

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

META PLATFORMS
Petitioner

v.

JAWBONE
Patent owner

IPR No. 2023-01291
Patent No. 8,467,543

REMOTE EXAMINATION OF
DAVID ANDERSON

TAKEN ON
FRIDAY, JUNE 14, 2024

CERTIFIED STENOGRAPHER:
JESSIE WAACK, RDR, CRR, CCRR, NYRCR, NYACR,
CCR-NJ (No. 30XI008238700), CSR-TX (No. 11958)
CCR-WA (No. 21007264), CSR-CA (No. 14420),
REALTIME SYSTEMS ADMINISTRATOR
JOB NO.: 9349

Page 2 1 2 3 4 5 REMOTE EXAMINATION of DAVID 6 ANDERSON, taken before JESSICA R. WAACK, 7 Registered Professional Reporter, Registered 8 Merit Reporter, Certified Realtime Reporter, 9 Registered Diplomate Reporter, California 10 Certified Realtime Reporter, New Jersey 11 Certified Court Reporter (License No. 12 30XI008238700); Texas Certified Shorthand 13 Reporter (License No. 11958); Washington State 14 Certified Court Reporter (License No. 15 21007264); California Certified Shorthand 16 Reporter (License No. 14420); New York 17 Association Certified Reporter, New York 18 Realtime Court Reporter and Notary Public of 19 Washington, D.C. and the States of New York, 20 Pennsylvania, Delaware, Maryland and Virginia, 21 held remotely via a videoconference platform, 22 on Friday, June 14, 2024, commencing at 23 10:04 a.m. EDT and concluding at 10:53 a.m. 24 EDT. 25	Page 4 1 INDEX TO EXAMINATION 2 WITNESS: DAVID ANDERSON 3 4 EXAMINATION PAGE 5 BY MR. COWELL 9 6 BY MS. WANG 33 7 8 INDEXED PAGES 9 PAGE 10 STIPULATIONS 6 11 DAVID ANDERSON, sworn 8 12 REPORTER CERTIFICATE 36 13 INSTRUCTIONS TO WITNESS 37 14 DECLARATION UNDER PENALTY OF PERJURY 38 15 ERRATA SHEET 39 16 17 INFORMATION REQUESTED 18 None 19 20 WITNESS INSTRUCTED NOT TO ANSWER 21 None 22 23 24 25
Page 3 1 A P P E A R A N C E S 2 (all appearing remotely) 3 4 ON BEHALF OF THE PETITIONER: 5 PAUL HASTINGS LLP 6 BY: GRACE WANG, ESQ. 7 200 Park Avenue 8 New York, New York 10166 9 212-318-6833 10 Gracewang@paulhastings.com 11 12 ON BEHALF OF THE PATENT OWNER: 13 FABRICANT LLP 14 BY: RICHARD COWELL, ESQ. 15 411 Theodore Fremd Avenue, Suite 206 16 South Rye, New York 10580 17 212-257-5797 18 Rcowell@fabricant.com 19 20 A L S O P R E S E N T 21 ALIA BASAR, summer associate 22 23 --o0o-- 24 25	Page 5 1 INDEX TO PREVIOUSLY MARKED EXHIBITS 2 WITNESS: DAVID ANDERSON 3 Friday, June 14, 2024 4 MARKED DESCRIPTION PAGE 5 Exhibit 1003 Dr. Anderson's 12 6 declaration 7 Exhibit 1005 Prior reference Andrea 14 8 9 ** No exhibits were included in the 10 transcript ** 11 12 --o0o-- 13 14 15 16 17 18 19 20 21 22 23 24 25

2 (Pages 2 to 5)

Page 6 1 STIPULATIONS 2 3 IT IS HEREBY STIPULATED AND 4 AGREED by and between counsel no party to 5 the litigation will object to the remote 6 deposition on the grounds that the 7 certified stenographer may not have the 8 legal authority to swear in the witness. 9 FURTHER STIPULATED AND AGREED 10 that all parties are aware the certified 11 stenographer is not physically present in 12 the deposition room with the witness and 13 will be administering the oath and 14 reporting this deposition remotely. 15 FURTHER STIPULATED AND AGREED 16 this transcript and all testimony will have 17 the same force and effect as if everyone 18 was present in person in the deposition 19 room. 20 FURTHER STIPULATED AND AGREED all 21 parties and their counsel consent to this 22 arrangement and waive any objections to 23 this manner of reporting. 24 25	Page 8 1 currently physically located. 2 At this time, I will ask all 3 parties, starting with the examining 4 attorney, to please indicate your 5 agreement by stating your name, your 6 firm affiliation, whom you represent 7 and your agreement to the 8 afore-mentioned statements. Once 9 everyone has completed, I will swear in 10 the witness. 11 MR. COWELL: This is Richard 12 Cowell of Fabricant LLP representing 13 Patent Owner Jawbone Innovations, and I 14 agree to the foregoing. 15 MS. WANG: Grace Wang from Paul 16 Hastings representing Petitioner Meta, 17 and I agree to the foregoing 18 statements. 19 THE STENOGRAPHER: Thank you. 20 ***** 21 DAVID ANDERSON, sworn 22 on oath and/or affirmed, called as a 23 witness herein, was examined and testified 24 as follows: 25 *****
Page 7 1 ***** 2 REMOTE PROCEEDINGS 3 June 14, 2024, 10:04 a.m. 4 ***** 5 THE STENOGRAPHER: Good morning. 6 My name is Jessica Waack, and I am the 7 certified stenographer for today's 8 proceeding. 9 By agreement of all participants, 10 this deposition is being handled via 11 remote means. It is understood by all 12 participants that the certified 13 stenographer is not physically present 14 in the deposition room with the witness 15 and will be administering the oath and 16 reporting this deposition remotely. 17 All participants further agree 18 this transcript and all testimony will 19 have the same force and effect as if 20 everyone was present in person in the 21 deposition room and agree not to 22 challenge the validity of any oath 23 administered by the stenographer, even 24 if the stenographer is a notary of a 25 state other than where the deponent is	Page 9 1 EXAMINATION 2 BY MR. COWELL: 3 Q. Good morning, Dr. Anderson. 4 A. Good morning, Rich. 5 Q. Can you state your full name for 6 the record, please. 7 A. David Verl Anderson. Verl is 8 V-e-r-l. 9 Q. And you and I have met before, 10 isn't that right? 11 A. Yes. It's been a while. 12 Q. Yeah. So you've been deposed 13 before, correct? 14 A. I have. 15 Q. Something on the order of 15 to 16 20 times; is that right? 17 A. Yes. 18 Q. Okay. I'll just briefly go over 19 the ground rules even though I know you've 20 heard them just this week. 21 You're here to answer questions, 22 and I'm here to ask them; is that right? 23 A. That's my understanding. 24 Q. Okay. If at any time you don't 25 understand one of my questions, please ask

3 (Pages 6 to 9)

Page 10 1 me to clarify, and I'll do my best to 2 clarify or rephrase; is that fair? 3 A. Yes. 4 Q. If you do answer my question, 5 however, I will assume you understood it; 6 is that fair? 7 A. Yes. 8 Q. If at any time you would like a 9 break, just let me know, and we'll take a 10 break. 11 However, if there's a pending 12 question, I will ask that you answer it 13 before we go on the break; is that fair? 14 A. Okay. 15 Q. And, finally, your attorney may 16 object from time to time. Unless she 17 instructs you not to answer, you still have 18 to answer my question. 19 Do you understand? 20 A. Yes. 21 Q. Are you on any medications that 22 would affect your ability to give full and 23 truthful testimony today? 24 A. No. 25 Q. Is there any other reason why you	Page 12 1 also called Georgia Tech. 2 Q. And do you understand that we're 3 here for a deposition in the proceeding 4 IPR 2023-01291? 5 A. 2023-01291, yes. 6 Q. And you understand that relates 7 to U.S. Patent number 8,467,543; is that 8 right? 9 A. Yes. 10 Q. Okay. And going forward, I'm 11 going to refer to that as the '543 patent; 12 is that all right? 13 A. Yes. 14 Q. And Exhibit 1003, which I believe 15 you have, is your declaration; is that 16 right? 17 A. Yes. 18 Q. Okay. 19 (Whereupon, Previously Marked 20 Exhibit 1003, is identified for 21 the record.) 22 BY MR. COWELL: 23 Q. And that declaration you 24 originally submitted in the earlier 25 proceeding, Google LLC vs. Jawbone
Page 11 1 can't give full and truthful testimony 2 today? 3 A. No. 4 Q. Do you have any materials with 5 you? 6 A. Yes. 7 Q. What materials do you have? 8 A. I have unmarked-up copies, clean 9 copies of my declaration, the '543 patent 10 and then the prior art references, Andrea, 11 Holzhrichter, Hussain, Stevens and Alcivar. 12 I also on another monitor have 13 soft copies of my petition and these 14 things. So you'll sometimes see me looking 15 over to the side. 16 Q. Within any of those copies, are 17 there any notes, annotations or other 18 alterations to them from the originals? 19 A. No. 20 Q. Do you have any applications open 21 besides the soft copies you mentioned and 22 the Zoom window? 23 A. I do not. 24 Q. Where do you work, Dr. Anderson? 25 A. Georgia Institute of Technology,	Page 13 1 Innovations; is that right? 2 A. Yes. 3 Q. Did you make any alterations to 4 Exhibit 1003 when you submitted it for this 5 case? 6 A. I did not. 7 Q. And you were previously deposed 8 in regards to Exhibit 1003; is that right? 9 A. Yes. 10 Q. And did you tell the truth at 11 that deposition? 12 A. Yes. 13 Q. Have your opinions changed in any 14 way since the time of that deposition? 15 A. No. 16 Q. Now, the proceeding we're in 17 today asserts three grounds of invalidity; 18 is that correct? 19 A. Yes. 20 Q. And all those grounds are 21 based -- excuse me, all those grounds are 22 obviousness based; is that correct? 23 A. That is correct. 24 Q. And they all involve some 25 combination of the references Andrea,

4 (Pages 10 to 13)

Page 14 1 Hussain, Holzrichter, Stevens and Alcivar; 2 is that right? 3 A. Yes. 4 Q. When were you hired to work on 5 this case by Meta? 6 A. I don't recall exactly. It was 7 very shortly before this petition was 8 filed. 9 Q. Did you conduct a new prior art 10 search when you were hired by Meta? 11 A. I did not. 12 Q. Sitting here today, are you aware 13 of any references that anticipate any claim 14 of the '543 patent? 15 A. No. 16 Q. So I would like to talk about 17 Andrea, which is Exhibit 1005. 18 A. Okay. 19 (Whereupon, Previously Marked 20 Exhibit 1005, is identified for 21 the record.) 22 BY MR. COWELL: 23 Q. Before you started working on -- 24 on the IPRs relating to the '543 patent, 25 had you ever seen Andrea before?	Page 16 1 Andrea. 2 And you're familiar with 3 Figure 2, correct? 4 A. Yes. 5 Q. Would you say Figure 2 is a fair 6 representation of the overall disclosure of 7 Andrea? 8 MS. WANG: Objection. Form. 9 THE WITNESS: This is a very 10 high-level figure for one of the 11 embodiments. 12 BY MR. COWELL: 13 Q. And you used these figures, in 14 your opinion, correct? 15 A. I did. 16 Q. Now, taking a look at Figure 2, 17 we see there is something called a, quote, 18 speech and noise, end quote, microphone; is 19 that right? 20 A. There's microphone 12 that shows 21 speech and noise as the input, yes. 22 Q. And there's also microphone 14 23 that shows noise as the input; is that 24 right? 25 A. Yes.
Page 15 1 A. This particular patent, probably 2 not. But I was aware of Andrea as a 3 company and their products. 4 Q. How did you become aware of 5 Andrea as a company? 6 A. I work in audio signal 7 processing, and they were known in the 8 field. 9 Q. Are they still in existence 10 today? 11 A. I believe so. 12 Q. Have you ever used an Andrea 13 product? 14 A. Yes. 15 Q. Have you ever used an Andrea 16 product that included two microphones? 17 A. I never looked at the inside of 18 the product I used. I had a headset, an 19 Andrea headset with a boom microphone 20 similar to that described in here. But, 21 once again, I didn't look inside. 22 Q. Did that headset perform noise 23 canceling? 24 A. I don't recall. 25 Q. Let's take a look at Figure 2 of	Page 17 1 Q. And to keep the record clear, I'm 2 just going to go by the numbers just to 3 make this a little clearer; is that all 4 right? 5 A. Sure. 6 Q. Now, the output of a mic 12 goes 7 into the positive input of the op amp 16; 8 is that right? 9 A. Yes. 10 Q. Okay. And the output of mic 14 11 goes into the negative input of op amp 16; 12 is that right? 13 A. Yes. 14 Q. And, in your opinion, that op amp 15 then would subtract the signal coming from 16 mic 14 from the signal from mic 12; is that 17 right? 18 A. Yes. 19 Q. Now, in the Andrea invention, 20 that operation was -- the subtraction 21 operation is always going on; is that 22 right? 23 MS. WANG: Objection. Vague. 24 THE WITNESS: Yes. 25 ///

5 (Pages 14 to 17)

Page 18 1 BY MR. COWELL: 2 Q. There's no outside control signal 3 that turns that operation on or off; is 4 that correct? 5 A. There is nothing shown for this 6 embodiment here that would do that. 7 Q. Are you aware of any embodiment 8 within Andrea that has that sort of 9 functionality? 10 A. Figure 28 shows a situation in 11 which the connections are different and it 12 can be switched between the microphone 13 signal and another input. 14 Q. What's that input? 15 A. It goes to ground, and it's 16 labeled talk through position. 17 Q. Did you rely on the embodiment 18 shown in Figure 28 for any portion of your 19 opinions? 20 MS. WANG: Objection. Form. 21 THE WITNESS: I actually refer to 22 this embodiment in a discussion of the 23 vox circuit in my opinions. 24 BY MR. COWELL: 25 Q. And it seems like you have a	Page 20 1 You say vox circuit 1950. Is 2 that the vox circuit we're talking about 3 here? 4 A. Yes. 5 Q. And that's -- that's so that vox 6 circuit 1950 is shown in Figure 28, right? 7 It's a particular vox there? 8 A. Yes. 9 Q. And so that's after that switch 10 we were talking about? 11 A. I don't know what you mean by 12 "after." The vox has some control, I 13 believe, over that switch or that it can be 14 put in the talked to position another way. 15 I could go back and review that part if you 16 want a more clear answer. 17 Q. And what does "the talk through 18 position" mean? 19 A. That enables -- I'm looking at 20 the patent at the bottom of Column 6. 21 "It added a talk to feature which 22 enables the user to hear the microphone 23 audio signals as well as the external audio 24 from the surrounding environment without 25 the physical addition of any other
Page 19 1 particular paragraph in mind. 2 Could you direct me to where 3 you're looking? 4 A. I don't recall. I'm unable to 5 find it. If you would like me to look. 6 I'm going by memory there. 7 Q. Oh, I see. They are discussing, 8 I believe it is -- yeah, paragraph 61 you 9 mention a vox circuit. 10 A. Yes. I do mention it in 11 paragraph 61. 12 Q. But even then, do you rely on 13 this switch you're talking about shown in 14 Figure 28 for any portion of your opinions? 15 MS. WANG: Same objection. 16 THE WITNESS: Well, that's part 17 of the vox circuit I discuss. Is there 18 a particular aspect of my opinion that 19 you're looking for? 20 BY MR. COWELL: 21 Q. I'm just -- want to make sure I 22 understand your opinion correctly. When 23 you use the vox circuit -- and I'm just 24 going to point you to the same 25 paragraph 74.	Page 21 1 microphone elements." 2 Q. And you're familiar with the 3 concept of a VAD, correct? 4 A. Yes. 5 Q. And what does VAD stand for? 6 A. It stands for voice activity 7 detection or detector. And it generally 8 refers to -- well, there are two common 9 uses -- usages. 10 I think, as we discussed in my 11 last deposition, maybe it was for a 12 different patent, so I'll bring it up 13 again, it can either be used to describe 14 something that detects voicing, which is 15 speech sounds made when the vocal folds are 16 vibrating. 17 Or it's often also used to 18 discuss just the detection of speech or any 19 kind of speech. Since the alternative 20 abbreviation is SAD, I guess people prefer 21 to use VAD to SAD. 22 Q. It does sound happier. 23 Do you consider Andrea to contain 24 a VAD? 25 A. Andrea does contain something

Page 22 1 that detects speech, but that's not what 2 I've relied on primarily for this 3 proceeding. 4 Q. And what portion of Andrea 5 detects speech? 6 A. The VOX 1950. That's V-O-X. 7 Q. Now, one of your opinions is that 8 Andrea itself receives voice activity 9 signals; is that right? 10 A. Yes. 11 Q. And the voice activity signals 12 that you described Andrea receiving, those 13 come from the microphone array; is that 14 right? 15 A. The one that Andrea discloses do 16 come from the microphones -- in the 17 microphone array, the two microphones or 18 one or the other of them. 19 Q. Just to make sure we're on the 20 same literal page, I'm looking at page 74 21 of your opinions. 22 Is that where you are? 23 A. I am now. Let me review it. 24 Q. Certainly. 25 A. Okay.	Page 24 1 correctly -- using a sensor that's 2 independent. So for the later limitation, 3 we needed the combination. 4 Q. I see that's why you included the 5 alternatively paragraph 75; is that right? 6 A. Correct. 7 Q. Now, in paragraph 75, the last 8 sentence there, could you just read it out 9 loud into the record? 10 A. "A POSITA would have understood 11 that detecting a speech plus noise period 12 corresponds to receiving voice activity 13 signals that include information associated 14 with human voicing activity." 15 Q. And what are -- what are the 16 voice activity signals that correspond to 17 this detecting a speech plus noise period? 18 A. So in 75, this is referring to 19 the speech detector in Hussain. Hussain 20 states the top of the first column of the 21 second page that it is assumed -- and he 22 talks about the microphones -- and then he 23 says, "That an effective voice activity 24 detector, VAD, is available." 25 So for the combination with
Page 23 1 Q. And so here in paragraph 74, you 2 opine that Andrea alone meets this claim 3 element which is 1(a) based on that -- the 4 voice activity signals coming from the 5 microphone array; is that right? 6 A. So in 74, we put forward the 7 position that Andrea does meet at least 8 1(a) in isolation, that it detects -- it 9 receives voice activity signals that 10 include information associated with human 11 voicing activity. 12 We -- I later then go on to 13 explain that alternatively, and this is 14 important for meeting the later limitations 15 on that, that Hussain also teaches that you 16 need these voice activity signals. 17 So we teach both. Or my opinion 18 is that both of those combinations teach 19 receiving voice activity signals. 20 Q. Okay. You understood at the time 21 that Andrea by itself couldn't meet that 22 later limitation? 23 A. Yes. There's a later limitation 24 that says this must be independent -- 25 actually, let me pull it up so I say things	Page 25 1 Hussain we're discussing in 75, it's 2 referring to that VAD that Hussain suggests 3 is available. 4 Q. All right. And so my question 5 is: What are the voice activity signals? 6 A. In Hussain, he shows an output 7 from a speech/noise only block that go to 8 the subband processing blocks. It would be 9 that signal. Or if the signal was specific 10 to noise subbands, multiple signals. 11 Q. Okay. So in this case, it's -- 12 sorry. When you say "he shows," where are 13 you looking at? Is that Figure 1? 14 A. That's Figure 1 of Hussain. 15 Q. And if I understand your 16 testimony correctly, and please correct me 17 if I don't, you're saying the output of the 18 speech/noise only block at the top there is 19 the voice activity signals; is that right? 20 A. I think that would be considered 21 an example. He says that a VAD is 22 available, and he shows that -- she shows 23 an example of that in that figure that 24 comes from the two microphones, but the 25 output of that block that goes to the

1 subband processing units would be the
2 speech -- or the voice activity signals.

3 Q. And so I'm asking, in your
4 opinion here, and with regards to claim
5 element 1(a), what are the voice activity
6 signals that you say are being received?

7 MS. WANG: Asked and answered.

8 THE WITNESS: The output of the
9 voice activity detector that goes to
10 the denoising subsystem would be the
11 voice activity signals that meet the
12 claim element.

13 BY MR. COWELL:

14 Q. Okay. Now, you mentioned
15 Hussain. Let me turn to Hussain. Well,
16 you have it in front of me because you were
17 just telling me about it, actually.

18 A. I do have it in front of me.

19 Q. Okay. Now, in your opinion, you
20 say Hussain discloses automatically
21 selecting at least one denoising method; is
22 that right?

23 A. Yes.

24 Q. Actually, let me be a little more
25 specific here. And I'm looking at

1 just -- you just read out to me; is that
2 right?

3 A. It said it's based on that, yes.

4 Q. And Hussain teaches us how to
5 calculate the MSC, correct, on page 11?

6 A. Yes.

7 Q. That calculation is in the bottom
8 right-hand corner where it says, "When
9 there's an equation for MSC"; is that
10 right?

11 A. So it does give the equation
12 there, and then it says that it -- it goes
13 on to, "That is an averaged." And it goes
14 on to the next page, the top of the page.
15 Add -- let's see.

16 "The above adaptively averaged
17 MSC criteria can thus be used as an
18 effective means for determining the level
19 of correlation between the disturbing
20 noises at various frequency bands by
21 averaging the above MSC above each
22 respective subband during the noise alone
23 period in intermittent speech."

24 Q. Okay. And so just so we're
25 clear, because I may be misunderstanding

1 paragraphs 122, 123. And just let me know
2 when you're on the same page.

3 A. Okay.

4 Q. Now, if you look at the abstract
5 of Hussain, the second -- excuse me, the
6 second sentence says, "A new robust metric
7 is developed which is capable of realtime
8 implementation in order to automatically
9 select the best form processing within each
10 subband."

11 Do you see that?

12 A. Yes.

13 Q. And that's the automatic
14 selection that Hussain discloses, correct?

15 A. That is. But it goes on to
16 describe it further. "It is based on an
17 adaptively estimated interchannel magnitude
18 squared coherence (MSC) relationship which
19 is used to detect the level of correlation
20 between in-band signals from multiple
21 sensors during noise-only periods and
22 intermittent speech."

23 Q. Right. And that was going to be
24 my next question. Is the metric Hussain is
25 talking about that MSC metric that you were

1 here, at the top of page 12, there's a
2 formula for MSC bar.

3 Do you see that?

4 A. Yes.

5 Q. That's the averaged MSC; is that
6 right? The adaptively averaged MSC, I
7 should say?

8 A. Yes.

9 Q. And the MSC formula that we have
10 on page 11, that's an MSC at each of the
11 frequency bands; is that right?

12 A. That is. But that's not one
13 that's used for determining the processing
14 mechanism.

15 The one that's used is the one on
16 top of page 12, the averaged one. It's
17 averaged for each frequency band but only
18 during noise only periods.

19 Q. Now, the input to the MSC
20 calculation -- sorry. Strike that.

21 The one you're talking about on
22 the top of page 12, MSC bar, that's a
23 summation because we see the signal there
24 of MSC of a number of frequency bands then
25 divided by L if I'm understanding it right;

Page 30 1 is that right. 2 A. It's actually -- so the average, 3 but not over frequency bands. It's an 4 average over time periods over blocks. The 5 block is indexed by -- I'm sorry, yes, as 6 the second argument of MSC. 7 And so this is an average over 8 time for a particular frequency band. And 9 the text around that explains that this is 10 only averaged during noise alone periods. 11 Q. Okay. And we see the inputs to 12 the MSC calculation on page 11 are spectral 13 densities; is that right? 14 A. Yes. 15 Q. Now, in your combination, and let 16 me just start -- I'm just talking about the 17 round one combination which I believe is 18 Andrea Hussain and holes Richter. 19 A. Okay. Which page are we at just 20 so I can -- 21 Q. I'm not at a specific page. I'm 22 just talking about round one, which is, you 23 know, let's say, like, the baseline 24 combination, and then you add other things 25 to it later. Is that a fair	Page 32 1 microphone. And -- or primary signal and 2 reference signal. 3 And then they use those to obtain 4 a transformed error signal E. E is 5 explained to be the noise reduced filtered 6 version of the subband speech signal. 7 And E, they've skipped a step, I 8 think for brevity, but it's clear that E is 9 equal to P minus H 3, the gain, times R. 10 So, finally, I also went and 11 double-checked the references that they 12 said their system is based on. 13 Reference 11 uses the same 14 notation, the same derivation and some of 15 the same figures but has a little bit more 16 room and explains -- puts in that 17 additional equation that shows you that E 18 actually comes from a subtraction of the 19 primary microphone minus a transfer 20 function times the reference microphone, 21 which provides a noise estimate that 22 ideally perfectly cancels the noise. 23 MR. COWELL: Let's take a 24 5-minute break. 25 THE WITNESS: Okay.
Page 31 1 characterization? 2 A. Sure. 3 Q. What does the actual subtracting 4 in your combination? 5 A. So there are two alternatives for 6 subtracting. The first, it's obvious, and 7 we've already discussed that Andrea does 8 subtracting. 9 The second is that we combine 10 Andrea with Hussain. Hussain does the same 11 subtracting except that he applies this 12 adaptive gain to the reference signal for 13 subtraction. 14 So that subtraction you can see 15 in three places, I guess. The first is the 16 terminology that's used. This is noise 17 cancelation or adaptive noise cancelation. 18 And that terminology is used on 19 page 10 and page 11 and elsewhere. 20 Cancelation means subtraction. You cancel 21 by subtracting or adding the opposite, 22 which is the same thing. 23 Second, the equations in the 24 first column of page 11 first give the 25 primary microphone and the reference	Page 33 1 THE STENOGRAPHER: Off the 2 record. 3 (Whereupon, a recess was taken at 4 10:42 a.m.) 5 THE STENOGRAPHER: Back on the 6 record. 7 BY MR. COWELL: 8 Q. All right. Dr. Anderson, how 9 would someone of skill in the art 10 understand the phrase "control signal"? 11 A. As probably something that's used 12 in the control of some action or event or 13 system. 14 MR. COWELL: I pass the witness. 15 MS. WANG: I just have a couple 16 of questions. 17 EXAMINATION 18 BY MS. WANG: 19 Q. So, Dr. Anderson, do you recall 20 your testimony from just before the break 21 when you were talking about the MSC and 22 Hussain? 23 A. Yes. 24 Q. And you mentioned that the MSC 25 calculation is averaged during the noise

Page 34 1 alone periods; is that right? 2 A. Yes. 3 Q. And is there something in Hussain 4 that would inform the Hussain system when a 5 time period is a noise alone period or not 6 a noise alone period? 7 MR. COWELL: Objection to form. 8 THE WITNESS: That would be the 9 output of the voice activity detector. 10 MS. WANG: I have no further 11 questions. 12 MR. COWELL: I have no questions. 13 THE STENOGRAPHER: Off the 14 record. 15 (Discussion held off the record.) 16 THE STENOGRAPHER: Just the same 17 order as the previous transcript? 18 I'm not sure what people ordered 19 in the past. 20 MR. COWELL: I'll take a 21 three-day on the final and a rough. 22 MS. WANG: I'll do a rough and a 23 normal, slow... 24 THE STENOGRAPHER: Regular 25 delivery?	Page 36 1 REPORTER CERTIFICATE 2 I, the undersigned, do hereby certify: 3 That DAVID ANDERSON was by me duly sworn 4 in the within-entitled cause; that said 5 deposition was taken at the time and place 6 herein named; and that the deposition is a 7 true record of the witness's testimony as 8 reported by me, a disinterested person, and 9 thereafter was transcribed. 10 I further certify that I am not 11 interested in the outcome of the said 12 action, nor connected with, nor related to 13 any of the parties in said action, nor to 14 their respective counsel. 15 IN WITNESS WHEREOF, I have hereunto set 16 my hand this 18th day of June, 2024. 17 Signature: __Requested__ Waived_X__Not Requested 18 19 20 21 22 JESSICA R. WAACK 23 Registered Diplomate Reporter 24 Certified Realtime Reporter 25 California Certified Realtime Reporter CCR-NJ (No. 30XI008238700) CSR-TX (No. 11958) CCR-WA (No. 21007264), CSR-CA (No. 14420)
Page 35 1 MS. WANG: Yes. 2 (Time noted: 10:53 a.m.) 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	Page 37 1 INSTRUCTIONS TO WITNESS 2 3 Please read your deposition over 4 carefully and make any necessary 5 corrections. You should state the reason 6 in the appropriate space on the errata 7 sheet for any corrections that are made. 8 After doing so, please sign the 9 errata sheet and date it. 10 You are signing same subject to 11 the changes you have noted on the errata 12 sheet, which will be attached to your 13 deposition. 14 It is imperative that you return 15 the original errata sheet to the deposing 16 attorney within thirty (30) days of 17 receipt of the deposition transcript by 18 you. If you fail to do so, the deposition 19 transcript may be deemed to be accurate 20 and may be used in court. 21 22 23 24 25

10 (Pages 34 to 37)

DECLARATION UNDER PENALTY OF PERJURY
META PLATFORMS V JAWBONE INNOVATIONS
Date of Deposition: June 14, 2024

I, DAVID ANDERSON, hereby
certify under penalty of perjury under the
laws of the State of _____ that
the foregoing is true and correct.

Executed this _____ day of _____, 2024,
at _____.

DAVID ANDERSON

SUBSCRIBED AND SWORN BEFORE ME
THIS DAY OF , 20

NOTARY PUBLIC

MY COMMISSION EXPIRES:

*** ERRATA SHEET ***

CASE: Meta v. Jawbone

DATE: June 14, 2024

WITNESS: David Anderson

JOB NO.: 9349

PAGE/LINE	CHANGE	REASON
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[illegible]

David Anderson

Subscribed and sworn to before me

this day of , 20 .

Notary Public

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