

4 the scope. 13:43:05

5 A There are multiple factors that come into 13:43:05

6 play in terms of the amplitude that's received by 13:43:10

7 the device, and if you'd like to ask me a question 13:43:14

8 specifically in the context of the '337 patent, 13:43:19

9 I'd be happy to address that in full, but this is 13:43:22

10 such an open question that I don't feel 13:43:28

11 comfortable responding in this context. 13:43:32

12 Q If the user increased the volume in which 13:43:43

13 he speaks while remaining stationary, the volume 13:43:46

14 that is acquired by the device would also 13:43:53

15 increase; correct? 13:43:57

16 MR. REEVES: Objection. Form. 13:43:58

17 A Normally that would be true. 13:44:02

18 Q If the user is speaking at the same volume 13:44:06

19 but moving away from the device, the volume 13:44:10

20 acquired by the device would decrease; correct? 13:44:14

21 MR. REEVES: Objection. Form. 13:44:18

22 A And that was also asked and answered, but 13:44:23

1 I said yes to that before. 13:44:26

2 Q So if we put these two scenarios together, 13:44:30

3 if you are moving -- if the user is moving away 13:44:33

4 from the device while increasing the volume in 13:44:36

5 which he speaks, we can't really know what would 13:44:39

6 happen to the voice that is acquired by the 13:44:43

7 device; right? 13:44:47

8 MR. REEVES: Objection. Form. Outside 13:44:48

9 the scope. 13:44:54

10 A I can't answer that plainly. There are 13:44:54

11 other factors that come into play as well. 13:44:58

12 Q Let everything else be the same. 13:45:02

13 MR. REEVES: Same objections. 13:45:06

14 A Again, I can't answer that. Among other 13:45:08

15 things, as you increase the volume, the nature of 13:45:12

16 the sound that you make will change, and that 13:45:16

17 could be detectable as well. 13:45:20

18 Q How would the nature of the sound you make 13:45:27

19 change when you increase your volume? 13:45:30

20 MR. REEVES: Objection. Form. Outside 13:45:34

21 the scope. 13:45:46

22 A If you'd like to have a conversation about 13:45:46

1 that off the record, I'd be happy to explain 13:45:49
 2 fully, but my instructions have been to opine 13:45:52
 3 things that are within the scope of the patent, 13:45:58
 4 and this to me strikes me as outside the scope of 13:46:01
 5 the patent. 13:46:07

6 Q But, sir, it's your testimony. You just 13:46:18
 7 testified that the nature of the sound would 13:46:21
 8 change when you increase your volume. I'm just 13:46:23
 9 asking you to clarify. What do you mean by that? 13:46:26

10 MR. REEVES: Objection. Form. 13:46:29

11 A And what I just said is that I'm 13:46:30
 12 uncomfortable going beyond that because it's not 13:46:33
 13 relevant to the patent. 13:46:40

14 Q Does the nature of the voice change when 13:46:47
 15 you increase the volume, voice as -- 13:46:53

16 MR. REEVES: Objection. Form.

17 Q -- as described in the, previously in the 13:46:59
 18 '337 patent? 13:47:00

19 A I'm sorry. Say that again, please. 13:47:02

20 Q In the context of the '337 patent does the 13:47:04
 21 nature of the voice change when you increase the 13:47:07
 22 volume in which you speak? 13:47:09

1 MR. REEVES: Objection. Form. 13:47:12

2 A I don't believe that that's discussed 13:47:17

3 within the specification of the patent. If you'd 13:47:20

4 like to point me to a particular location where 13:47:22

5 you find it, I'd be happy to opine on that. 13:47:27

6 Q You understand you're bringing your 13:47:31

7 expertise as an expert into this case; right? 13:47:33

8 A I do, and I understand that my marching 13:47:37

9 orders are to interpret the patent in terms of my 13:47:45

10 expertise, not necessarily to opine in general for 13:47:50

11 things that, as far as I can tell, go beyond the 13:47:57

12 scope of the patent. 13:48:01

13 Q Okay. But I do think this is within the 13:48:01

14 scope of the patent. The patent talks about 13:48:04

15 different voices and increasing and decreasing 13:48:06

16 volume. So I'm just asking you, does the nature 13:48:08

17 of the voice change when you increase the volume 13:48:12

18 of your voice? 13:48:17

19 MR. REEVES: Objection. Form. 13:48:19

20 A The patent -- the patent really does not 13:48:21

21 address that, the nature of the changes, that do 13:48:29

22 happen when you increase and decrease your voice. 13:48:34

1 That's just not part of the teachings in the 13:48:37
2 patent. 13:48:40

3 Q But voice -- different voices is part of 13:48:41
4 the claim. So you would have to apply your 13:48:45
5 understanding in analyzing the claims. 13:48:47

6 MR. REEVES: Objection. Form. 13:48:53

7 A Different voices here are described very 13:48:59
8 specifically, and they're described in terms of 13:49:03
9 distance between the user and the microphone, 13:49:09
10 things like that, which is the context within the, 13:49:18
11 within the claims. The only classification that I 13:49:27
12 would consider to be based on a different voice is 13:49:31
13 the presence or absence of whispering. So I'm 13:49:37
14 charged with opining about the nature of the voice 13:49:44
15 within the context of the teachings in the patent, 13:49:51
16 and the teachings in the patent do not go into the 13:49:56
17 arena of how the spectral characteristics, other 13:49:59
18 ancillary distortion, things that might happen 13:50:05
19 when you start shouting, for example, the patent 13:50:09
20 doesn't discuss that. It's irrelevant. 13:50:12

21 Q But do you as an expert in the field know 13:50:16
22 whether the nature of the voice changed when you 13:50:20

1	change your volume?	13:50:22
2	MR. REEVES: Objection. Form.	13:50:25
3	A In general I do.	13:50:28
4	Q Okay. Can you -- can you please tell us	13:50:31
5	what that is?	13:50:34
6	MR. REEVES: Objection. Outside the	13:50:37
7	scope.	13:50:41
8	A Again, only insofar as it's relevant to	13:50:41
9	the patent, and it's not. So I'm going to very	13:50:49
10	politely decline from answering that question	13:50:54
11	directly.	13:50:56
12	Q Respectfully, I don't think it is for, for	13:50:57
13	you to decide whether it is relevant to the patent	13:50:59
14	or not.	13:51:02
15	A Okay. So at that point I don't know what	13:51:05
16	to do.	13:51:08
17	Q If you -- so if you do know the answer to	13:51:12
18	the question, I would appreciate you answer it.	13:51:15
19	If you don't know, you can say you don't know.	13:51:17
20	A Can I request that I go off -- you know,	13:51:20
21	can I have an off-line discussion with the	13:51:25
22	attorneys?	13:51:27

1 Q I don't think you can discuss your
2 answers.

3 A Okay. Sure enough. In that case I'll
4 stand where I was, which was that you're asking
5 whether the nature of the speech is going to
6 change when you increase the volume? I'll say a
7 few things. Clearly the intensity will change,
8 but as you continue to increase the volume, other
9 things will happen as well. As you know, you can
10 discriminate between speech that's shouted from
11 speech that's spoken quietly, regardless of what
12 the volume control is, whatever you listen to it
13 on, and, but there's nothing in the wording of the
14 patent or the specification that refers to those
15 kinds of changes. So, therefore, I've been
16 avoiding discussing them.

17 Q In the context of the patent what's the
18 difference between voice or speech that's spoken
19 quietly versus a whisper?

20 MR. REEVES: Objection. Form. Outside
21 the scope.

22 A In speech science whispering is explicitly

1 speech that is rendered without vibrating your 13:53:36
2 vocal cords. You actually can vary the intensity 13:53:39
3 of whispered speech as well as spoken speech, but 13:53:51
4 specifically in -- the correct definition is 13:53:57
5 whether or not you're using the vocal cords, and 13:54:02
6 I'll leave it at that. 13:54:05

7 Q So just so I understand, just to make sure 13:54:16
8 that I understand you correctly, you just 13:54:20
9 testified that you can vary the intensity of 13:54:22
10 whispered speech as well as spoken speech. Do you 13:54:25
11 mean that you can -- you can vary the volume of 13:54:28
12 your whispered speech as well as your spoken 13:54:32
13 speech? 13:54:35

14 A That is correct. 13:54:36

15 Q Do you understand the claim term 13:54:52
16 classifying the voice to require anything more 13:54:54
17 than providing voice output based on distance 13:54:57
18 between the user and the device? 13:55:00

19 MR. REEVES: Objection. Form. Calls for 13:55:02
20 a legal conclusion. 13:55:09

21 A The specification language also includes, 13:55:09
22 as we discussed extensively, identifying the 13:55:11

1	presence or absence of whispers. They also -- it	13:55:15
2	also talks about other kinds of voice	13:55:19
3	classification based on the nature of what is	13:55:22
4	requested, the content of what's requested. Are	13:55:26
5	you asking about the weather? Are you asking	13:55:29
6	about sports scores? I'm not sure that that was	13:55:32
7	mentioned specifically, but that as well.	13:55:34
8	Q I don't think you answered my question so	13:55:47
9	I'll try to rephrase it.	13:55:49
10	Do you -- do you understand the claim, the	13:55:51
11	claim term classifying the voice to be met if the	13:56:04
12	device provides voice output based on distance	13:56:12
13	between the user and the device?	13:56:15
14	MR. REEVES: Objection. Form.	13:56:21
15	A As you point out, the second limitation of	13:56:23
16	Claim 1 talks about classifying the voice based on	13:56:26
17	distance. So under that limitation, yes, you are	13:56:29
18	classifying the voice based on distance.	13:56:38
19	Q Can you go to column 15, line 25 to 31?	13:56:46
20	You can read it to yourself and let me know when	13:56:50
21	you're done.	13:56:53
22	A Column 15, line 25?	13:56:54

1	Q 25 to 31.	13:56:57
2	A Okay. Okay.	13:57:00
3	Q So here the patent talks about the user	13:58:05
4	changing his voice; right?	13:58:08
5	MR. REEVES: Objection. Form.	13:58:12
6	A Yes, and -- yes, it does.	13:58:18
7	Q So do you understand this then to say that	13:58:23
8	the user has control over what voice they speak in	13:58:28
9	in the context of the patent?	13:58:32
10	MR. REEVES: Objection. Form.	13:58:35
11	A The patent refers to the first voice and	13:58:37
12	the second voice inconsistently in the course of	13:58:40
13	the patent. In some places in the specification	13:58:45
14	the patent classifies in the first and second	13:58:50
15	based on distance alone which is not, you know,	13:58:53
16	necessarily a voluntary direct vocal attribute.	13:58:59
17	In the case of the whispered speech, and I	13:59:05
18	think the whispered speech is the only such case	13:59:08
19	of a -- possibly volume as well -- you're talking	13:59:12
20	about making a classification based on something	13:59:15
21	that the user does, you know, intentionally.	13:59:18
22	Q So would you agree that in the context of	13:59:36

1 a whisper the user has control over what voice 13:59:38

2 they speak in? 13:59:43

3 MR. REEVES: Objection. Form. Outside 13:59:45

4 the scope. 13:59:51

5 A Yes, but that's not the way voice is 13:59:51

6 referred to consistently throughout the 13:59:56

7 specification of the patent. 13:59:59

8 Q Can you turn to paragraph 62 of your 14:00:20

9 declaration, please? 14:00:24

10 A Yes. 14:00:37

11 Q So in paragraph 62 you opine that Shin 14:00:38

12 discloses the claim "analyze the voice spoken by a 14:00:41

13 user." 14:00:45

14 Can you clarify what exactly you are 14:00:47

15 pointing to with Shin that discloses the claim 14:00:49

16 voice analysis? 14:00:52

17 A Well, let's see. Reading from the report 14:01:03

18 or reading from the declaration, specifically, so 14:01:07

19 from paragraph 62, "First, Shin discloses a voice 14:01:15

20 classified unit that is configured to, to analyze 14:01:19

21 a voice." In more detail, "Shin discloses that 14:01:22

22 the device 101 includes a processor 120 and an 14:01:26

1	audio input module 151." The processor could be a	14:01:30
2	CM -- which could -- may be a CPU analyzes a voice	14:01:34
3	input received through the audio input module and	14:01:39
4	determines the output scheme of content based on	14:01:46
5	the various speech features from the results of	14:01:48
6	the analysis, and that's referring to -- that's	14:01:52
7	referring to things identified by Shin.	14:01:54
8	Q So I --	14:02:00
9	A The application --	14:02:00
10	Q Sorry. Go ahead.	14:02:02
11	A Yeah. So going on, that may include voice	14:02:05
12	recognition, and those are disclosed in Shin, and	14:02:08
13	of course, Shin also includes proximity detector.	14:02:16
14	Q Okay. Yeah. I appreciate that in this	14:02:23
15	paragraph you cited multiple instances where Shin	14:02:25
16	allegedly analyzed the voice input. What -- what	14:02:29
17	I'm trying to get your help on is I don't think	14:02:32
18	you ever pointed out what analysis is actually	14:02:35
19	performed by Shin?	14:02:38
20	MR. REEVES: Objection. Form.	14:02:43
21	Q So what is the output that is actually	14:02:51
22	being performed by Shin that you opine discloses	14:02:53

1	this limitation?	14:02:57
2	A Okay. To address that --	14:02:58
3	MR. REEVES: Objection. Form.	14:03:00
4	A Sorry. To address that question I'd like	14:03:01
5	to request a copy of the Shin reference.	14:03:04
6	Q Yeah. We will get there momentarily. I	14:03:08
7	just want to make sure that I didn't miss anything	14:03:10
8	in your report where you explained this.	14:03:12
9	A I'd have to check but I want to call to	14:03:23
10	your attention the fact that the, for many of	14:03:27
11	these things the '337 patent is not explicit	14:03:32
12	either, and it's sufficient to disclose that this	14:03:39
13	determination is made, but once again, I'd be	14:03:44
14	happy to elaborate with the reference in front of	14:03:47
15	me.	14:03:51
16	Q I appreciate that, and we'll get to Shin	14:03:51
17	momentarily. If you want to review, take some	14:03:54
18	time review your report, that's fine, but I just	14:03:57
19	want to make sure that I didn't miss anything.	14:03:59
20	So could you -- could you explain what	14:04:02
21	analysis is exactly performed by Shin that	14:04:05
22	discloses this limitation in your report?	14:04:08

1 MR. REEVES: Objection. Form. Asked and 14:04:10
2 answered. 14:04:53

3 A Well, in the scope of the declaration I 14:04:53
4 call to your attention paragraph 63 which cites 14:04:57
5 that Shin discloses that the voice classifying 14:05:01
6 unit analyzes the voice to classify either as a 14:05:06
7 first or second voice based on the distance 14:05:11
8 between the user and the device. The processor 14:05:13
9 also executes voice recognition to process the 14:05:16
10 voice input and generate corresponding content for 14:05:20
11 the output, and an example is shown in Shin's 14:05:28
12 table 3 which is, you, will find at the bottom of 14:05:31
13 page 31, in which the distance is measured, and 14:05:34
14 that's mapped to how much information it's 14:05:41
15 provided in the course of the output of the 14:05:44
16 device, and that explicitly discloses voice 14:05:48
17 classification as taught by the claims of the '337 14:05:53
18 patent. 14:05:59

19 Q Okay. But what is the analysis that was 14:06:05
20 performed by Shin, the voice analysis? 14:06:07

21 MR. REEVES: Objection. Form. Objection. 14:06:11
22 Form. Asked and answered. 14:06:13

1	A	In the discussion leading up to table 3	14:06:16
2		which is referred to on page 31, of course, the	14:06:19
3		analysis is simply based on distance.	14:06:23
4	Q	But that's not a voice analysis; right?	14:06:29
5	A	That is a voice analysis. You don't need	14:06:33
6		the term voice analysis for it to be voice	14:06:38
7		analysis. What's being processed and what's being	14:06:40
8		classified is the speech that makes it voice	14:06:43
9		analysis and voice classification.	14:06:47
10	Q	Can you go to paragraph 64 of your	14:07:37
11		declaration?	14:07:41
12	A	Yes.	14:07:42
13	Q	You see at the bottom table 3 of Shin;	14:07:45
14		right?	14:07:49
15	A	Yes.	14:07:49
16	Q	Looking at table 3, what in table 3 tells	14:07:54
17		you anything about the user's voice?	14:07:58
18	MR. REEVES:	Objection. Form.	14:08:02
19	A	Table 3 refers to -- table 3 on the	14:08:08
20		left-hand side which is the analysis side, refers	14:08:14
21		to the measurement of distance, and if we look at	14:08:17
22		limitation, second limitation of claim 1, voice	14:08:24

1	classifying unit configured to analyze the voice	14:08:30
2	based on the distance between the user and the	14:08:36
3	voice-control content, and the voice-content	14:08:39
4	control device. So I argue that table 3	14:08:43
5	explicitly discloses exactly what's taught in the	14:08:48
6	second limitation of Claim 1 of the '337 patent.	14:08:51
7	Q Okay. If we look at table 3, on the left,	14:09:02
8	left column it says distance between the user and	14:09:08
9	the electronic device, and on the right it says	14:09:11
10	output amount of information of content; right?	14:09:14
11	A That's correct.	14:09:17
12	Q So the content of the table has nothing to	14:09:20
13	do with the user's voice; right?	14:09:24
14	MR. REEVES: Objection. Form. Asked and	14:09:28
15	answered.	14:09:32
16	A It doesn't have to. The classification is	14:09:32
17	based on distance.	14:09:36
18	Q I'm not -- sorry. I'm not asking about	14:09:37
19	classification. I'm asking if looking at table 3,	14:09:40
20	if table 3 informs you of anything regarding the	14:09:43
21	user's voice.	14:09:47
22	MR. REEVES: Objection. Form. Asked and	14:09:50

1	answered.	14:09:54
2	A Again, if you'd like me to say the words,	14:09:54
3	I will. It's not based on voice, but you can have	14:09:59
4	voice classification without the explicit use of	14:10:03
5	the term voice, and here the classification is	14:10:07
6	based on distance as taught by the specifications	14:10:10
7	by the claims of the patent.	14:10:15
8	Q Again, I'm not -- I'm not talking about	14:10:19
9	classification here. I'm just talking about	14:10:22
10	voices. Can you --	14:10:24
11	A Okay.	14:10:27
12	Q Can you looking at table 3, can you --	14:10:27
13	does it provide any information regarding the	14:10:31
14	user's voice in table 3?	14:10:33
15	MR. REEVES: Objection. Form. Asked and	14:10:35
16	answered.	14:10:39
17	A It has been asked and answered. I'm not	14:10:39
18	sure what more I can tell you that I haven't	14:10:42
19	already.	14:10:45
20	Q Well, you keep -- you keep answering in	14:10:45
21	the context of classification. That's not my	14:10:47
22	question, sir. My question is simply, does table	14:10:50

1	3 provide any information regarding the user's	14:10:54
2	voice, not whether you can use table 3 to classify	14:10:57
3	the voice?	14:11:03
4	MR. REEVES: Same objections.	14:11:04
5	A No. Just so we don't continue iterating	14:11:08
6	this for the rest of the day, it tells you about	14:11:11
7	the distance between the user and the electronic	14:11:16
8	device and nothing else.	14:11:20
9	Q Okay. Thank you. Can you pull up Exhibit	14:11:22
10	1003, please?	14:11:32
11	(Deposition Exhibit 1003 was introduced	
12	for identification.)	14:11:40
13	Q Do you recognize Exhibit 1003?	14:11:40
14	MR. REEVES: Counsel, I'm going to hand	14:11:43
15	Dr. Stern a copy of Exhibit 1003. Is that all	14:11:45
16	right?	14:11:50
17	MR. TO: Yes, please. Thank you.	14:11:50
18	A Yes, I have it, and of course it's the	14:11:53
19	Shin patent application.	14:11:56
20	Q Okay. Now that you have Shin in front of	14:11:58
21	you, let's return to my previous question that you	14:12:02
22	couldn't fully answer. So can you -- can you take	14:12:05

1 a look at Shin and tell me what in your opinion -- 14:12:09

2 what in Shin discloses the claim analyze a voice 14:12:15

3 spoken by a user? 14:12:19

4 MR. REEVES: Objection. Form. Asked and 14:12:21

5 answered. 14:12:23

6 A Well, let's take a look at the paragraphs 14:12:23

7 in the application that I refer to in the 14:12:27

8 declaration. So I'm referring to, look at 47, 60, 14:12:30

9 37 and 39 for starter. 14:12:36

10 Well, the explicit rendering is in Shin's 14:15:10

11 paragraph 78, in operation 505 the processor 120 14:15:13

12 of the electronic device 101 determines an output 14:15:19

13 scheme of content based on the distance between 14:15:24

14 the user and the electronic device 101 determined 14:15:28

15 in operation 503. Hence the prior art discloses 14:15:32

16 the limitation, that second limitation first 14:15:43

17 claim. 14:15:47

18 Q But what's the actual analysis performed 14:15:50

19 here? 14:15:52

20 MR. REEVES: Objection. Form. Asked and 14:15:54

21 answered. 14:16:06

22 A It may say, but I don't really know. I 14:16:06

1 could read the rest of the application to 14:16:10
2 determine if there is one, but in my professional 14:16:15
3 opinion it doesn't matter. We're talking about 14:16:20
4 the operation that's performed. There are 14:16:22
5 multiple sensors. There are multiple ways of 14:16:26
6 determining distance, and any reasonable rendering 14:16:30
7 of how it's done will lead to the same result that 14:16:33
8 the prior art reference discloses the teachings of 14:16:38
9 that particular part of Claim 1. 14:16:45

10 Q So can I understand your answer to mean 14:16:50
11 that you, in performing your analysis as to 14:16:53
12 whether Shin discloses the claim analyze the voice 14:16:56
13 spoken by a user, you stop at paragraph 78? 14:16:59

14 MR. REEVES: Objection. Misstates 14:17:04
15 testimony. 14:17:06

16 A No. I didn't say that. I read and 14:17:08
17 considered and the entire document, but the part 14:17:13
18 that's relevant to, you know, the question of 14:17:19
19 whether the prior art anticipates or renders 14:17:25
20 obvious the claims, as far as I can tell that's 14:17:28
21 all I need to know. 14:17:34

22 Q Okay. So you did not identify a specific 14:17:36

1 voice analysis performed by Shin in formulating 14:17:40

2 your opinion? 14:17:43

3 MR. REEVES: Objection. Misstates 14:17:46

4 testimony. Asked and answered. Form. 14:17:48

5 A The analysis as specified in the claim 14:17:52

6 language and also specified previously in the text 14:17:58

7 of the Shin reference describes classification 14:18:03

8 based on distance. 14:18:09

9 Q What about voice analysis? 14:18:11

10 MR. REEVES: Same objections. 14:18:16

11 A And same comment. The limitation -- the 14:18:19

12 second limitation of Claim 1 doesn't talk about 14:18:27

13 analyzing the voice. It talks about analyzing the 14:18:31

14 speech based on distance, and that's all that need 14:18:34

15 to be discussed. This is still voice analysis. 14:18:37

16 Q Yeah, I'm going to read back your answer 14:19:14

17 just now to you. You stated that "it talks about 14:19:16

18 analyzing the speech based on distance, and that's 14:19:21

19 all that need to be discussed." So is it your 14:19:24

20 opinion that the second limitation of Claim 1 is 14:19:29

21 met if the prior art discloses analyzing speech 14:19:33

22 based on distance? 14:19:41

1 MR. REEVES: Objection. Form. 14:19:43

2 A Yes. 14:19:45

3 Q And you don't need to -- you don't need to 14:19:48

4 identify any voice analysis in concluding that 14:19:52

5 the -- 14:19:56

6 MR. REEVES: Objection. Form. 14:19:57

7 A From the readings of Claim 1 that's 14:20:02

8 correct. 14:20:07

9 Q Okay. And -- 14:20:07

10 A Specifically limitation 2. 14:20:08

11 Q Is that your understanding -- sorry. Go 14:20:09

12 ahead. 14:20:12

13 A Yeah, just to clarify. I'm sorry. From 14:20:12

14 my understanding of the, and it's very explicit, 14:20:15

15 second limitation of Claim 1 talks about voice 14:20:25

16 classifying unit configured to classify the voice 14:20:32

17 as either the first or the second voice based on 14:20:37

18 the distance between the user and the voice- 14:20:40

19 content control device. 14:20:43

20 I've been asked to opine about the extent 14:20:45

21 to which the claim language is disclosed by the 14:20:49

22 prior art, and in this case it's very explicit. 14:20:55

1 Q Turn to paragraph 76 of Shin. 14:21:26

2 A 76 of Shin. Yes, I'm there. 14:21:30

3 Q Paragraph 76 talks about determining 14:21:36

4 distance between the user and the device based on 14:21:38

5 volume of the speech; right? 14:21:41

6 A Mm-hmm. Yes. 14:21:45

7 Q And specifically, paragraph 76 of Shin 14:21:49

8 says to determine distance based on the 14:21:53

9 correlation between volume and distance; correct? 14:21:54

10 A Yes, and I also point out that it says 14:22:00

11 "may determine." So that's one of a plurality of 14:22:02

12 alternatives. 14:22:07

13 Q Sure. Thank you. So if we look at table 14:22:08

14 1 to table 3, the distance ranges in these tables 14:22:11

15 correlates to the corresponding ranges of volume; 14:22:16

16 right? 14:22:22

17 MR. REEVES: Objection. Form. 14:22:22

18 A Well, as you can see, the -- just looking 14:22:30

19 at the tables, and again, perhaps I should check 14:22:36

20 the specification of the application for more 14:22:39

21 detail, but the left-hand column is simply 14:22:43

22 distance, and the right-hand column refers to 14:22:46

1 output volume, output speed, and amount of 14:22:53

2 information in the three tables respectively. 14:22:55

3 Q I guess we'll take a step back. How does 14:23:03

4 Shin determine distance based on volume? 14:23:07

5 MR. REEVES: Objection. Form. Outside 14:23:10

6 the scope. 14:23:25

7 A Well, it's not completely explicit. In 14:23:25

8 Shin paragraph 75 specific distance detection 14:23:32

9 module is referred to. In paragraph 76 there's 14:23:37

10 some discussion of using volume to determine 14:23:46

11 distance, but in all cases these are potential 14:23:51

12 ways of determining distance. I would have to 14:24:00

13 analyze -- I can reread it right now to determine 14:24:04

14 more explicitly exactly what, if anything, is 14:24:08

15 disclosed, but for me the important thing is 14:24:12

16 simply the distance is determined, and that's used 14:24:17

17 as the basis for the classification which, in 14:24:21

18 turn, motivates or specifies additional 14:24:26

19 activities. 14:24:31

20 Q And it doesn't matter how the distance is 14:24:33

21 determined; right? 14:24:36

22 MR. REEVES: Objection. Form. 14:24:38

1 A For the purpose of comparing the claim 14:24:40
2 language to the language of the Shin reference it 14:24:44
3 does not because the claim language is not limited 14:24:50
4 along the lines of the method by which the 14:24:54
5 distance is determined. 14:24:56

6 Q So you say -- you testified that Shin is 14:25:01
7 not explicit in its disclosure regarding how to 14:25:04
8 determine distance based on volume. As an expert 14:25:09
9 in the field, how would you do that? 14:25:11

10 MR. REEVES: Objection. Form. Outside 14:25:14
11 the scope. 14:25:21

12 A There are -- so again, I preface this by 14:25:21
13 commenting that this is irrelevant to the 14:25:30
14 comparison of the reference in the patent, but 14:25:34
15 very briefly, there are devices that measure 14:25:37
16 distance directly. You can infer distance through 14:25:42
17 multiple cameras. You can infer distance 14:25:45
18 acoustically from ratio direct to reverberant 14:25:50
19 field. That's not a very good way of doing it, 14:25:56
20 and one could go on from there, but my point is 14:25:59
21 that there are multiple possibilities. 14:26:03

22 Q I just want to clarify to make sure I 14:26:20

1 understand. You testified that you can infer 14:26:22

2 distance based on acoustic. 14:26:25

3 A Based on what? If there's a question 14:26:29

4 pending, I think I missed it. 14:26:49

5 Q Oh, yes. There is. What do you mean by 14:26:51

6 you can infer distance based on acoustic? What do 14:26:54

7 you mean by acoustic in your previous answer? 14:26:59

8 MR. REEVES: Objection. Objection. Form. 14:27:01

9 A This is outside the scope of the patent or 14:27:09

10 the references, but you can estimate the extent to 14:27:13

11 which the voice is reverberated. 14:27:27

12 Q I guess can a POSITA -- 14:27:36

13 A And I should mention it's not very good. 14:27:39

14 Q It's not very good, okay. So does a 14:27:42

15 POSITA know how to determine distance based on 14:27:46

16 volume at the time of the invention? 14:27:50

17 MR. REEVES: Objection. Form. Outside 14:27:54

18 the scope. 14:28:19

19 A We had the discussion previously during 14:28:19

20 which we noted that as you get closer to the 14:28:27

21 microphone the volume tends to increase, but that 14:28:33

22 gives you information about relative distance, not 14:28:39

1 absolute distance. So you would not be able to 14:28:42
2 make a determination less than 1 meter, between 1 14:28:46
3 and 2 meters, greater than 3 meters, et cetera, 14:28:51
4 based on volume alone. You'd have to have some 14:28:55
5 additional information. 14:28:58

6 Q So in the context of Shin's table 1, 2 and 14:29:00
7 3, you cannot arrive at that level of -- you 14:29:14
8 cannot arrive at the level of accuracy required to 14:29:18
9 use these table to classify, to -- strike that. 14:29:21

10 So based on volume alone, a POSITA would 14:29:29
11 not be able to determine the distance at the 14:29:49
12 required accuracy to use table 1, 2 and 3 to 14:29:53
13 change the output scheme; is that right? 14:29:57

14 MR. REEVES: Objection. Form. Outside 14:29:59
15 the scope. 14:30:03

16 A This is a hypothetical to which I don't 14:30:03
17 feel compelled to address. I do call to your 14:30:06
18 attention that in paragraph 77 it says, "Since the 14:30:11
19 electronic device determines distance based on 14:30:16
20 both the distance derived from the volume of 14:30:19
21 speech and the distance computed by the distance 14:30:22
22 detection module the accuracy of the distance 14:30:26

1 measurement may be improved."

14:30:29

2 Q Well, I appreciate that, but paragraph 76
3 does tell you that you can determine that based on
4 volume alone, right? And you've just testified
5 that Shin is not explicit as to how you do that,
6 and so I'm just asking you as an expert whether
7 you would know how to do it?

14:30:32

14:30:40

14:30:42

14:30:48

14:30:51

14:30:55

8 MR. REEVES: Objection. Form.

14:30:57

9 A Well, as we discussed previously in
10 paragraph 75, Shin states that the -- you may make
11 a determination based on, you know, using volume
12 alone. Shin then goes on to describe that you can
13 do better combining that with other measurements,
14 and what you had just asked me was whether the
15 estimate based on volume alone would be sufficient
16 to classify the speech according to tables 1, 2
17 and 3 with sufficient accuracy, and my answer to
18 that is simply I don't know. I can't answer
19 without, without additional information, and
20 additional would be expending a lot of trial and
21 error, among other things.

14:31:00

14:31:03

14:31:15

14:31:23

14:31:26

14:31:30

14:31:34

14:31:38

14:31:44

14:31:47

14:31:50

14:31:55

14:31:59

22 MR. REEVES: Counsel, we've been going

14:32:06

1 more than an hour. Is now a good time for a 14:32:09

2 break? 14:32:11

3 MR. TO: If it's okay with Dr. Stern, I 14:32:12

4 want to finish this line of questioning. Is it 14:32:14

5 okay? 14:32:17

6 MR. REEVES: Okay. 14:32:17

7 MR. TO: You know what, let's take a break 14:32:20

8 first. We'll go off the record for ten minutes. 14:32:22

9 THE VIDEOGRAPHER: Please stand by. We 14:32:25

10 are going off the record. The time is 2:32. 14:32:27

11 (A recess was taken.) 14:43:20

12 THE VIDEOGRAPHER: We are going back on 14:43:20

13 the record. The time is 2:43. 14:43:22

14 BY MR. TO: 14:43:25

15 Q Welcome back, Dr. Stern. Did you discuss 14:43:28

16 any substantive issue regarding your deposition 14:43:30

17 with counsel during the break? 14:43:31

18 A No, we did not. 14:43:34

19 Q Can you pull up what's been marked as 14:43:35

20 Exhibit 1004 to your deposition? 14:43:39

21 And Mr. Reeves, if you want to hand him a 14:43:42

22 hard copy, that's fine. 14:43:47

1	(Deposition Exhibit 1004 was introduced	
2	for identification.)	14:43:51
3	A Thank you. I have it.	14:43:51
4	Q Do you recognize it?	14:43:54
5	A I do.	14:43:56
6	Q Can you please state for the record what	14:43:56
7	it is?	14:43:59
8	A It's the English translation of the	14:44:00
9	Japanese patent application by, by Hideki	14:44:04
10	Shimomura.	14:44:11
11	Q Can you turn to paragraph 39 on page 8,	14:44:14
12	please?	14:44:19
13	A Okay.	14:44:43
14	Q You can read paragraph 39 to yourself, and	14:44:44
15	let me know when you're done.	14:44:47
16	A Okay.	14:45:00
17	Q So the last sentence of paragraph 39 talks	14:45:00
18	about detecting distance using image recognition	14:45:03
19	unit 41; right?	14:45:09
20	A That's correct.	14:45:11
21	Q Okay. Can we go to paragraph 93 on page	14:45:12
22	15, please?	14:45:16

1	A	Okay.	14:45:22
2	Q	Yeah. You can read that to yourself, and	14:45:25
3		let me know when you're done.	14:45:30
4	A	Yes. I have it.	14:45:32
5	Q	You can -- have you -- have you finished	14:45:35
6		reading it?	14:45:37
7	A	Just paragraph 93. It's very short.	14:45:39
8	Q	Okay. So paragraph 93 talks about a	14:45:43
9		distance detection means that's used for detecting	14:45:46
10		distance; correct?	14:45:49
11	A	Yes.	14:45:51
12	Q	And now let's turn back to your	14:45:53
13		declaration, paragraph 132 on page 63.	14:45:57
14	A	Okay.	14:46:18
15	Q	So here you're opining that the distance	14:46:20
16		detection means or the image recognition unit --	14:46:24
17	A	Are we talking about paragraph 132 or a	14:46:28
18		different paragraph?	14:46:31
19	Q	It should be 132 of your declaration.	14:46:32
20	A	Yeah, there might have been an internal	14:46:39
21		change from the copy, but I see proximity sensor.	14:46:43
22	Q	Okay. Let me --	14:46:47

1	A I think we're fine. That's paragraph 134	14:46:50
2	on my version of the document but --	14:46:53
3	Q Yeah.	14:46:55
4	A -- we can sort this out pretty easily.	14:46:56
5	Q So in paragraph 134 you opine that the	14:46:59
6	distance detection means or the image recognition	14:47:03
7	unit of Shimomura discloses detecting distance to	14:47:07
8	the conversation partner; is that right?	14:47:12
9	A That's correct.	14:47:15
10	Q Does Shimomura disclose any other	14:47:16
11	component for detecting distance?	14:47:23
12	MR. REEVES: Objection. Form.	14:47:25
13	A I'm not sure that it does. I'd have to	14:47:31
14	look over the entire document to confirm that	14:47:34
15	but --	14:47:37
16	Q Okay. You've -- other component --	14:47:40
17	THE REPORTER: I'm sorry. You kind of	14:47:47
18	spoke over there. I didn't hear the question.	14:47:49
19	THE WITNESS: That's because we are all	14:47:51
20	talking at once. I'm sorry about that.	14:47:52
21	Q No. Please continue with your answer.	14:47:53
22	A Okay.	14:47:57

1	THE REPORTER: I didn't hear the question	14:47:57
2	counsel. I'm sorry.	14:47:58
3	Q I'll strike the last question.	14:48:01
4	Dr. Stern, you can finish your answer.	14:48:03
5	A So the question --	14:48:08
6	MR. REEVES: Counsel, can you please just	14:48:09
7	restate the question?	14:48:12
8	Q Sure. So apart from the distance	14:48:13
9	detection means and the image recognition unit,	14:48:25
10	Shimomura does not disclose any other component	14:48:29
11	for detecting distance; is that right?	14:48:32
12	MR. REEVES: Objection. Form.	14:48:34
13	A That's correct.	14:48:36
14	Q And Shimomura also does not disclose any	14:48:39
15	other method or process for detecting distance; is	14:48:43
16	that right?	14:48:47
17	MR. REEVES: Objection. Form.	14:48:47
18	A I believe that's correct.	14:48:50
19	Q Okay. Can you please read Shimomura	14:48:55
20	paragraphs 60 to 64 and 67, and let me know when	14:49:00
21	you're done?	14:49:05
22	A Okay.	14:50:00

1	Q	Okay. So these paragraphs Shimomura talks	14:50:00
2		about the speech character string transformation	14:50:05
3		unit 51 determine whether to transform the	14:50:09
4		character string based on distance information;	14:50:10
5		right?	14:50:13
6	A	That's correct.	14:50:13
7	Q	And in paragraph 62 Shimomura talks about	14:50:15
8		transforming the character string when the	14:50:19
9		distance is more than 350 centimeters and not	14:50:22
10		transforming it when the distance is less than 350	14:50:25
11		centimeters; is that right?	14:50:29
12	A	That is correct.	14:50:32
13	Q	Turning to paragraph 67, Shimomura talks	14:50:34
14		about changing the output volume based on distance	14:50:39
15		to the conversation partner; right?	14:50:42
16	A	Yes.	14:50:55
17	Q	And just to confirm, given your prior	14:50:57
18		testimony that Shimomura does not disclose any	14:51:00
19		other components for detecting distance other than	14:51:03
20		the distance detection means and the image	14:51:07
21		recognition unit, when in paragraph 62 and 67	14:51:09
22		Shimomura talks about distance, that's -- that	14:51:14

1	distance is detected and determined by the	14:51:18
2	distance detection means for the image recognition	14:51:21
3	unit; correct?	14:51:25
4	MR. REEVES: Objection. Form and to the	14:51:26
5	extent it misstates testimony.	14:51:28
6	A It was a long question. I believe that	14:51:33
7	what you're asking is whether something other than	14:51:37
8	the stereo cameras were used to detect the	14:51:41
9	distance. If that's what you're asking, I would	14:51:44
10	say yes. If you're asking something else, please	14:51:48
11	ask again.	14:51:52
12	Q Yeah. No. You understood my question	14:51:52
13	perfectly. I apologize.	14:51:54
14	So in the context of Shimomura the user	14:52:10
15	can change his or her speech volume, rate of	14:52:13
16	speech or other voice characteristics, and it	14:52:17
17	would have no effect on Shimomura's distance	14:52:20
18	determination; right?	14:52:24
19	MR. REEVES: Objection. Form.	14:52:25
20	A Shimomura's distance calculation is just	14:52:36
21	based on the physical distance and not related to	14:52:39
22	what's spoken, not related to anything acoustical.	14:52:42

1 So I think that's what you're using. 14:52:47

2 Q Yeah, and to clarify, the calculation that 14:52:50
3 is based on the physical distance is detected by 14:52:52
4 either the distance detection means or the image 14:52:56
5 recognition unit; right? 14:53:00

6 MR. REEVES: Objection. Form. Asked and 14:53:02
7 answered. 14:53:07

8 A I believe, as we said a moment ago, that 14:53:07
9 in Shimomura the only distance mechanism that's 14:53:14
10 disclosed is the image disparity detection. 14:53:17

11 Q So in Shimomura a user's voice has no 14:53:24
12 effect on whether Shimomura's device transform the 14:53:29
13 character string or changed the output volume. Do 14:53:32
14 you agree? 14:53:38

15 MR. REEVES: Objection. Form. 14:53:38

16 A I don't think that's completely true. I 14:53:39
17 think that part of what changes is based on what's 14:53:42
18 being asked. So the component having to do with 14:53:49
19 the information provided, that would change. 14:53:51

20 Q Can you point me to where in your 14:54:04
21 declaration you offer this opinion? 14:54:06

22 A It may not be in the declaration. I'm 14:54:11

1 just trying to answer the question that you asked. 14:54:13

2 Q Okay. Can you point me to where in 14:54:16

3 Shimomura that you use to form the basis of your 14:54:18

4 opinion just now? 14:54:24

5 A Give me a second for that. 14:54:25

6 Okay. I apologize for holding things up, 14:56:49

7 and I also apologize in that part of my last 14:56:53

8 answer was incorrect. The Shimomura reference 14:56:55

9 does not talk about the content. I had confused 14:56:59

10 that with some of the other references that I had 14:57:05

11 considered and misidentified which reference it 14:57:07

12 was. 14:57:11

13 If you'd like to repeat the last question, 14:57:12

14 I'll answer it in the context -- with that 14:57:17

15 correction. 14:57:21

16 Q No. That's -- that's okay. I understand 14:57:22

17 it's a lot to commit to memory. Can you turn to 14:57:25

18 page 44 of your declaration? 14:57:29

19 A Okay. 14:57:45

20 Q So this is the obviousness section for 14:57:46

21 Shin regarding Claim 2; right? 14:57:49

22 A Yes. 14:58:01

1 Q Did you identify any difference between 14:58:03
2 Shin and Claim 2 in your declaration? 14:58:09

3 MR. REEVES: Objection. Form. 14:58:16

4 A Well, I think I stated in the -- I think I 14:58:56
5 stated in the anticipation argument previously 14:59:04
6 that the teachings of Shin anticipated every 14:59:11
7 aspect of the claims of the patent, in this case 14:59:16
8 Claim 2, but to the extent that obviousness 14:59:22
9 argument was also provided, this was, tend to be 14:59:26
10 complementary, but there -- you know, the 14:59:36
11 discussion may be different. 14:59:40

12 Q So for anticipation your opinion is that 14:59:48
13 Shin discloses every single limitation in Claim 2; 14:59:51
14 right? 15:00:06

15 A Claim 2, looking at page 44. So Claim 2 15:00:06
16 reads: Process Executing Unit. Comprises 15:00:39
17 intention -- intention analyzing unit configured 15:00:44
18 to extract information indicating intention of the 15:00:46
19 user based on the voice acquired and an 15:00:48
20 acquisition content. 15:00:52

21 So in paragraph 93 of my declaration I 15:00:54
22 state -- well, actually paragraph 92, I state that 15:01:02

1 the, the intention analyzing unit consists of 15:01:11
2 determining what it is that the user is actually 15:01:15
3 asking about, and, and then I go on to state that 15:01:18
4 Shin does the same thing in paragraph 37. Let me 15:01:28
5 go back and confirm that for a second. 15:01:35

6 So in paragraph 37, which I won't reread, 15:01:49
7 but there is an extensive discussion about how the 15:01:53
8 unit analyzes what the user is saying and on the 15:01:57
9 basis of that chooses, you know, how to respond. 15:02:01

10 The second limitation having to do with 15:02:10
11 the acquisition of content is needed in order for 15:02:14
12 the appropriate response to be made. 15:02:20

13 Q So correct me if I'm wrong. So it sounds 15:02:34
14 like you're saying that there's no difference 15:02:36
15 between Shin and Claim 2; is that right? 15:02:38

16 A That's a strong statement. What I'd like 15:02:43
17 to say is that the teachings of Shin anticipate 15:02:47
18 the claim language. That's not the same as saying 15:02:53
19 that there's no difference but that everything in 15:02:57
20 the claim language is in Shin. 15:02:59

21 Q Okay. Did you identify any difference in 15:03:01
22 your declaration? 15:03:04

1	A	In the declaration? I don't think so	15:03:08
2		but...	15:03:12
3	Q	Okay. Thank you. And I'm going to be	15:03:12
4		asking you a series of questions regarding whether	15:03:14
5		you identify any difference between the prior art	15:03:17
6		and the claims. It's okay if the answer is no.	15:03:19
7		I'm not trying to trick you here.	15:03:21
8		So can you go to paragraph 119 of your	15:03:27
9		declaration?	15:03:34
10	A	Okay.	15:03:51
11	Q	So in this paragraph you mention enhancing	15:03:54
12		modularity. Can you explain what you mean by	15:03:57
13		that? It should be the fifth line down.	15:04:07
14	A	Yeah, I know. I see the text. I'm just	15:04:09
15		trying to read the context. So this is -- this	15:04:12
16		discussion -- I think we're talking about the	15:04:33
17		Kristjansson reference right now. Maybe not, no.	15:04:38
18		This is still Shin. But both of these references	15:04:40
19		describe what we generally refer to as spoken	15:04:45
20		language systems, and these are devices like Siri,	15:04:47
21		for example, that are configured to respond to a	15:04:56
22		wide variety of questions in different domains,	15:05:00

1 and typically the responses will be developed by 15:05:04
2 different kinds of units that have different kinds 15:05:12
3 of domain knowledge, which is certainly true for 15:05:16
4 Apple. And modularity here refers to a form of 15:05:22
5 development in which you set up, for example, 15:05:32
6 something that will tell you about the weather, 15:05:34
7 something that will you about your location, 15:05:36
8 something that might give you information about, 15:05:38
9 about shopping, and these can be done separately 15:05:44
10 and in parallel, and that has advantages, and this 15:05:49
11 is typically what we talk about when we talk about 15:05:57
12 modularity. 15:06:02

13 Q So in the context of Shin why would a 15:06:05
14 modular design be desirable if you're a POSITA? 15:06:11

15 MR. REEVES: Objection. Form. 15:06:16

16 A Well, another kind of modularity that I 15:06:18
17 perhaps should have mentioned a moment ago 15:06:22
18 includes just separating the sections of the 15:06:24
19 software that handle the speech recognition, the 15:06:28
20 semantic interpretation, the development of the 15:06:31
21 voice response and then finally the content access 15:06:37
22 and question and answering. The question is why 15:06:42

1 would this be a good thing? 15:06:47

2 Q Yeah, basically. Why -- why would it be 15:06:50
3 desirable? 15:06:56

4 A In general, it would be desirable to sep- 15:06:58
5 -- to have -- small things are easier to be 15:07:06
6 bugged. The new kinds of responses can be 15:07:12
7 developed non-simultaneously, and everything -- 15:07:16
8 and in terms of processing multiple users, which 15:07:23
9 of course isn't what's going on here, you can 15:07:26
10 handle multiple queries in parallel. In general, 15:07:30
11 this has historically been the way this kind of 15:07:36
12 technology has developed over the years. 15:07:40

13 Q Thank you. Can you go to page 58 of your 15:07:51
14 declaration? 15:07:54

15 A Okay. 15:07:55

16 Q So here you're talking about obviousness 15:07:55
17 for Claim 3 regarding Shin. Same question as 15:08:00
18 before. Did you identify any differences between 15:08:05
19 Shin and Claim 3? 15:08:09

20 MR. REEVES: Objection. Form. 15:08:12

21 A Well, let's see. So Claim 3 reads: 15:08:14
22 "Voice content-control device according to Claim 15:08:17

1 1, wherein, on generating the second sentence, the 15:08:20
2 voice-content generating is further configured to 15:08:23
3 omit a part of information included in the voice 15:08:26
4 spoken by the user." (As read) 15:08:30

5 So there's a discussion about that in the 15:08:33
6 obviousness argument surrounding Claim 3, and as 15:08:43
7 you can see on page 59, what's noted is that that 15:08:50
8 might not be explicitly in the text, it would be 15:08:58
9 an obvious thing to a person of ordinary skill in 15:09:04
10 the art to develop those changes. Specifically 15:09:07
11 not including redundant information would be an 15:09:15
12 obvious thing to do. It would speed up the 15:09:19
13 response, which users prefer, and generally make 15:09:23
14 the interaction better, and I cite, for example, 15:09:33
15 some experiments done in my own lab that confirm 15:09:38
16 this. 15:09:43

17 Q In paragraph 123 you opine that users 15:09:45
18 generally prefer faster and more concise 15:09:50
19 responses; right? 15:09:54

20 A That's correct. 15:09:54

21 Q And you cite a supported paper dated 1992? 15:09:56

22 A That's right. 15:10:03

1 Q So within the priority date of this patent
2 is 20 -- 2019. Would you agree that user
3 expectations and behavior could have changed since
4 that paper published?

15:10:10

15:10:12

15:10:14

15:10:17

5 A Well, what that paper referred to is that
6 you want a fast response and specifically that
7 delays of longer than half a second really disrupt
8 the conversational flow, and that remains true
9 today.

15:10:18

15:10:24

15:10:31

15:10:35

15:10:41

10 Q Okay. But the -- but the claim is not
11 talking about minimizing delays; right? It's
12 talking about omitting words. So in the context
13 of, like, having more concise response would --
14 could users have reasons to want more complete
15 answers?

15:11:00

15:11:03

15:11:05

15:11:08

15:11:12

15:11:16

16 MR. REEVES: Objection. Form. Calls for
17 speculation.

15:11:18

15:11:23

18 A I believe that the context of the claim or
19 at least the discussion of the specification in
20 the '337 patent was that as the distance between
21 the user and the machine increases, you need to do
22 things to make the response more, more habitable,

15:11:23

15:11:27

15:11:30

15:11:34

15:11:43

1 more useful. If it's hard to understand the 15:11:46
2 speech, you'll simplify it. You'll slow it down. 15:11:51
3 You will focus on what's really important and 15:11:54
4 eliminate the optional stuff, and users will 15:11:59
5 prefer that. 15:12:02

6 Q Right. But that's -- that's what the '337 15:12:11
7 patent teaches; right? That's not -- that's not 15:12:16
8 what the paper that you cited teach? 15:12:18

9 MR. REEVES: Objection. Form, to the 15:12:22
10 extent it misstates testimony. 15:12:25

11 A The paper -- as I discuss in the report, 15:12:29
12 Shin talks about omitting certain, certain 15:12:35
13 content. I'm sorry. Let me be a little careful 15:12:40
14 here. 15:12:44

15 What I talk about in claim -- I'm sorry -- 15:12:59
16 in paragraphs 121 onward is that it would be 15:13:01
17 obvious to, obviously a good thing to eliminate 15:13:07
18 certain parts of the output in generally the 15:13:12
19 output sentence and then, you know, we talk about 15:13:18
20 why you would want to do that. 15:13:20

21 So in other words, the statement is that 15:13:29
22 even if Shin doesn't do that explicitly, it would 15:13:35

1 be obvious to add that for the reasons stated. 15:13:38

2 Q Thank you. Can you go to paragraph 162, 15:13:45

3 please? In this paragraph you stated, and I 15:13:49

4 quote, "Although Shimomura discloses altering the 15:14:05

5 volume based on distance, it does not specify that 15:14:08

6 the first and second output sentences have 15:14:10

7 different volumes." 15:14:15

8 So when -- previously when I asked you 15:14:17

9 whether you identified any difference between the 15:14:19

10 prior art and the claims, this type of language is 15:14:21

11 what I was asking for. 15:14:24

12 A Okay. 15:14:26

13 Q So -- 15:14:27

14 A Sorry. 15:14:28

15 Q No, that's okay. With that, did you state 15:14:30

16 a difference between Shimomura and the claims 15:14:32

17 anywhere else in your report? 15:14:36

18 MR. REEVES: Objection. Form. 15:14:37

19 A So in -- in -- as I remember the 15:14:41

20 discussion in the claims in the '337 patent, we 15:14:52

21 talk about establishing different voice categories 15:14:57

22 based on differences of distances or thresholds of 15:15:02

1 distances measure and then using that to modify

15:15:07

2 the response.

15:15:12

3 In the Shimomura reference that -- they

15:15:13

4 also talk about measuring distance and using that

15:15:18

5 to modify the responses. Unfortunately, for

15:15:23

6 reasons that I don't know, the examples used for

15:15:28

7 the various figures in Shimomura use different

15:15:32

8 thresholds from the examples that were used in

15:15:39

9 other parts of the document, and all that I'm

15:15:44

10 saying here is that it would have been trivial to

15:15:49

11 modify the thresholds disclosed in the tables so

15:15:52

12 that they would correspond to -- so that they

15:15:56

13 would correspond to the thresholds that were

15:16:01

14 discussed elsewhere.

15:16:05

15 Q Okay. But you don't know why Shimomura

15:16:07

16 uses different numbers for those figures?

15:16:10

17 A My best guess is that it was carelessness

15:16:15

18 at the time that the patent was drafted, but I

15:16:19

19 don't know why.

15:16:21

20 Q Okay. So apart from this, is there

15:16:22

21 anywhere else in your declaration that you

15:16:36

22 identified a difference between Shimomura and the

15:16:38

1	claims?	15:16:44
2	MR. REEVES: Objection. Form. Asked and	15:16:44
3	answered.	
4	Counsel, do you want Dr. Stern to review	15:16:59
5	the entire section on Shimomura? Is that what	15:17:00
6	you're asking?	15:17:04
7	A In principle anything that's addressed as	15:17:05
8	part of the obviousness discussion of Shimomura	15:17:09
9	would, would be motivated by at least a small	15:17:14
10	difference between what Shimomura states. So if	15:17:18
11	we identify all of those, I would have to review	15:17:22
12	that section. If you'd like me to do that, I'd be	15:17:24
13	happy to.	15:17:29
14	Q No, that's okay. Can you turn to	15:17:30
15	paragraph 181?	15:17:34
16	A Yes.	15:17:45
17	Q Here you're addressing obviousness for	15:17:45
18	claim element 2(a); right?	15:17:48
19	A Yes.	15:18:00
20	Q And can you turn to paragraph 183?	15:18:02
21	A Yes.	15:18:22
22	Q And this was for 2(b); correct?	15:18:23

1	A And 2(b) is concerned the acquisition	15:18:25
2	content information acquiring unit. Right. Okay.	15:18:29
3	And repeat -- is there a question?	15:18:37
4	Q I'm about to ask it.	15:18:40
5	A Okay. Good. I just want to make sure I	15:18:42
6	didn't miss it.	15:18:46
7	Q Yeah, no worries. Did you ever address	15:18:47
8	these two limitations collectively in your	15:18:49
9	obviousness analysis?	15:18:51
10	MR. REEVES: Objection. Form.	15:18:53
11	A Well, it's -- this is the kind of thing	15:19:03
12	that's hard to recite without sounding redundant	15:19:07
13	or circular on logic, but what we're talking about	15:19:14
14	again is what we call a spoken language system	15:19:16
15	that takes something coming in and then tries to	15:19:19
16	answer a question or provide information that is	15:19:21
17	requested. In order for the system to do that the	15:19:24
18	system must figure out what it is that's being	15:19:28
19	asked and must look up or otherwise acquire the	15:19:31
20	necessary response. So these are all things that	15:19:39
21	are part of the process.	15:19:44
22	It's -- without looking at the Shimomura	15:19:50

1 reference right now, I believe, just extrapolating 15:19:56
2 from my own text and declaration, that it provides 15:20:01
3 answers to questions like that. In fact, I know 15:20:04
4 that it does that based on discussion. It may not 15:20:07
5 explicitly say that in order to provide those 15:20:10
6 answers the system must determine what topic is 15:20:13
7 being addressed and then also must specifically go 15:20:17
8 through some process to come up with the correct 15:20:22
9 or at least helpful answer, but it would be 15:20:27
10 impossible for the system to function in the way 15:20:31
11 that's described without going through those, you 15:20:33
12 know, necessary but not enumerated intermediate 15:20:37
13 steps. 15:20:44

14 Q That's -- that's a lot of information, and 15:20:50
15 I don't think -- I don't think you talked about 15:20:54
16 these in your declaration, did you? 15:20:55

17 MR. REEVES: Objection. Form, and to the 15:20:57
18 extent it misstates testimony. 15:20:59

19 A I don't know if I did or not, but it's 15:21:06
20 part of what would be obvious to a person of 15:21:08
21 ordinary skill in the art. I can check obviously 15:21:10
22 to see what I say there. 15:21:15

1 Q Yeah. If it doesn't take you, you know, a 15:21:20
2 really long time, can you please check where you 15:21:22
3 state it? 15:21:26

4 A Well, it won't take very long. It's right 15:21:27
5 here. Paragraphs 181 to 183, or going back to 15:21:31
6 180, Shimomura describes the voice processing 15:21:39
7 capabilities that allow that. Person of ordinary 15:21:42
8 skill would break down that structure into 15:21:47
9 intention analyzing unit and content acquisition 15:21:53
10 in order to provide the functions more 15:21:56
11 efficiently, and then goes on to talk about the 15:21:58
12 modular design which I discussed a moment ago. 15:22:03
13 And, furthermore, that's the way systems like the 15:22:07
14 Siri system actually work. 15:22:12

15 The -- everybody works that way mainly 15:22:22
16 because the specifics -- so, again, the general 15:22:25
17 questioning, question answering problem is very 15:22:33
18 difficult, and typically what we in the industry 15:22:36
19 do is build answers to limited domain queries kind 15:22:41
20 of one at a time. 15:22:48

21 So, for example, an early domain was 15:22:49
22 airline information, reservation information. In 15:22:53

1 all of these things to respond to a query you have 15:23:01
2 to understand which of these domains is being 15:23:09
3 asked about and then where, you know, identifying 15:23:11
4 the correct response. 15:23:18

5 So what I say in 181 is implementing the 15:23:21
6 functionalities as units within the control unit 15:23:25
7 would have been an obvious design choice and for 15:23:28
8 modularity maintenance and troubleshooting, and I 15:23:30
9 also will say that having been in that field since 15:23:34
10 the mid 1980s, this is the way all the systems 15:23:38
11 were designed, both the academic systems and the 15:23:44
12 commercial systems, and it's just the standard 15:23:48
13 procedure, so really obvious right thing to do. 15:23:53

14 Q Let's go back to paragraph 163. 15:24:02

15 A Mm-hmm. 15:24:08

16 Q So here you opine, and I quote, "A person 15:24:20
17 of ordinary skill in the art would have been 15:24:23
18 motivated to modify Shimomura's volume change 15:24:25
19 table to include a range ending at 350 15:24:28
20 centimeters." 15:24:30

21 Is that right? 15:24:34

22 A Correct. 15:24:35

1	Q So earlier you testified that you don't	15:24:36
2	know why Shimomura will have different numbers for	15:24:39
3	these tables. Is there a reason why a POSITA	15:24:43
4	would have been motivated to change the number at	15:24:49
5	the end of --	15:24:51
6	A Well --	
7	Q -- page 79?	15:24:58
8	MR. REEVES: Objection. Form.	15:24:59
9	A Sorry. Well, this is a classic thing.	15:25:00
10	There's an unmet need without -- you know, you	15:25:07
11	have distances of, people talking at distances of	15:25:14
12	greater than three and a half meters and a need to	15:25:16
13	be understood at those distances. It's an easy	15:25:21
14	thing to do and, you know, trivial to try. So why	15:25:24
15	not do that?	15:25:34
16	As you heard me say before, I do not know	15:25:35
17	why those obvious ranges weren't included in the	15:25:38
18	original rendering of the patent, but my best	15:25:42
19	guess is just carelessness in the drafters.	15:25:47
20	Q Do you think a POSITA would find any	15:26:06
21	reason to set those ranges differently? And by	15:26:09
22	those ranges I mean the volume change range	15:26:13

1 compared to the content output range. 15:26:16

2 MR. REEVES: Objection. Form. Calls for 15:26:20

3 speculation. 15:26:26

4 A So merely speculating, there's no 15:26:26

5 principled reason to establish any of the 15:26:28

6 thresholds aside from the fact that you have to 15:26:33

7 put the threshold somewhere, and that it sounded 15:26:37

8 like the use case included some distances that 15:26:43

9 were greater than 250 centimeters, and that would 15:26:46

10 have motivated the desire to extend the range to 15:26:52

11 those longer distances. 15:26:56

12 Q Yeah. Let's go -- why don't you take some 15:27:17

13 time and look through your declaration for the 15:27:20

14 obviousness of -- for the obviousness ground for 15:27:24

15 Shin, and let me know if you identified anywhere 15:27:27

16 or where you identify differences between Shin and 15:27:31

17 the claims. 15:27:36

18 A We're talking about Shin? 15:27:37

19 Q Yeah.

20 A No longer Shimomura? Okay. 15:27:38

21 Okay. Thank you for the gift of time 15:30:03

22 there. So I -- I want to preface this discussion, 15:30:05

1 this response, by reminding you that I believe
2 that at the end of the day there's no difference,
3 that I believe that the teachings of the '337
4 patent are anticipated in their entirety by the
5 disclosures of the Shin reference. So please
6 understand that, you know, from the get-go. So I
7 certainly don't want to give up any ground to that
8 by talking about the obviousness arguments that
9 we've already spoken of.

10 As you know, in that section concerning
11 obviousness, regarding Claim 1, the distinction
12 seems to be teaching just a single threshold as
13 what's in -- which is what's stated in the '337
14 patent with the disclosure of multiple thresholds
15 in Shin, and in -- with regard to Claim 2, and
16 we've already discussed this, potential concern
17 was that the modular structure -- let me just take
18 a look at the '337 patent just for a moment.

19 So figure 2 of, of the '337 patent has
20 some specific components: The intention analyzing
21 unit, the acquisition content, et cetera, et
22 cetera, et cetera. As you know, I argue that you

1 cannot produce the outcome that's, that's 15:32:16

2 disclosed by Shin without having those units in 15:32:19

3 there either explicitly or implicitly, but that 15:32:25

4 would be considered to be a claim departure. 15:32:30

5 With regard to Claim 3, that that claim is 15:32:34

6 omitting parts of the user's information, and 15:32:38

7 that's, again, may not be explicitly disclosed in 15:32:41

8 Shin, but to the extent that it isn't, I talked 15:32:46

9 about the obviousness arguments. 15:32:56

10 And finally, Claims 4 and 5, as described 15:32:58

11 in the declaration, are -- are not new ground. 15:33:01

12 They're things that were already discussed in 15:33:10

13 conjunction with Claims 1 through 3. 15:33:14

14 Q Okay. Yeah, I understand that you have 15:33:17

15 alternative grounds, but apart from what you 15:33:23

16 identified earlier in your testimony that Shin 15:33:27

17 teaches multiple threshold versus a single 15:33:32

18 threshold, is there any other difference that you 15:33:36

19 identified between Shin and Claim 1? 15:33:39

20 MR. REEVES: Objection. Form. Misstates 15:33:44

21 testimony. Asked and answered as well. 15:33:47

22 A Well, you heard me say a moment ago that 15:34:09

1 some of the internal blocks that are explicitly 15:34:16
2 cited in Shin or that are explicitly cited in the 15:34:21
3 '337 patent are not cited explicitly in the Shin 15:34:26
4 reference, but you would need to have those blocks 15:34:30
5 in some form or another in order to produce the 15:34:34
6 outputs that are disclosed by Shin. So that's 15:34:37
7 another difference that I consider not 15:34:41
8 substantive. 15:34:46

9 The other -- what was the other thing? 15:34:46
10 Oh. The other thing having to do with specific 15:34:49
11 modifications it's a little bit different in Shin 15:34:54
12 than in the, than in the '337 patent, but again, 15:34:58
13 these are all things that I would consider to be 15:35:03
14 nonconsequential. 15:35:07

15 Q Thank you. Anything else? 15:35:09

16 A No. 15:35:12

17 Q We'll take a break here. We'll be back in 15:35:16
18 five minutes. 15:35:21

19 THE VIDEOGRAPHER: We're going off the 15:35:22
20 record. The time is 3:35. 15:35:24

21 (A recess was taken.) 15:49:42

22 THE VIDEOGRAPHER: We are going back on 15:49:42

1	the record. The time is 3:49.	15:49:46
2	BY MR. TO:	15:49:49
3	Q All right, Dr. Stern. I just have one	15:49:50
4	more question for you. Can you take a look at	15:49:51
5	your declaration and let me know where in your	15:49:54
6	declaration you discuss the differences between	15:49:58
7	Shimomura and Claim 1?	15:50:01
8	MR. REEVES: Objection. Form. Asked and	15:50:07
9	answered.	
10	Counsel, that section is about 40 pages of	
11	Dr. Stern's declaration. Do you want him to read	15:51:11
12	all of that before he responds?	15:51:11
13	MR. TO: I mean is he aware whether he did	15:51:14
14	that or not? He wrote the declaration; right?	15:51:18
15	THE WITNESS: It was a while ago and I	15:51:25
16	have to be very careful in what I say.	15:51:27
17	MR. REEVES: Do you want him to just	15:51:31
18	answer off the top of his head or do you want him	15:51:33
19	to review the whole declaration?	15:51:37
20	THE WITNESS: I'm not going to answer off	15:51:38
21	the top of my head.	15:51:41
22	MR. REEVES: Counsel, do you want him to	15:52:07

1 read all 40 pages? Is that what you're asking? 15:52:09

2 MR. TO: You can -- he can read it if he 15:52:12

3 needs to in order to answer the question, but I'm 15:52:14

4 not asking him to read all 40 pages before 15:52:16

5 answering my question. Only if he needs to. 15:52:18

6 THE WITNESS: Sure enough. If -- 15:52:23

7 Q And just to clarify, I was only asking in 15:57:28

8 the context of Claim 1. So it really should be 20 15:57:32

9 pages. 15:57:36

10 A Oh, okay. I'm only on Claim 1. Sorry 15:57:37

11 about that. I'm sure you mentioned that 15:57:39

12 originally. 15:57:41

13 So there -- I can answer it on a couple of 15:57:43

14 different levels. Obviously the Shimomura 15:57:47

15 reference was motivated by a different set of 15:57:51

16 circumstances on the ground. It seems like their 15:57:57

17 envisioned model was something like a humanized 15:58:04

18 robot and, whereas the '337 seems to be addressing 15:58:08

19 more general processing capability without a 15:58:14

20 specific application disclosed. 15:58:18

21 There are some specific differences, many 15:58:22

22 of which we've already addressed that are, you 15:58:26

1 know, I don't consider to be consequential. For 15:58:30
2 example, Shimomura explicitly discloses stereo 15:58:34
3 cameras to obtain the distance information, 15:58:39
4 whereas the '337 patent is a lot more non-specific 15:58:41
5 that -- they say simply that a distance 15:58:50
6 calculation is obtained and that you use that to 15:58:53
7 modify the content farther on. I forget 15:58:57
8 whether -- I'm looking for this right now. 15:59:02
9 Q Yeah, and I'm not -- I'm not asking you to 15:59:18
10 identify the entire universe of differences. Just 15:59:21
11 the ones you provided in your declaration. 15:59:26
12 A Well, the differences, you know, in the 15:59:28
13 declaration wherever I talk about an obviousness 15:59:31
14 argument rather than, rather than anticipation, 15:59:36
15 obviously I'm saying there are some differences 15:59:43
16 that require some discussion but not necessarily 15:59:47
17 concerning Claim 1. Let me -- I know that in my 15:59:49
18 prior discussions with counsel for Amazon I had 16:00:05
19 asked the question -- 16:00:11
20 MR. REEVES: No, no, no. 16:00:12
21 THE WITNESS: Oh, that's something we 16:00:14
22 can't talk about. 16:00:15

1 MR. REEVES: It's privileged. 16:00:15

2 THE WITNESS: Okay. 16:00:17

3 MR. REEVES: Stop you there. 16:00:17

4 A Thank you. I'm not going to talk about 16:00:19

5 that. In any case, there is an issue that we 16:00:21

6 spoke about previously that the '337 patent talks 16:01:01

7 about a threshold without specifying what it is. 16:01:07

8 Shimomura uses multiple thresholds. So that's in 16:01:11

9 there. 16:01:16

10 Q Anything else? 16:01:28

11 A I'm working on it. 16:01:30

12 There is an issue concerning control of 16:01:57

13 the speech volume and slightly differently in the 16:02:00

14 Shimomura reference than in the, than exactly 16:02:05

15 according to spec of the patent. 16:02:14

16 Q Can you point me to a paragraph that you 16:02:25

17 addressed the speech volume? 16:02:28

18 A Well, there's the general discussion 16:02:46

19 beginning on page 78, limitation 1(h), output 16:02:51

20 controller adjusts volume of the voice data, and 16:02:56

21 page 79, there are volume change tables that are, 16:03:02

22 you know, for which we've previously discussed 16:03:09

1 suggested obvious modifications, and then that 16:03:13
2 discussion goes on for a number of pages, and 16:03:25
3 that's pretty much it for Claim 1. 16:03:28

4 Q Okay. That's all for Claim 1; right? 16:03:32

5 A That's correct. 16:03:36

6 Q I pass the witness. 16:03:38

7 MR. REEVES: No questions. 16:03:41

8 MR. TO: All right. I think we're done. 16:03:47

9 We can go off the record. 16:03:51

10 THE VIDEOGRAPHER: Please stand by. This 16:03:54

11 marks the end of the deposition of Dr. Richard 16:03:56

12 Stern. We are going off the record. The time is 16:03:59

13 4:04 p.m. 16:04:01

14 (Off the record at 4:04 p.m. Transcript
15 orders discussed with counsel.)

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1 CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC

2 I, Janet A. Hamilton, Registered Diplomate
3 Reporter and Notary Public within and for the
4 State of Maryland do hereby certify:

5 That RICHARD MARTIN STERN, JR., Ph.D., the
6 witness whose deposition is hereinbefore set
7 forth, was duly sworn by me before the
8 commencement of such deposition and that such
9 deposition was taken before me and is a true
10 record of the testimony given by such witness.

11 I further certify that the adverse party,
12 SoundClear Technologies, LLC, was represented by
13 counsel at the deposition.

14 I further certify that the deposition of
15 RICHARD MARTIN STERN, JR., Ph.D., occurred
16 remotely via Zoom videoconference on Thursday,
17 October 30, 2025, commencing at 12:15 p.m. to 4:04
18 p.m. Eastern Standard Time.

19 I further certify that reading and signing
20 of said deposition was not discussed on the record
21 by the parties.

22 I further certify that I am not related to

1 any of the parties to this action by blood or
2 marriage, I am not employed by or an attorney to
3 any of the parties to this action, and that I am
4 in no way interested, financially or otherwise, in
5 the outcome of this matter.

6
7 IN WITNESS WHERE, I have hereunto set my hand this
8 14th day of November, 2025.

9
10
11
12
13
14
15
16
17 
18 _____

19 My commission expires:

20 February 4, 2028.

21 Notary Public in and for the

22 State of Maryland.

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