

SONY GROUP CORPORATION,
et al.,

Petitioner,
vs.

INMUSIC BRANDS, INC.,

Patent Owner.

Remote videoconference deposition of TODD MOON, PH.D., Volume I, taken on behalf of Patent Owner, at Burlingame, California, beginning at 9:20 a.m. and ending at 12:45 p.m. on Tuesday, October 24, 2023, before JOANNA BROADWELL, Certified Shorthand Reporter No. 10959.

1 APPEARANCES:

2

3 For Petitioner:

4 SMITH BALUCH LLP

5 Matthew A. Smith, Esq.

6 700 Pennsylvania Avenue, SE Suite 2600

7 Washington, DC 20003

8 (202) 669-6207

9 smith@smithbaluch.com

10

11 For Patent Owner:

12 THOMPSON COBURN LLP

13 Alan Norman, Esq.

14 505 N. 7th Street, One US Bank Center

15 Saint Louis, MO 63101

16 (314) 552-6284

17 anorman@thompsoncoburn.com

18

19 Also Present: Alex Weidner, Esq. and Kevin McMahon.

20

21

22

23

24

25

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

INDEX

WITNESS

EXAMINATION

TODD MOON, PH.D.

Volume I

BY MR. NORMAN

5

1 Burlingame, California, Tuesday, October 24, 2023

2 9:20 a.m.

3

4 TODD MOON, PH.D.,

5 having been administered an oath, was examined and

6 testified as follows:

7

8 EXAMINATION

9 BY MR. NORMAN:

10 Q Good morning, Dr. Moon. My name is Alan Norman.

11 State your name for the record, please.

12 A My name is Todd Kay Moon.

13 Q And have you been deposed before?

14 A I have.

15 Q About how many times?

16 A More than a dozen.

17 Q Okay. Have you been deposed in an IPR proceeding
18 before?

19 A No.

20 Q You know the rules of the road. I will ask
21 questions. We might talk over each other inadvertently.
22 You may think I am finished with a question when I am
23 not. Other than those we can try not to talk over each
24 other so the court reporter can get everything down.

25 A I understand.

1 Q Dr. Moon, I am handing you Paper 17 from this
2 case which is a notice of deposition. Have you seen
3 this document before?

4 A I don't believe I have, but I was informed that
5 the deposition was coming.

6 Q Fair enough. Is it your understanding that you
7 are here today regarding United States Patent No.
8 7,567,498.

9 A Yes.

10 Q And you refer to that patent as the '498 patent,
11 correct?

12 A Yes.

13 Q So if we use the phrase '498 patent today, you
14 will understand that to be U.S. Patent 7,567,498, right?

15 A Yes.

16 Q And is it your understanding that you are here
17 today in connection with a declaration you provided for
18 an IPR concerning the '498 patent?

19 A Yes. Let me just ask. You said two copies. Who
20 is keeping track of the exhibits here?

21 Q Okay. Let's go off the record for just a second.

22 (Discussion held off the record.)

23 BY MR. NORMAN:

24 Q Back on record. All right. Dr. Moon, I am
25 handing you and copy of Exhibit 1001. This is a copy of

1 U.S. Patent 7,567,498, correct?

2 A Yes.

3 Q And you have seen this patent before?

4 A Yes.

5 Q So I am handing you Exhibit 1002. Have you seen
6 this before?

7 A Yes.

8 Q And this is your declaration in connection with
9 the IPR?

10 A Yes.

11 Q And the IPR in this case is 202300294, correct?

12 A I don't recall the number.

13 Q I'll state for the record, then, this is for IPR
14 2023 00294. So Exhibit 1002 is a copy of the
15 declaration you provided regarding the '498 patent,
16 correct?

17 A Yes.

18 Q If you turn to Section VIII of your report,
19 Page 21.

20 A Thank you.

21 Q In Section Roman numeral VIII of your report
22 which begins on Page 21, you construed only one term,
23 correct?

24 A That is correct.

25 Q The only term you construed was "turntable,"

1 right?

2 A Correct.

3 Q Why didn't you construe other terms?

4 (Court reporter clarification.)

5 A Well first, briefly, why this one was construed.
6 A person of ordinary skill or a person generally, when
7 they think turntable, they might think the platter
8 portion of the turntable. But it's clear from the
9 patent itself that turntable means an appliance for
10 playing records that includes a rotating platter. So we
11 wanted to get that clear. That term was sort of
12 different from common usage, made clear in the patent.
13 We didn't deem it necessary to construe any other terms
14 for the purposes of clarifying our position.

15 Q Do you have a construction for the term
16 controller?

17 A No. That's an interesting word.

18 Q Okay. What are the steps you employ when
19 construing a term?

20 A So you look to the word as generally understood
21 by people. You look to the claims. You look to the
22 spec and see what those teach. And if necessary then
23 you say let's state the construction that will be
24 consistent with the terms in the claim as taught by the
25 spec.

1 Q Okay. So in Paragraph 42, the last sentence, you
2 say the term turntable should be construed as an
3 appliance for playing records that included a rotatable
4 platter, right?

5 A Yes.

6 Q You look at the '498 patent. So that is Exhibit
7 1001. And looking at the claims, a turntable as set
8 forth in claim one of the '498 patent includes a
9 rotatable platter, correct?

10 A Yes.

11 Q Because something must support that rotatable
12 platter the turntable would need some type of a
13 stationary platform such as a cabinet, right?

14 A Yes.

15 Q A turntable as set forth in claim one includes a
16 tonearm for receiving a photo cartridge for generating
17 analog audio signal representative of an audio
18 recording, correct?

19 A Yes.

20 Q A turntable as set forth in claim one of the '498
21 patent includes analog to digital converter for
22 receiving an analog audio signal from the phono
23 cartridge, correct?

24 A Yes.

25 Q A turntable as set forth in claim one includes a

1 controller responsive to said analog to digital
2 converter for generating an output digital audio signal
3 of music for speech representative of an audio recording
4 from an output of said analog to digital converter
5 representative of said analog audio signal, correct?

6 A Yes.

7 Q A turntable as set forth in claim one includes
8 the analog to digital converter and the controller
9 within the turntable, correct?

10 A Yes.

11 Q In a turntable of claim one, the output digital
12 audio signal is output from the turntable and used as
13 standard computer protocol, correct?

14 A Yes.

15 Q Because the turntable must output the digital
16 audio signal from the turntable in a standard computer
17 protocol, it needs some kind of an output jack such as a
18 USB or firewire or something like?

19 A Or something like that.

20 Q So a turntable of the claims of the '498 patent
21 has all of the requirements we just listed, right?

22 MR. SMITH: Objection to form.

23 THE WITNESS: Well, the turntable includes those
24 things. Is that what you are asking? As stated, the
25 turntable includes all these things.

1 BY MR. NORMAN:

2 Q Let me ask you one question first. Claim one is
3 the only independent claim of the '498 patent?

4 A Yes.

5 Q So all of the limitations that are in claim one
6 are in all of the independent claims and are in
7 the dependent claims as well?

8 (Court reporter clarification.)

9 A Yes.

10 Q So a turntable of the claims of the '498 patent
11 includes all of the requirements we just listed, right?

12 MR. SMITH: Objection to form.

13 (Discussion held off the record.)

14 BY MR. NORMAN:

15 Q So why does your construction not include the
16 analog to digital converter, controller, cabinet and
17 output jack?

18 A Well, let me start by explaining again why it
19 includes what it does. So as I said, a turntable coming
20 from like a dictionary is a rotatable platter. So if
21 you think of it, this is the thing that turns. But the
22 '498 talks about the claims requirement said analog to
23 digital and said controller are included within said
24 turntable.

25 So the turntable as construed needs to be

1 something that can have stuff inside it. It would be
2 unreasonable, unlikely to put this electronics in the
3 rotating platter when you could just as easy put it in
4 the turntable as we describe it.

5 And then it says further in the '498, the USB
6 signal being generated from the turntable from the USB
7 jack 22, which is on the cabinet of the turntable. So
8 the fact that the turntable includes a cabinet indicates
9 that the patent refers to the entire device rather than
10 just the platter and its drive mechanism.

11 Q Right. So I guess my point is or my question
12 is -- not my point -- my question is you testified --
13 I'm paraphrasing. I am not going to be stating it
14 precisely, but you testified that in construing claims
15 you were to look at the claims.

16 And the claim is, on a turntable with many
17 requirements. So that's why I was asking why you didn't
18 include all those when the claim -- the first thing you
19 said you thought to look at identifies all those
20 components.

21 MR. SMITH: Object to form.

22 THE WITNESS: That is an interesting -- I have to
23 say, it strikes me almost as a legal question. We could
24 have said a turntable is something that has all the
25 elements in this list. When we show that, this box that

1 we are calling a turntable in my declaration shows that
2 in fact it contains all these things.

3 So, yeah. The term might have been construed as
4 exactly the claim. But that -- I don't know. I have
5 never seen a construction like that. So I guess I could
6 say it was a minimal thing. It's something that these
7 things could be in or on as specified in the claim
8 language.

9 Q But you do acknowledge that the turntable of the
10 claims of the '498 patents must have all of the
11 limitations that we've identified.

12 MR. SMITH: Objection to form.

13 THE WITNESS: If it meets the claim language,
14 absolutely, that is the case.

15 BY MR. NORMAN:

16 Q And it must meet the --

17 A Or it doesn't infringe, it's not the claim as it
18 is.

19 Q Throughout your report you used the word POSITA.
20 Throughout your report you used the word POSITA. What
21 is a POSITA?

22 A POSITA is an acronym for person of ordinary skill
23 in the art.

24 Q Okay. And do you know what a person of ordinary
25 skill in the art is?

1 A In the context of my declaration or in general?

2 Q Either way. I mean, I am talking more in
3 general.

4 A Yeah. More generally a person of ordinary skill
5 in the art is a person at some level of attainment
6 appropriate to the background that you are talking about
7 that will be able to understand technology that goes
8 into it. In this particular case it seemed reasonable
9 to say that a POSITA would be someone with a background
10 in engineering, probably electrical engineering, with
11 about three years of experience.

12 Q Do you know whether there are factors for
13 determining what a person of ordinary skill in the art
14 is for a particular technology?

15 A I don't know what you are referring to.

16 Q And nobody has informed you -- let me ask you
17 this. Have you been informed as to what analysis is to
18 be taken in order to determine a person of ordinary
19 skill for a particular technology?

20 A That's not something I am remembering.

21 Q Do you know whether there are factors for
22 determining a level of skill in the art?

23 A That's -- to me it's been a matter of as an
24 educator knowing what students are learning, some sense
25 of what it would take for them to take their ideas and

1 turn those into product ideas. I have some sense of
2 that from an educational point of view, but I don't
3 think I have from what you may be referring to from a
4 legal point of view.

5 Q Okay. So you did not apply any legal factors in
6 determining a level of skill in the art, correct?

7 A I was looking at it from the point of view of an
8 engineer who has worked with people of ordinary skill.
9 And that was my basis for that judgment.

10 Q All right. So your judgment is based on your
11 subjective understanding, correct?

12 A Yes.

13 Q All right. Do you regard yourself as a person of
14 ordinary skill in the art?

15 A At least.

16 Q Okay. I am turning to Paragraph 69 of your
17 expert report. Three lines from the bottom of Page 33
18 you say, quote, "I understand that a person of ordinary
19 skill in the art is a hypothetical person that is deemed
20 to be aware of the content of all analogous prior art."
21 Do you see that?

22 A I see that.

23 Q What is your basis for that sentence?

24 A My basis was thinking in terms of we look at
25 arguments of obviousness. We say here is some art, and

1 then in light of that art this would have been obvious.
2 So in making that argument it's saying that, well, this
3 POSITA person could have been aware of that art.

4 Q Okay. But would it be fair to say that you are
5 not a hypothetical person?

6 A I strive to be a real person.

7 Q Would it be fair to say that you are not aware of
8 the content of all analogous prior art?

9 A A real person is not aware of all analogous prior
10 art.

11 Q Okay. So then -- so this sentence here
12 necessarily disqualifies you from being a person of
13 ordinary skill in the art, correct?

14 A Well, in terms of the level of preparation and
15 engineering degree and three years of experience, I
16 qualify that way.

17 Q But you are not a person of ordinary skill in the
18 art, correct?

19 A I am -- as I said before, I consider myself
20 beyond just a person of ordinary skill in my years of
21 experience.

22 Q Okay. This is a statement that is in your
23 declaration, correct, where you said you understand that
24 a person of ordinary skill in the art is a hypothetical
25 person that is deemed to be aware of the content of all

1 analogous prior art, right?

2 A Uh-huh.

3 Q You have identified or you testified that you are
4 not a hypothetical person, correct?

5 A Uh-huh.

6 Q I'm sorry. For the court reporter if you would
7 please say --

8 A Yes. Thank you.

9 Q And you have testified that you are not aware of
10 all analogous prior art, right?

11 A True. Yes.

12 Q Dr. Moon, I have handed to you Exhibit 1004 which
13 is a copy of European Patent Application 0 999 553. Do
14 you recognize Exhibit 1004?

15 A Yes.

16 Q In your declaration do you refer to Exhibit 1004
17 as Cortellesi?

18 A Cortellesi.

19 Q C-o-r-t-e-l-l-e-s-i. Please turn to Cortellesi,
20 Exhibit 1004, Column 1, Line 54 and 55.

21 A I am there.

22 Q All right. And that says Figure 1 is the first
23 block diagram of the storing, playing apparatus,
24 correct?

25 A Yes.

1 Q Please turn to Figure 1 of Cortellesi which is on
2 Page 6.

3 A I am there.

4 Q Starting in the middle of Figure 6 of Cortellesi,
5 there is a box marked EC that has components going into
6 it and components going out of it. Do you see that?

7 A I see that.

8 Q Is EC the central processing unit?

9 A It's the central process unit, and you might also
10 think of that as a controller.

11 Q Okay. My question is, is EC a central processing
12 unit?

13 A I want to be careful to use the words "EC is the
14 controller".

15 Q And is it referred to -- you say it is a
16 controller?

17 A Right.

18 Q And you testified you have not defined the term
19 "controller" --

20 A We haven't.

21 Q -- as used is the '498 patent, correct?

22 A Right.

23 Q Cortellesi doesn't refer to EC as a controller,
24 does it?

25 A Okay. He -- I'm going to read from Cortellesi.

1 This is coming from Column 2. "A central processing
2 unit EC comprising a microprocessor CPU processing
3 delivering data." This is from Column 2, 25 to 33. So
4 it's the CPU, but it acts in the role of a controller.

5 Q Okay. But my question is Cortellesi doesn't
6 refer to it as a controller?

7 A That is correct.

8 Q The central process unit EC runs software SW.

9 A Yes.

10 Q Okay.

11 A Yes.

12 Q Is -- do you see the box that says CA/D, correct?

13 A Yes.

14 Q And CA/D is an analog to digital converter,
15 correct?

16 A Yes.

17 Q The analog to digital converter, CA/D connects an
18 analogic input to the central processing unit EC,
19 correct?

20 A The box as drawn literally goes into the box
21 labeled SW, which is innately or intimately connected
22 with the box EC.

23 Q You say intimately connected with the box.

24 A That is, it's not like there is a line connecting
25 it. We have the EC and SW sort of -- I want to say

1 cotangent, bunched together, they run together.

2 Q Okay. So you go back to the SW?

3 A Right.

4 Q Which was the software?

5 A Yes.

6 Q Okay. My question, though, is the analog to
7 digital converter, CA/D, connects an analogic input to
8 the central processing unit.

9 A Through the box SW.

10 Q Okay. And you think that the -- so your
11 testimony is that the -- is the AD converter is actually
12 connected to the software and not connected to the EC?

13 A Now we're not talking like engineers. So those
14 run together. So there is software that runs on the EC.
15 The analog to digital converter, being hardware, has to
16 hook into the hardware. So he might have portrayed it
17 as connecting into that box at that part.

18 But ultimately the hardware connects to the
19 hardware. So the analog to digital converter is
20 connected to the EC. I am just looking how this picture
21 portrays it. But we understand that it is connected
22 that way.

23 Q The analogic input from Figure 1, its purpose is
24 to connect to outside audio sources, correct?

25 A Among other things. Figure 1 doesn't display

1 that. It shows LR, presumably left and right. We know
2 from Cortellesi that we are able to record vinyl
3 records, and Cortellesi doesn't teach us that we can't
4 record the very vinyl or from the very platter that is
5 portrayed in Cortellesi.

6 Q But the purpose of the analogic inputs that are
7 shown in Figure 1 is to connect to outside audio
8 sources, right?

9 A It is to connect to audio sources. I am not
10 clear what you mean by outside. Do you mean outside the
11 box, or do you mean outside of the block diagram shown
12 here.

13 Q Well, let's start with outside of the blocked
14 diagram.

15 A And I believe I tried to answer that question.
16 Outside the blocked diagram these blocks shown here,
17 there is the platter, there is a photo cartridge. There
18 is an audio signal. That signal could be one that is
19 picked up into the analogic input.

20 Q At a minimum, though, it's your understanding
21 that the analogic input, at least one of its purposes,
22 is to connect to outside audio sources, correct?

23 A So given that you understand that it can include
24 the phono player that is there, yes, you could have
25 other audio sources.

1 Q Now, you say it's to connect to -- what did you
2 say, the phono --

3 A The phono cartridge.

4 Q The phono cartridge is there. That's what you
5 said, right?

6 A I believe so, yes.

7 Q You don't have a phono cartridge in Figure 1, do
8 you?

9 A That's why I say it might be included in things
10 that you say are outside.

11 Q And in Cortellesi, Cortellesi talks about -- does
12 Cortellesi talk about the use of the analogic input?

13 A It talks about the converter, the CA/D, yes.

14 Q Well, I didn't ask if it talks about the CA/D
15 converter. I asked does it talk about the analogic
16 inputs?

17 A Where in the Cortellesi are you referring? Are
18 you Talking about the A to D converter it talks about?

19 Q My question to you is are you -- are you aware
20 and it is your understanding that there is no discussion
21 in Cortellesi concerning analogic input or that you
22 don't know?

23 A Let me read to you what it -- what I am aware of.
24 So I am on Column 2 starting at 33.

25 Q Hold on a second. Sorry to interrupt you. I

1 just want to make sure you are going to be testifying
2 about what the patent -- I'm sorry -- what the prior art
3 reference discloses concerning analogic input, right?

4 A I think I'm going to attempt to answer that, yes.

5 Q And you are looking at --

6 A Column 2 starting on Line 33.

7 Q Okay.

8 A "A digital analog converter, CA/D" which is the
9 block I am referring to, "for storing directly from
10 audio analog sources vinyl records, tapes, radio, live
11 and also receiving signals from the virtual disc."

12 So referencing your earlier question, you talked
13 about outside sources. It may be that you were thinking
14 perhaps of things like tapes, radio, live, and I was
15 thinking of vinyl records as being possible inputs to
16 that. So this converter can be connected to any of
17 these -- using your term -- outside sources. But
18 specifically I want to point out that vinyl records are
19 among those.

20 Q Okay. So vinyl records would be -- well, first
21 of all, all of those items are analog, correct?

22 A All those in that list, yes.

23 Q And a record player outputs in analog, correct?

24 A Yes.

25 Q Okay. So even if you were looking at a record

1 player you would say that the analogic input is to
2 receive a record player, or it could be a microphone or
3 a tape player.

4 A A radio, yes.

5 Q Right. Okay. Is UM a storage unit?

6 A UM is Figure 1. As I recall, that is the case.

7 Q And the storage unit UM stores audio that may be
8 played back at a later time, correct?

9 A Yes.

10 Q The storage unit UM is connected to the central
11 processing unit EC, correct?

12 A Yes. And if I can just make a comment here, just
13 to emphasize the point that I was attempting to make
14 earlier.

15 Q Hold on a second. You will have opportunity to
16 emphasize opinions as they come.

17 A All right. So I'm sorry. Please ask the
18 question again.

19 Q Okay. I think my question was the storage unit
20 UM is connected to the central processing unit EC,
21 correct?

22 A Yes.

23 Q Is RD/A a playing unit?

24 A RD/A is -- that refers to a digital to analog
25 converter. And as the Cortellesi teaches, it has both

1 an audio output, left and right, and also a digital
2 output. So because it produces an audio output, I think
3 that's what you are referring to when you talk about it
4 being a playing unit.

5 Q If you turn to Column 2, Line 50, do you see that
6 it says a playing unit, RD/A?

7 A Yes.

8 Q So RD/A is referred to in Cortellesi as a playing
9 unit, correct?

10 A Yes. I will talk about what it does.

11 MR. NORMAN: Wait.

12 MR. SMITH: You can't interrupt him.

13 MR. NORMAN: When I ask him what it does --

14 THE WITNESS: I'm going to tell you what it does.

15 MR. SMITH: Sorry, you can't interrupt and shape
16 his answer.

17 MR. NORMAN: He is supposed to answer the
18 question.

19 MR. SMITH: He is answering the questions. He
20 can expound on an answer to a question the way he sees
21 fit.

22 THE REPORTER: Gentlemen, one at a time.

23 THE WITNESS: I will let you ask your question.

24 BY MR. NORMAN:

25 Q Thank you. The playing unit RD/A takes data from

1 the central processing unit EC and generates an output
2 signal that may be analog or digital, right?

3 A The way it does what you just asked about --

4 Q First of all, you can expand but --

5 THE REPORTER: Gentlemen, you must speak one at a
6 time.

7 THE WITNESS: Receives data from the central
8 processing unit and decodes the same from digital to
9 analog form. So it's receiving in digital form. And
10 the function in part, at least of the RD/A, is to
11 produce an analog form so as to provide at its output
12 stereo audio signals. So the thing I was going to
13 mention previously is the point that it receives digital
14 and converts digital to analog.

15 BY MR. NORMAN:

16 Q That was a nice little speech, but you didn't
17 answer my question. So I'll ask the question again.

18 A I'm sorry.

19 Q The playing unit, RD/A, takes data from the
20 central processing unit EC and generates an output
21 signal that may be analog or digital, right?

22 A Yes.

23 Q If the output signal is analog, then the output
24 signal is outputted to left and right speakers, right?

25 A Yes.

1 Q If the output signal is digital, then the output
2 signal is exported in S/PDIF format, right?

3 A Yes.

4 Q Does the box marked MA represent knobs or other
5 manual controls?

6 A Yes.

7 Q The box MA is connected to the central processing
8 unit EC and may be used to select and control a piece of
9 music, right?

10 A Yes.

11 Q Or it can be used for scratching, right?

12 A Yes.

13 Q What is scratching?

14 A Not being a disc jockey, being an engineer, I
15 believe it's when it goes (indicating) and manipulates
16 the records for some artistic purpose.

17 MR. NORMAN: Court reporter's got that down?
18 That's where a video deposition is a little more helpful
19 for that.

20 BY MR. NORMAN:

21 Q Is DV a display?

22 A Yes.

23 Q The display DV is used to display the operations
24 of the apparatus and information about the song that is
25 playing, right?

1 A Yes.

2 Q Is TC a control keyboard?

3 A Yes.

4 Q The control keyboard TC is used to control the
5 selection and playing of music, right?

6 A Yes.

7 Q The box marked CD is a CD player, right?

8 A Compact disc, correct.

9 Q Compact disc player, right?

10 A Yes.

11 Q And the CD player connects to the central
12 processing unit EC and allows for music from CDs to be
13 downloaded to the storage unit, UM, for later playback,
14 right?

15 A Yes.

16 Q Figure 1 of Cortellesi also discloses several
17 interfaces to outside units, right?

18 A Yes.

19 Q USB, for example, allows the apparatus to be
20 connected to a personal computer, right?

21 A Personal computer equipped with a USB port, yes.

22 Q Thank you for that clarification. ITV is an
23 audio/video/T.V. interface that allows the apparatus to
24 be connected to a television set, right?

25 A Yes.

1 Q IDA is a reception transmission data interface
2 that allows the apparatus to be updated via telephone
3 and/or analog or digital communication lines, right?

4 A Yes.

5 Q ITA is a digital interface for pocket cartridges
6 that allows pieces of music to be recorded in addition
7 modules such as a Walkman?

8 A Yes.

9 MR. NORMAN: Court Reporter, Walkman, that is
10 with a capital W like a Sony Walkman.

11 BY MR. NORMAN:

12 Q INF is an infrared device that allows a
13 remote-controlled unit to be used to control the
14 apparatus, right?

15 A Yes.

16 Q ISAT is a satellite interface that allows the
17 apparatus to be updated via satellite and also allows
18 for the transmission of new pieces of music via
19 satellite, right?

20 A Yes.

21 Q Cortellesi does not disclose that the items of
22 Figure 1 are in a single housing, right?

23 A What Cortellesi talks about is he has created a
24 portable apparatus that can be taken, for example, to a
25 gig, some party, something like that. And it's --

1 portable and convenient are operational points that he
2 makes.

3 That said, this is where a person of ordinary
4 skill would have to read this and say it would be
5 obvious to include such. But the fact is, setting aside
6 what would be obvious, not just to a person of ordinary
7 skill but I think to any breathing human. Cortellesi
8 does not say all of these gadgets fit inside that box.

9 Q Thank you. Please turn to Figure 2 of
10 Cortellesi. I'm sorry. You can turn to Paragraph -- I
11 mean Figure 2 of Cortellesi. But I will also direct you
12 to the paragraph beginning at Column 4, Line 27. And
13 that paragraph indicates that Figure 2 is different from
14 Figure 1 by the presence of a virtual disc and a
15 directional sensor of magnetic flux connected to an
16 analog digital converter that allows a D.J. to act
17 manually as to the rhythmic synchronization of the
18 records played in succession, right?

19 A Yes.

20 Q In Figure 2 two of Cortellesi the virtual disc is
21 shown by element VD, correct?

22 A Yes.

23 Q Figure 2 of Cortellesi, SD, is a directional
24 sensor of magnetic flux, correct?

25 A Yes.

1 Q The directional sensor of magnetic flux, SD, and
2 the virtual disc, VD, provide analog position and speed
3 information of the virtual disc to the analog to digital
4 converter CD/A, right?

5 A CA/D.

6 Q I apologize. CA/D.

7 A Yes.

8 Q Thank you for that correction. You are paying
9 attention.

10 A We all are.

11 Q In that case, the output from the analog to
12 digital converter is digital position and speed
13 information of the virtual disc, right?

14 A When it is collecting that information that way,
15 yes.

16 Q Right. When it is generating information from
17 the virtual disc, right?

18 A Yes.

19 Q The digitized position and speed information is
20 then fed into the central processing unit EC, right?

21 A Yes.

22 Q The central processing unit EC correlates the
23 digital position and speed information with music that
24 is played from the storage unit, UM, to allow control of
25 the playback of the music from storage unit UF, right?

1 A Yes. It's used that way.

2 Q The signal output from the SD is an analog
3 signal, right?

4 A I'm sorry. Oh, SD, yes.

5 Q Thank you. I will say it one more time so it is
6 a little cleaner. The signal output from the SD is an
7 analog signal, correct?

8 A Yes.

9 Q The analog signal generated by the SD gives only
10 the position and speed of the virtual disc, right?

11 A Yes. Coming from the SD, that is correct.

12 Q No music is stored on the virtual disc, right?

13 A No.

14 Q No meaning yes? I mean --

15 A I understand the difficulty. No music is stored
16 on the virtual disc.

17 Q I'll ask it one more time to make sure we have
18 got it. No music is stored on the virtual disc; is that
19 a correct statement?

20 A That is correct.

21 Q Cortellesi does not disclose that music or any
22 recording is on the virtual disc, right?

23 A That is correct.

24 Q Please turn to Cortellesi, Column 4, Line 25. So
25 you see the word "common record player," right?

1 A Yes.

2 Q So I grew up in the '60s, '70s, '80s. Can you
3 describe a common record player in that timeframe?

4 A So I'm going to first start with the portrayal
5 there in Cortellesi where he has in his Figure 4
6 something that is not quite a common record player. But
7 it has a platter. It has a tonearm. It has a
8 cartridge. You put records arm, and the tonearm
9 traverses the record and makes music.

10 The distinction from a common record player in
11 Figure 4 is the presence in his figure of this sensor
12 SD. But have I sufficiently answered the question?

13 Q Okay. First of all, I guess my first point is in
14 Column 4, Line 25, that statement where it says
15 turntable of a common record player, that is actually
16 being referenced in connection with Figure 1, right?

17 A Uh-huh. Let's see. The reason why I am hedging
18 here is Figure 2 is the one that has the virtual disc
19 connected, not Figure 1.

20 Q Right. But even virtual disc was identified in
21 the specification even before -- even before Column 4,
22 Line 25.

23 A I haven't checked, but that certainly would not
24 surprise me.

25 (Court reporter clarification.)

1 Q I'll direct you to first Column 1, Line 41.

2 THE REPORTER: Is our technical person here? I
3 need to go off the record for a moment.

4 (Off the record from 10:16 a.m.
5 to 10:28 a.m.)

6 BY MR. NORMAN:

7 Q If you turn to Column 2, Line 36. You also see
8 an example of virtual disc.

9 A Yes.

10 Q And the discussion of the virtual disc at Column
11 2, Line 37 is in connection with Figure 1, right?

12 A It appears so from the line, Line 12. It's
13 referring to Figure 1, even though the virtual disc
14 doesn't appear in Figure 1.

15 Q So it says -- the phrase -- this is the beginning
16 at Column -- I'm going to start over. Beginning at
17 Column 2, around Line 33, Cortellesi states "A digital
18 analog converter CA/D for storing directly from audio
19 analog sources, vinyl records, tapes, radio, live and
20 for receiving signals from a virtual disc, if any." Do
21 you see that?

22 A Yes. And I will just observe that it points out
23 that the analog could come from either of these sources
24 or it could come from the virtual disc. And it uses the
25 word "and" there, receiving signals from the virtual

1 disc.

2 Q Right. So what this disclosure is saying is that
3 the embodiment of Figure 1 could also employ a virtual
4 disc, correct?

5 A It's -- let me just point out one other thing
6 from that column, if I could. At Line 23 -- okay. Back
7 up further. Around Line 13 with reference to the block
8 diagram of Figure 1, which I believe is what you are
9 pointing out here, Line 22 says "According to a
10 preferred embodiment the apparatus of the invention
11 includes." So it may simply be that Figure 1 is not a
12 preferred embodiment. And it is maybe changing its
13 reference here. It is not clear to me.

14 Q And maybe it is a preferred embodiment, right.

15 A Well, the preferred embodiment includes -- you
16 know, he's pointing out that these are the preferred
17 embodiments. But, again, it is not clear to me that
18 Figure 1 is what he's referring to as the preferred
19 embodiment.

20 There is the two figures. One doesn't have a
21 virtual disc. That is Figure 1. Figure 2 does have the
22 virtual disc. And maybe that is what he is describing
23 is preferred embodiment. Perhaps that's what he's
24 referring to.

25 Q Or perhaps he is saying that a virtual disc, you

1 could have a virtual disc and plug it in via the
2 analogic input, right?

3 A That is within the realm of perhaps. The Figure
4 1 CA/D block clearly shows the LR inputs, so yeah, it's
5 a perhaps.

6 Q Again, from the -- I mean, getting back to Column
7 4, Line 25, when it is mentioning -- actually, I'll
8 start out that whole paragraph, beginning on Line 23,
9 Column 4.

10 Cortellesi states "In addition to the use of
11 knobs MA, which allow the scratching to be carried out,
12 the invention provides, as already mentioned, the use of
13 a virtual disc to be placed on the turntable of a common
14 record player. See Figures 3A and 3B." Did I read that
15 correctly?

16 A Yes.

17 Q All right. So in this context -- a common record
18 player is going to be just that, a common record player,
19 right?

20 A Except that he does teach that, that this common
21 record player can accommodate this virtual disc.

22 Q Right, because all that's needed for the virtual
23 disc to operate is you need an SD, and it needs
24 something to rotate the virtual disc, correct?

25 A Well, it's to accommodate the virtual disc it

1 needs to be the SD, and if it is a common record player
2 it will have something to rotate the disc.

3 Q But, I mean, in reality if it has an SD, and the
4 SD itself has the necessary cables or whatever output to
5 be able to connect to the analogic -- the analogic input
6 of Figure 1, then the only additional thing that one
7 would need is something to rotate or turn the virtual
8 disc, right?

9 A Additional -- in addition to the SD.

10 Q Correct.

11 A Yes.

12 Q I understand the question. Yes. All right. So
13 the only -- in the disclosure that is occurring -- or
14 the only thing that is being referenced in Column 4,
15 Line 25, is you are going to need something that rotates
16 the virtual disc.

17 A Well, yeah. He says the virtual disc to be
18 placed on the turntable of a common record player.

19 Q Right. And so a common record player -- like I
20 said, I grew up in the '60s '70s and '80s. Can you
21 describe a common record player in that timeframe?

22 A In that timeframe it had some kind of cabinet
23 containing the electronics. It had a platter. It had
24 some drive mechanism to spin the platter. It had a
25 tonearm which is on a pivot with a cartridge which

1 contained -- you could refer to it as a needle. We
2 always called it a needle in the '60s or the stylus.

3 It would have electronics to pre-amplify it and
4 amplify it. Then it would have the knobs to control
5 volume, balance, things like that.

6 Q And that would be -- and that common record
7 player would output in analog, right?

8 A In that era, yes. Yes.

9 Q And that was true of the common record player in
10 the '90s also, correct?

11 A I believe so, yes.

12 Q Getting back to Column 4, Line 25 of Cortellesi,
13 the discussion of common record player here, the common
14 record player that we just described from the '60s, '70s
15 and '80s would have fulfilled the requirements to
16 satisfy Cortellesi's objective in Column 4, Line 25,
17 right?

18 A His objective? Let me check what you mean by the
19 objective. You are referring to the use of a virtual
20 disc to be placed on the turntable of a common record
21 player?

22 Q Right, because the only thing that the record
23 player is needing to do under that scenario is rotate
24 the virtual disc, right?

25 A That's the purpose of the turntable part of the

1 common record player.

2 Q So a common record player of the '60s would have
3 satisfied that objective?

4 A It would have had a turnable platter.

5 Q So that is a yes?

6 A If that's the part that you are referring to,
7 yes. It has a turnable platter, a turntable.

8 Q All right. So in this section Cortellesi -- this
9 section being Column 4, Line 25, that area, Cortellesi
10 is saying one can place a virtual disc on a common
11 record player and use the common record player to turn
12 the virtual disc.

13 A Right. To physically turn.

14 Q Yeah. When the common record player is used in
15 this context with the virtual disc, the tonearm and
16 cartridge serve no purpose, correct?

17 A They are not used. Figure 4 from Cortellesi
18 teaches me that -- he is not suggesting moving them. He
19 his just suggesting we're using the SD sensor instead of
20 the tonearm to pick up the analog signal.

21 Q Turn to Column 4, Line 34. Do you see the word
22 "common" being used as an adjective to quote,
23 "long-playing vinyl record", end quote?

24 A Yes.

25 Q And that use of "common" just means the types of

1 vinyl LPs that have been around for decades, right?

2 A That's how I would understand it.

3 Q In that paragraph Cortellesi is describing
4 features of the virtual disc, right?

5 A Yes.

6 Q And in that paragraph that is in connection with
7 Figure 3, right?

8 A Yes.

9 Q Okay. So turning to the next sentence which
10 begins on Line 40, Cortellesi states quote, "The disc is
11 placed on the turntable of a common record player and
12 handled as a common long-playing record (LP) however,
13 without using any pickup arms." Did I read that
14 correctly?

15 A Yes.

16 Q The phrase "Common record player" used at 4/40 to
17 41 of Cortellesi is the same as common record player
18 used at 4/25, right?

19 A I'm sorry. Ask that again.

20 Q The phrase "Common record player" used at Column
21 4, Lines 40 to 41 of Cortellesi is the same as "Common
22 record player" used at Column 4, Line 25.

23 A Yes.

24 Q So are you familiar with disc jockeys?

25 A Only what I've seen in the occasional show.

1 Q Okay. So could you describe what capacity you
2 are familiar with disc jockeys?

3 A So my sense is they have music that they play.
4 They form a playlist. They try to spice that up by just
5 scratching, what we talked about before, and possibly
6 other effects.

7 Q Okay. I think you said earlier you have never
8 been a disc jockey, right?

9 A I've never been a disc jockey.

10 Q Have you ever worked professionally with disc
11 jockeys?

12 A No.

13 Q Is it your understanding that a typical disc
14 jockey works in diverse types of venues?

15 A In my mind they are all dark and smoky, but it
16 could be different venues.

17 Q I'll give you some examples. A disc jockey might
18 work in a backyard party.

19 A Yes.

20 Q A disc jockey might work at a beach party.

21 A Yes.

22 Q A disc jockey might work at a wedding venue,
23 right?

24 A Yes.

25 Q There is a -- there is no way we could list all

1 the different types of venues?

2 A Yes. So much for dark and smoky. Yes.

3 Q Well, they might work if it is dark and smoky,
4 right?

5 A Yes.

6 Q What types of equipment does a typical disc
7 jockey need to take to events?

8 A They will need players, as in phonographs. These
9 days they might just carry their music on a digital
10 device. They need amplifiers, speakers, and their
11 music. At this time they would have probably needed
12 their LPs or verging on having libraries of compact
13 discs as well.

14 Q Okay. So there may be some commonalities that
15 they are going to need. They are going to need some
16 type of a music library.

17 A Yes.

18 Q Regardless of the DJ they're going to need some
19 type of a music library, right?

20 A Something to play.

21 Q Could be all the music stored on a drive, right?

22 A Yes.

23 Q Stored in memory.

24 A Yes.

25 Q Or it could be -- it could be a big stack of LPs,

1 right?

2 A Yes.

3 Q The disc jockey -- depending on the venue,
4 though, will dictate what the disc jockey needs to take
5 to the venue, right?

6 A Yes.

7 Q If the -- if, for example, the venue is someone's
8 backyard, the disc jockey probably needs to assume that
9 there will not be any equipment at the venue, right?

10 A Yes.

11 Q And so in that scenario where the disc jockey
12 needs to bring all of the equipment, the disc jockey is
13 going to have the music library, right?

14 A Yes.

15 Q The disc jockey is going to need to take
16 speakers, right?

17 A Yes.

18 Q The disc jockey is going the need to take an
19 amplifier of some sort. The disc jockey is going to
20 have to take a microphone.

21 A Likely.

22 Q The disc jockey is going to have to take a mixer
23 of some sort?

24 A Possibly.

25 Q And of course all the table cables and stuff

1 necessary to connect all of the equipment, right?

2 A Yes.

3 Q But, again, it is going to vary with the venue.

4 A Yes.

5 Q At a venue for weddings, especially a venue that
6 is earmarked for weddings, they probably already have a
7 very good sound system, right?

8 A It could be the case.

9 Q As a matter of fact, a wedding venue might not
10 want the disc jockey to bring certain types of equipment
11 in, right?

12 A That could be the case.

13 Q They may not want the disc jockey to bring in all
14 the speakers if they have got a nice speaker system,
15 right?

16 A That could be the case.

17 Q But again, it is going to vary with the venue.
18 Now to combine -- given the fact that a disc jockey --
19 sometimes they need to take all of the equipment, and
20 sometimes won't need to take all of the equipment --
21 well, first of all, let's start there. Sometimes the
22 disc jockey might need to take all of his or her
23 equipment, and sometimes the disc jockey will only take
24 some of his or her equipment, right?

25 A Yes.

1 Q All right. Now the disc jockey is not going to
2 want to take more equipment to the venue than he needs,
3 he or she needs, correct?

4 A That would be reasonable.

5 Q To combine all of the components a DJ might need
6 in a single cabinet would be unwieldy, wouldn't it?

7 A I am not sure I -- I think I disagree with that,
8 actually. If it's all in a single cabinet, that would
9 be the most convenient way to have it, especially if
10 that single cabinet not only was your record player but
11 it also had a disc internal to it in which you have a
12 library saved and stored.

13 Q All right.

14 A As taught by Cortellesi.

15 Q So let's unpack that a little then. So we've
16 identified that the disc jockey might need to take
17 speakers, right?

18 A That could be the case. Yes.

19 Q Speakers are -- especially speakers that are
20 going to be necessary to handle the power and volume
21 that is going to be needed for a typical venue, wherever
22 the disc jockey is going to be. Those speakers are
23 bulky and heavy, right?

24 A Yes.

25 Q Separation of speakers is also very important to

1 sound quality, right?

2 A It can be in settings.

3 Q You are not going to want -- in a typical venue
4 where you've got more than three or four people, but
5 let's say you have got a venue with a venue big enough
6 for a disc jockey, and maybe you've got 50 people, 100
7 people, a thousand people, you are going to want lots of
8 speakers, right?

9 A That would be the case.

10 Q You are going to want lots of speakers that are
11 separated from one another. And by separated from one
12 another you want -- you want the speakers to be -- or
13 the disc jockey will want the speakers to be spread out
14 in the venue, right?

15 A That could be the case.

16 Q Or at least in a place where the music will be
17 getting to the all the venues, right?

18 A Insofar as possible.

19 Q So combining speakers that are all in one unit
20 would detract from the quality of the performance or the
21 quality of the -- I don't know what you call it, whether
22 it is performance or whatever the DJ calls it.

23 A When I was referring to combining, I was
24 referring to the teachings of Cortellesi. I will just,
25 if I can, read a little bit from Column 1, talking about

1 having a lot of records and the inconvenience of all
2 that.

3 "In order to meet such requirements the disc
4 jockey should resort to expensive, sophisticated
5 cumbersome apparatus including a jukebox with large
6 playing capacity that does not allow the personalized
7 handling of pieces of music."

8 So we're not talking about putting the
9 speakers -- that's a matter of physics that you need to
10 have the speakers placed far enough apart. But if it is
11 a matter of I am going to bring a record player and I am
12 going to bring some external electronics that I plug
13 into it versus -- and by that I don't mean speakers --
14 versus I have got the ability in this record player to
15 record onto a hard drive so my library is present with
16 my phono player, that is very different from the
17 hypothetical you proposed having speakers separated.

18 Q Okay. In addition to separation, you know, from
19 a sound standpoint of speakers, all of this equipment
20 that a DJ might need is very heavy, isn't it?

21 A It is going to depend. A record player is not
22 very heavy.

23 Q Let's look at all of the equipment that DJ might
24 take.

25 A Collectively?

1 Q Collectively. So a DJ might need to take
2 speakers, right?

3 A Could be the case. Yes.

4 Q Okay. A DJ will need to have an amplifier,
5 right?

6 A Could be the case.

7 Q Could be the case. I mean, that is right. All
8 of these are not really necessary. It is going to
9 depend on the venue, again. So the DJ might need an
10 amplifier, right?

11 A Yes.

12 Q And an amplifier -- how heavy is an amplifier?

13 A That is going to depend. A linear amplifier can
14 have a lot of metal in it.

15 Q Right. So an amplifier will depend on what you
16 are trying to do, right?

17 A And the nature of the amplifier.

18 Q That's right.

19 A Class A, Class B, Class C.

20 Q My point is you have some amplifiers that --
21 look, you might have an amplifier in one room, and that
22 amplifier might weigh just a couple of pounds, right?

23 A Yes. Yes.

24 Q And an amplifier that weighs just a couple of
25 pounds, though, is probably not going to produce much

1 output, right?

2 A What you are suggesting is that would be
3 insufficient for a large venue.

4 Q Right.

5 A That could be the case.

6 Q Okay. And so for a large venue, a large venue
7 requires lots of power, right?

8 A That could be the case.

9 Q Unless, of course, the power is already there
10 because an amplifier is already at the venue.

11 A Exactly.

12 Q Then they wouldn't need to take that. Combining
13 multiple components into a single cabinet increases the
14 weight of the single unit.

15 A I disagree with the -- with what you are saying
16 here. And let me explain why. A record player and
17 hypothetical external components such as those shown in
18 Figure 1 or Figure 2 of Cortellesi, if I want that
19 capability and it's not in a single unit, I would need
20 to have both the mass of the record player and the mass
21 of the electronics and its enclosure, the plastic box,
22 whatever it's in.

23 Whereas if I were wiser and I wanted to make it a
24 more popular product as a person of ordinary skill, I
25 would say, oh, I'm just going to put this in the

1 phonograph. I don't have the weight of the housing and
2 enclosure and all that, it is all in the box I am
3 already taking. It is actually going to weigh less, I
4 would think.

5 Q So you are saying it may collectively may weigh
6 less.

7 A Uh-huh.

8 Q But it still might be too heavy for a single
9 person to carry, right?

10 A A phonograph --

11 Q I'm not saying a phonograph. I am talking about
12 multiple components.

13 A Yes. But since we are talking about a
14 phonograph, particularly in the case of Cortellesi, I
15 don't know if you remember hefting one. My mother could
16 lift a phonograph. Not very heavy.

17 The electronics described in Figures 1 and Figure
18 2 of Cortellesi, electronics being what it is, probably
19 not much more than a pound. So you are not going to
20 increase the weight of a phonograph. But you will
21 increase the clumsiness, make it easier to -- just
22 easier to manipulate, one thing to carry instead of two.

23 Q My question is, though, just as to portability in
24 general, not asserting any record player of any type.

25 A Okay.

1 Q So my point is sometimes combining components
2 makes the -- into a single unit would make the unit too
3 heavy to carry, right?

4 A If you are talking Humvee's I actually agree with
5 you. If you are talking a phonograph and accompanying
6 electronics, if we could package those together -- if I
7 can give you an example.

8 We used to have computers and we had all kinds of
9 stuff that we plugged into it. And we increased the
10 weight of our computers by putting our sound cards in,
11 our video cards in, our microphones. Maybe a laptop is
12 six ounces heavier than it would have been without that,
13 but the convenience and the savings in weight by not
14 having to have all of this external stuff, not having to
15 have all of the cables is -- for electronic things
16 generally, integration has been a trend for the last --
17 forever but certainly over the last 30, 40 years.

18 Q Let's talk just in general. So have you ever
19 gone to Home Depot or something like a Home Depot?
20 Doesn't have to be a Home Depot. Have you ever gone to
21 a place like Home Depot and somehow got into your car
22 with some big package that was too heavy for you to
23 carry? Has that ever happened?

24 A We bought some rocks, landscape supply things.
25 They were heavy enough that it took two of us to carry.

1 Q How about something that is in a box?

2 A In a box or a bag, a sack that's heavy?

3 Q I will just say it this way. And I think this is
4 probably fairly common. You tell me if you have ever
5 heard of something like this or it seems reasonable at
6 least.

7 So I have gotten boxes filled with equipment that
8 was too heavy for me to carry by myself. Does that
9 sound reasonable to you right there?

10 A I could see that that would happen, but it makes
11 me wonder if they were boxes of electronic equipment.

12 Q So hold on a second. So what I had to do,
13 because I was alone, I would have to unpack the box.

14 A Did you keep the cables connected when you did
15 this?

16 Q I had to unpack the box so that I could take some
17 of the pieces out. And then this was something that was
18 disassembled that would need to be assembled. But it
19 was disassembled in the box. I had to take it out of
20 the box so that I could carry pieces to where it needed
21 to go. Does that sound like an unusual scenario to you?

22 A It could happen. But in the context I am
23 thinking I just have to ask, was it in one place as a
24 functional unit? When you took them out did you have to
25 have cables connecting them in order to function as a

1 functional unit. It is a great hypothetical, but it
2 doesn't describe what Cortellesi is talking about.

3 Q But hold on. We're just talking principles.

4 A Okay.

5 Q You said that portability means that you can
6 combine everything in one unit. It increases
7 portability. That's what you testified to, right?

8 A I was referring to what Cortellesi was teaching
9 when he described why he wants to do what he was doing.

10 Q Cortellesi, when he is describing what he is
11 wanting to do, would you read that, please?

12 A Okay. I am going to jump to Line 17, Column 1.
13 "The present invention aims at overcoming the problems
14 mentioned above," which we'll come back to "by providing
15 a cheap, reliable, portable electronic apparatus." So
16 it's not a box of rocks; it is an electronic apparatus.

17 Q Keep going.

18 A Using a dedicated hard disc wherever is possible
19 to store digitally several pieces of music and play them
20 without having the need for original music support or
21 records".

22 Q So what this paragraph is actually saying is they
23 wanted an invention that will reduce what the DJ has to
24 carry, right?

25 A That is part of what it's about. Certainly that

1 is the library, among other things.

2 Q Would you agree that there is nothing in -- okay.
3 First of all, it is pointing out in this section, this
4 section again is Column 1, Lines 18 to 23, right?

5 A Yes. That's what I just read.

6 Q All right. So this specifically says "Without
7 the need of having the original music support or
8 records." What it is saying is it is desirable -- the
9 purpose of this invention is to enable a DJ to go to a
10 venue without having to take all these heavy records,
11 right?

12 A That is -- he states in the very first paragraph,
13 let's be very clear about that, there is a problem --
14 I'm starting on Line 6 -- of having a lot of records
15 available as well as so called disc jockeys working in
16 discos, blah, blah, blah, "with the need of being always
17 ready to transmit pieces of music by request or jingles
18 without solution of continuity. So one of the primary
19 things is, yes, the records.

20 Having established that, one of the goals,
21 though, is to be electronic and portable. It would
22 certainly make sense to say if I could have it here and
23 fit my hard drive inside that so I am not carrying two
24 units, anybody could see that adding the weight of a
25 hard drive, two pounds at most even in those days, that

1 would not render the phonograph unit too heavy to carry.

2 Q What this is also saying is without the need of
3 even a record player. If you don't have a record -- if
4 you don't have the need for the records you don't have
5 the need for the record player, right?

6 A Ah-hah. But he is talking about the record
7 player. So you are talking another invention.

8 Q No. I'm talking here. I'm talking here. This
9 is the paragraph that you are relying on, right?

10 A Uh-huh.

11 Q And what I am saying is in this paragraph this is
12 suggesting that the DJ with the Cortellesi invention is
13 not going to need records and is not going to need a
14 record player, right?

15 A I'm afraid I am going to have to disagree again
16 because part of the Cortellesi invention is the virtual
17 disc with the SD sensor. So he's wanting that. He is
18 incorporating that in the record player, and he is
19 providing additional capability that he talks about
20 including the ability to record via analog to digital
21 converter. So this is his solution.

22 Q Okay. And so in this part Cortellesi is not
23 talking about virtual discs, right?

24 A Well, this is the introduction to where he is
25 going with discs.

1 Q Well, the introduction here doesn't mention
2 virtual discs. And it doesn't mention that you would
3 want to combine a record player in anything.

4 A So you graciously pointed out to me that here in
5 Column 1 he does talk about the virtual disc, Line 39.
6 According to another peculiar characteristic the
7 apparatus further -- so I've got my record player. I've
8 got my recording stuff -- further includes that virtual
9 disc which as you pointed out or had me agree with, it's
10 got that platter that can rotate. He wants the
11 phonograph, he wants the ability to record. And he is
12 saying, and here is the cool thing, we'll throw a
13 virtual disc in on this as well.

14 Q Okay. So if you look at Figure 2 of Cortellesi
15 it shows a virtual disc. It shows an SD, and it doesn't
16 show a turntable at all, right?

17 A Well, let's go back to the spec because there is
18 figures and then there is the spec. The block diagram
19 is different from the previous -- sorry, I'm on Column
20 4.

21 Q Line what?

22 A Yeah. Let me make sure I am reading the right
23 thing here so I don't lead us far astray.

24 Q The line number --

25 A About 27 is where I was going to start. That's

1 where I remembered it. Now let me see. That is -- if
2 that is relevant. Block diagram of Figure 2 which we
3 just referred to is different from the previous diagram
4 by the presence of the virtual disc which is converted
5 to the analog digital converter CA/D that allows a DJ to
6 manually, even in a digital context on the rhythmic
7 synchronization of the records played in succession. So
8 he is talking about records being played there.

9 Q Where is that you are referring?

10 A Column 4, starting at 27.

11 Q Okay. We already established virtual disc. You
12 think that the DJ is actually playing a record in what
13 is described in this paragraph?

14 A Well, he is synchronizing the music. So there is
15 a virtual -- okay. I need to make sure I am
16 understanding the question --

17 Q Let me see if I can help you.

18 A Yes.

19 Q So the virtual disc itself is to enable the --

20 A Effects.

21 Q The DJ to do a scratching effect, right?

22 A Uh-huh.

23 Q There is no music on the virtual disc. If the DJ
24 had a regular record player they could just do the
25 scratching with a regular record player and wouldn't

1 need a virtual disc, right?

2 A That would be the older technology.

3 Q Well, even with a -- so that would be the older
4 technology. So the whole purpose of the virtual disc is
5 so you don't have to take a record player there, right?

6 A Well, here is where I am confused, because I
7 think we agreed that the virtual disc needs the rotating
8 platter to be on. Hence I am trying to say, well he
9 doesn't want a record player with a virtual disc.
10 That's when he puts it on. And, in fact, he makes it
11 clear in his invention the virtual disc sits there, and
12 the tonearm is off to the side, and he is doing this but
13 you still have the ability of a record player.

14 Q That's not what he is saying. Here he is saying
15 you synchronize it with the recording --

16 A That is one way of operating it. But it is still
17 a record player because you have still got the virtual
18 disc on it.

19 Q No, no, no. I'm not talking about that. I am
20 talking about what you are synchronizing the virtual
21 disc to is not any record that is being played but
22 rather music that is stored in the memory and being
23 played, right?

24 A In that mode of operation yes, but again, it is
25 still a record player.

1 Q Whenever you are using the virtual disc?

2 A Yes, on that record player.

3 Q Right. So you could have a record player that --
4 so if a venue already has a record player because it is
5 say, it's a wedding venue so they already have a record
6 player, all the DJ is going to need is a virtual disc
7 and the SD, right?

8 A Virtual disc and the SD and all the electronics,
9 because he's got to be able to take the SD that goes
10 into that and pull it off and do the synchronization
11 that it talks about in Figure 2.

12 Q Here is my point. You look at Figure 2 -- that
13 is my point. All the DJ would need is that which is
14 shown in Figure 2 and would not need a record player
15 because -- would not need to take a record player to the
16 venue if the venue already has a record player, correct?

17 A And how is this SD -- it has to be in a
18 particular position. He describes very carefully, it's
19 12 millimeters above the platter and this and that. Can
20 you just pull PlattersRUs off the shelf of the wedding
21 venue and plop your SD on it?

22 Q You don't think that i=a person of ordinary skill
23 in the art -- you don't think it would be something in
24 which, okay, I have a device that can be -- where the SD
25 can be set on top of a platform.

1 A It is certainly not taught in Cortellesi, as I
2 understand.

3 Q Well, none of this is taught in Cortellesi,
4 right, except what is taught in Cortellesi is that you
5 can put the virtual disc on a common record player.

6 A Or to rephrase it, it has been put on a common
7 record player. He is not saying drop it on any record
8 player. It is put there. It is integral to that record
9 player.

10 Q It doesn't have to be integral, does it?

11 A He does say it is integral, as I recall.

12 Q In Figure 4. Only in Figure 4, right?

13 A Figure 4 doesn't have the word integral in it.

14 Q You say integral. Where does --

15 A Here is my report here. I thought I remembered
16 that word coming up. I am not finding where it says
17 integral.

18 Q Okay. But is it your understanding that Figure
19 4 -- okay. Even if it is integral, that's not the same
20 thing. So then you have a record player that has an
21 integral SD. And it still has -- it could still have an
22 analog output, right?

23 A Yes.

24 Q All right. So that would still serve the
25 purpose. Now you have a record player with an analog

1 output that has an SD on it. So it's your position
2 that -- okay. Well, if you want the -- if the DJ wants
3 to use the virtual disc, the disc jockey could take a
4 record player that has a built-in SD to take that to the
5 venue along with some unit that has the features of
6 Figure 1.

7 A Okay. So now you are talking two units.

8 Q Correct.

9 A And this is where it would be obvious to take
10 this other stuff you seem to be referring to and to say
11 I've got room in this cabinet. I am going to take my
12 phonograph that's got everything in it. That's what I
13 think would be the obvious embodiments.

14 Q So you are saying that -- and you are getting
15 that from -- I want to make sure. You are getting that
16 from Column 1, the paragraph beginning on Line 8, right?

17 A Well, that is teaching the purpose. So again, it
18 is portable. It is electronic. So I am getting that
19 because when I read this he talks about you've got a
20 cabinet. We've got a turntable. We're adding this
21 virtual disc functionality which is including the A to
22 D, the ability to record music on the UM.

23 And so reading this now through the eyes of a
24 person of ordinary skill I am saying if I had my library
25 of records that I want to digitize I could grab another

1 record player and plug that record player into
2 Cortellesi, because Cortellesi teaches about connecting
3 two external things.

4 But since I have this record player which is
5 providing in part a virtual disc capability it would be
6 obvious to include that capability and record from that
7 very record player.

8 Q Or if you have a record player that had the
9 virtual disc in it with an analog output, then the DJ --
10 and assuming that that record player had the capability
11 of both to play LPs and to play a virtual disc, you
12 could still plug that unit into the analogic input of
13 Figure 1 as a separate unit.

14 A When you say plug that unit in, I lost track.

15 Q We have a unit that you are saying, the unit that
16 you have identified is a record player with a tonearm,
17 but it also has an SD. And it has an analog output.

18 A Yes.

19 Q Right. Okay.

20 A And it has a UM as created in --

21 Q Hold on, hold on. It has analog output. Okay.
22 So if it has that, then this unit, this record player
23 has the ability to play a virtual disc and output an
24 analog signal, right?

25 A Yes.

1 Q It has the ability to play an LP, a vinyl LP, and
2 output an analog signal.

3 A Yes.

4 Q Right. And so if you had those all in one unit
5 with the analog output, that unit could plug into the
6 analogic input of Figure 1, right?

7 A I want to be clear. So you've got a Figure 1
8 structure here, device, some box on the table. And you
9 have the unit you are describing here which has our VD
10 and our phono, and you are saying take this and plug it
11 into that?

12 Q Right.

13 A Yes, that could happen.

14 Q So if the DJ had that unit as two units, the DJ
15 could use the record player portion of it with the
16 tonearm, and download his entire library of LPs onto the
17 UM of Figure 1, right?

18 A In the separate device here. That could be done.

19 Q Right. Okay. And if -- and sometimes -- so then
20 he has downloaded all the LPs. He doesn't need to take
21 the LPs to the venue?

22 A What does he need to take?

23 Q So what he needs to take really depends. What he
24 needs to take is really only going to be this unit with
25 the music in it, right?

1 A I'm going to disagree there.

2 Q Hold on a second. That's all he needs to take,
3 right?

4 A I am going to disagree there.

5 Q You are going to disagree. Okay. If he doesn't
6 want to use the virtual disc in that scenario, he
7 doesn't need to take the virtual disc, right?

8 A And now -- yes.

9 Q He won't need to take the unit that plays the
10 virtual disc or play the record at all, right? So
11 keeping these units separate gives the DV the
12 flexibility to take to the venue that which he's going
13 to need for the particular things he is trying to
14 accomplish, right?

15 A In that setting.

16 Q In that setting.

17 A But if you look at it now in the setting where he
18 has the virtual disc, and you've got the phono player,
19 the record player, and you've got this capability to do
20 the analog to digital and the storing, it would be
21 obvious to include that unit within the phone player so
22 that the disc jockey has -- you know, I have got my
23 record player. I have got my effects. I have got my
24 library in a portable electronic unit as he describes
25 here, cheap reliable, portable, electronic apparatus.

1 Q And that is not saying that you make the
2 combination, that you combined all of these different
3 things you are talking about, right?

4 A Now -- because I am talking about taking this and
5 putting it inside --

6 Q I know you are talking about that, but Cortellesi
7 isn't.

8 A And I'm saying it could be obvious to do that,
9 for the person with skill in the art.

10 Q That obviousness that you are talking about was
11 not coming from Cortellesi, right?

12 A It is coming from a person with ordinary skill in
13 the art seeing this and saying, yup, we can do that. We
14 can put these together.

15 Q So you are saying it is coming from a person with
16 the ordinary skill of the art.

17 MR. SMITH: Object to the form. Sorry.

18 THE WITNESS: It would be obvious to take this
19 and put it inside. That's what I'm saying.

20 BY MR. NORMAN:

21 Q What I am saying is that is not a suggestion in
22 Cortellesi itself.

23 MR. SMITH: Objection to form.

24 THE WITNESS: It's not in Cortellesi, but it
25 would be obvious, as I clearly tried to explain in my

1 report.

2 BY MR. NORMAN:

3 Q Okay. So it's not based on any suggestion by
4 Cortellesi.

5 MR. SMITH: Object to form.

6 THE WITNESS: I don't know that I could agree
7 with no suggestion. First of all, there is nothing in
8 Cortelessi that teaches away from this idea. And, in
9 fact, the idea that it talks about, portable electronic
10 getting back to carrying things, if I have my
11 phonograph, I have this nifty unit on top, it might
12 wobble and fall. Way easier to add six more ounces of
13 electronics and have one unit. So I think it is
14 suggested indirectly.

15 BY MR. NORMAN:

16 Q What language -- you are saying it is suggested
17 indirectly?

18 A Indirectly.

19 Q Oh, you are saying it is --

20 A Yeah. It is suggested by the idea that it is a
21 cheap, portable, electronic apparatus.

22 Q Okay. So you are saying the suggestion comes
23 from which language?

24 A So we just read that, Column 2, starting at
25 Line 17, "Present invention aims at overcoming the

1 problem by providing a cheap, reliable, portable
2 electronic apparatus."

3 Q Okay. That is the language that you are relying
4 on for this suggestion?

5 A That is Cortellesi right here. I can go to my
6 report. I have got a rather lengthy discussion about
7 motivations for obviousness. Would you like me turn to
8 that and read that?

9 Q No, no, no. I am not looking for the motivation.
10 I understand the motivations that you are saying. What
11 I want to see is what portions of Cortellesi you are
12 relying on for those motivations as opposed to saying
13 what a person having ordinary skill in the art
14 themselves would somehow come up with.

15 A Let me see if I am forgetting anything. Okay.
16 So there is...

17 (Court reporter clarification.)

18 A So we talked having a virtual disc. So when you
19 have the virtual disc you have a phonograph player. So
20 we're not talking about a separate unit that doesn't
21 include that. Cortellesi talks about recording output
22 of record players in general, talks about recording
23 vinyl records.

24 So here is -- here is the step towards
25 obviousness. I have the ability to record record

1 players. I have a record player because I have the
2 ability to do the virtual disc interaction here. So it
3 would be obvious to be able to record this record
4 player.

5 So to me that just speaks to well, yeah, we're
6 going to take this record player that we have got, a
7 virtual disc, and use this as the means to store my
8 library digitally, which is one of the motivating
9 forces.

10 So you put the whole thing together and you get
11 the image that I think a person of skill in the art
12 would understand. I have the ability to record records.
13 I could do external sources, but I have got a record
14 player, so I would naturally, obviously, record from
15 this record player.

16 Q I hear what you are saying, but what you are
17 saying is neither disclosed nor suggested by Cortellesi.

18 A Again, I think it's suggested by the fact that we
19 can record record players and we have a record player.

20 Q And that's it?

21 A I'm still looking to see if there is anything in
22 my report that we haven't already talked about. Okay.
23 Since you seem interested in this I am going to start
24 reading a little bit. "Four reasons. The record player
25 is a common record player with a platter, tonearm and

1 phono cartridge." So this suggests that it is going to
2 be used for playing records.

3 It would be obvious to play records using the
4 record player, Figure 4, to record the output digitally.
5 Why, so that a disc jockey could avoid carrying a large
6 collection of record to a venue. And it would be
7 obvious to play the records to be able to do things as a
8 disc jockey.

9 And furthermore, if we think about the role of a
10 disc jockey, and this is kind of alluded to here at the
11 end of that first paragraph, what about the disc jockey
12 that has someone show up and say I have got a great new
13 record here, can you play this, they refer to this as
14 music without request or jingles without solution.

15 So he is talking about a situation where even if
16 I have got the music recorded I don't want to
17 completely, you know, throw all of that old capability
18 away. I want the ability still to be able to play
19 records and, while I am at it, do the virtual disc stuff
20 too.

21 Q You are saying Cortellesi is saying that you
22 would want to give the DJ the option -- the ability to
23 play records that attendants at the venue will give
24 them?

25 A I will just read it again what it says. Music by

1 request.

2 Q Right.

3 A I am not a clubber, but I can -- could conceive
4 of where it is a big music party, and people bring their
5 music, dance music, whatever, hey, let's do this, hands
6 him a record. Oh, sorry, I can't play that because I
7 have got everything, you know --

8 Q You have never seen a DJ do that, right?

9 A No. I haven't.

10 Q Okay. Do you think a DJ might be concerned if
11 he's got his expensive equipment that he doesn't know or
12 may not trust this record that somebody else might have?
13 Do you think that is a possibility?

14 A Boy, that seems remote.

15 Q You think that is remote, yet you are not
16 familiar with DJs or how they operate?

17 A No.

18 Q Okay.

19 A But I am -- again, Cortellesi suggests music by
20 request.

21 Q What a DJ wants to have is a big library, right?

22 A That would certainly be part of what they want to
23 have.

24 Q Well, a DJ wants a big library so that the
25 chances are whatever anybody requests he is going to

1 have, right?

2 A That would be so nice. But again, I imagine a
3 music party where I have got a lot. Hey, if you've got
4 your own, bring it. There have been a lot of
5 hypotheticals flying around today. That certainly seems
6 reasonable as anything else.

7 Q Where does Cortellesi say we want the ability to
8 play music by request from an LP source of somebody
9 coming to the venue?

10 A It doesn't say it that way. He just -- it's in
11 the paragraph, though, where he is talking about playing
12 records. So the paragraph starts off with playing the
13 records and ends up with music by request. It is hard
14 not to make a connection there.

15 Q That is --

16 A Line 1, Column 1.

17 Q Line -- I'm sorry.

18 A Line 1.

19 Q Column 1, Line 1?

20 A The present invention relates to the professional
21 playing of records in various settings.

22 Q Right. I mean, so I mean, the times I have
23 been -- and I have been to many, many, many settings
24 where you have a DJ there. And DJs commonly take
25 requests. I don't think I have ever been to one of

1 these in which the DJ didn't take requests. Does that
2 make sense to you?

3 A Yes. All I am saying is I am interpreting his
4 language.

5 Q Right. But his language is a DJ takes requests.
6 And that's what I think everybody who's ever been to a
7 venue understands. A DJ takes requests just like DJs
8 always do. So before the invention of Cortellesi a DJ
9 would take a request. In order for him to take a
10 request he had to have a huge library, which is a lot to
11 be taking to the venue, right?

12 But because he has the ability to download, you
13 know, whatever, sky is the limit, thousands of LPs,
14 he -- the DJ is now going to have the ability to play
15 anything that's requested. Or --

16 A Up to a point.

17 Q A DJ is not going to want to play something that,
18 you know, people of a particular venue is not going to
19 want to play. Just because someone makes request, for
20 example, if there this is a kids' party they may not
21 want a request where Lawrence Welk is playing, right?

22 A Or AC/DC.

23 Q They may want AC/DC.

24 A Depending on the age.

25 Q Young kids still like AC/DC, to my understanding.

1 THE REPORTER: A break when you gentlemen get a
2 good stopping point.

3 (Off the record from 11:34 a.m.
4 to 12:03 p.m.)

5 BY MR. NORMAN:

6 Q Dr. Moon, everything done with a virtual disc
7 could be accomplished with the knob of Figure 1, right?

8 A I'm just thinking about literally what he
9 teaches. There are knobs. He talks about things you
10 can do with it. But he does teach having the virtual
11 disc, so he must have some purpose for that disc.

12 Q Okay. If you turn the Column 4, Line -- the
13 first sentence beginning on Line 23. Starts with "In
14 addition." It says "In addition to the use of the
15 knob's MA, which allows the scratching to be carried
16 out." So the knobs can be used -- Cortellesi discloses
17 that the knobs can be used to carry out the scratching
18 effect, right?

19 A He does say that.

20 Q Okay. "So in addition to the use of knobs MA
21 which allow the scratching to be carried out, the
22 invention provides, as already mentioned, the use of a
23 virtual disc to be placed on the turntable of a common
24 record player," right?

25 A Yes.

1 Q Okay. And so Cortellesi discloses two different
2 things that could perform the scratching. One is going
3 to be the knobs that are disclosed in Figure 1, right?

4 A Uh-huh.

5 Q And the second is going to be a virtual disc,
6 right?

7 A Yes.

8 Q And -- but with the virtual disc, the DJ is able
9 to give the impression that an LP is actually being
10 played on the record because you see him physically
11 moving a record back and forth to perform the
12 scratching, right?

13 A I believe that could be the case.

14 Q Okay. So the -- so although the embodiment of
15 Figure 1 can perform scratching, there is still
16 something that the DJ will want to give the impression
17 that he has got a bigger setup than he really does have,
18 right?

19 A That could be the case.

20 Q And so because we're talking about a DJ that's
21 going to want to give a false impression that he's got a
22 big setup, that would also suggest not putting all this
23 in a single component, right?

24 A You are suggesting window dressing is what the
25 effect he might be going for in some sense?

1 Q That's what the virtual disc is for, right, to
2 provide window dressing.

3 A Well, that's what you are suggesting. Who knows
4 what might to be the reason for a disc jockey doing
5 that.

6 Q Is there anything that the virtual disc does that
7 knobs cannot do?

8 A It may be -- and again, I am not a disc jockey.
9 I have been asked to opine about the content of the
10 patent and prior art. So I am speculating here.

11 Q Let me ask a different question. I will withdraw
12 that question. I'll ask you a different question. Is
13 there anything disclosed in Cortellesi that the virtual
14 disc can do that the knobs cannot do?

15 A I'm not aware of anything.

16 Q Please turn to Figure 4 of Cortellesi. Again, we
17 are at Exhibit 1004. Cortellesi says "Figure 1 is a top
18 plan view of a first embodiment of the apparatus
19 provided with a record player carrying a virtual disc
20 provided with a reading sensor," correct?

21 A Yes. And can you please tell me where you are
22 reading that from?

23 Q I'm sorry. That is Column 2, Lines 8 through 10.

24 A Thank you. And I have Figure 4.

25 Q Okay. It's your position that the apparatus

1 referenced there is the apparatus of Figure 1, right?

2 A It's my position that it would be obvious to take
3 the circuitry portrayed in Figure 1 and put that inside
4 this cabinet containing the platter and phonograph and
5 all that.

6 Q Does Figure 1 of Cortellesi show a display?

7 A No. Well, okay, actually, looking at this there
8 is a row of something across the top of that. Those
9 could be little icon buttons, something like that. They
10 may have some element of display. So --

11 Q Those little buttons aren't identified as being a
12 display anywhere in the specifications?

13 A They are not identified.

14 Q Does Figure 4 of Cortellesi show a keyboard?

15 A It does not.

16 Q Does Figure 4 of Cortellesi show knobs that may
17 be used for scratching?

18 A No. Other than the virtual disc, as we talked
19 about.

20 Q Does Figure 4 of Cortellesi show a CD player?

21 A Not on the top of the cabinet. No.

22 Q Does Figure 4 of Cortellesi show an MP3 player?

23 A No. But again, that could be electronics
24 contained inside the box.

25 Q Figures 1 and/or 2 of Cortellesi disclose a

1 display, a keyboard, knobs, CD player and an MP3 player,
2 right?

3 A They show those boxes, yes, as being connected to
4 the EC.

5 Q There is nothing in Cortellesi that indicates a
6 display, keyboard, knobs, CD player, and an MP3 player
7 are present in that which is shown in Figure 4, right?

8 A Not in that which is shown.

9 Q Figure 4 doesn't show any of the components in
10 Figure 4, correct?

11 A Figure 1 shows electronic components or
12 connectors that in some cases could be inside, but they
13 are not portrayed in the drawing in Figure 4.

14 Q All that is shown in Figure 4 is a virtual disc
15 and an SD on a common record player, right?

16 A Yes.

17 Q At Column 2, Lines 25 to 32, does Cortellesi
18 state, "A central processing unit, EC, comprising a
19 microprocessor CPU processing and delivering data from
20 the several inside and/or outside units by digital
21 connections"?

22 A Yes.

23 Q And continuing on, does it say "The
24 microprocessor executes a program for processing the
25 digital information for the operation of the apparatus

1 by means of settings selected on the keyboard or
2 received from the various interfaces"?

3 A It says that.

4 Q Dr. Moon, I am handing you Exhibit 1005. Exhibit
5 1005 is U.S. Patent -- I'm sorry -- U.S. Patent
6 Application Publication 2004 008 9795 to Spencer,
7 correct?

8 A Yes.

9 Q And this you reference as Spencer?

10 A Yes.

11 Q So if I say Spencer, you will understand that to
12 be Exhibit 1005, correct?

13 A Yes.

14 Q Looking at Figure 1, reference number 100 is to
15 what Spencer calls a controller, correct?

16 A Yes, and then clarifies that it's -- what it
17 does. It's a phonograph.

18 Q So the controller 100 of Spencer is a turntable
19 unit, right?

20 A Yes.

21 Q That's what Spencer says in Paragraph 30?

22 A Yes.

23 Q In the Spencer publication, referenced 200 is to
24 a data processor unit, right?

25 A Yes.

1 Q In the Spencer publication, reference 104 is to
2 an analog audio port, right?

3 A Yes.

4 Q In the Spencer publication referenced 430 of
5 Figure 1 is to an external device, for example, a
6 speaker, right?

7 A Yes, and I believe all these reading -- Paragraph
8 30 you are reading from, is it not?

9 Q Not exactly reading from it, but it's Paragraph
10 30?

11 A Yeah. Yeah.

12 Q So the answer is yes?

13 A Yes.

14 Q The output from the turntable unit 100 to the
15 speaker is an analog output, right?

16 A Through the speaker that you just referenced as
17 No. 430, yes.

18 Q That means an analog recording on a vinyl record
19 played on the turntable 100 is output directly to --
20 directly an analog to the speaker.

21 A That's one way that the output is obtained, yes.

22 Q Okay. There's no indication that the analog
23 output on the turntable 100 was first converted from
24 analog to digital and then converted back from digital
25 to analog, correct?

1 A Not on 104.

2 Q Right. And now there is no disclosure of any
3 other speaker in Spencer, right?

4 A There is disclosure of a digital audio -- let me
5 get the words exactly the way they are -- digitized
6 audio, that's what I'm looking for -- communication of
7 digitized audio signals. That is in Spencer.

8 Q Right. My question, though, is there is no
9 disclosure of any other speaker in Spencer, right?

10 A Not that I recall.

11 Q There is no disclosure of any speaker connected
12 to the data processor unit 200, right?

13 A Not that I recall.

14 Q Okay. So turning to Spencer Paragraph 30, I
15 would say turning, but we've already been there, which
16 indicates that ports on the turntable unit --

17 A Can I modify my last response?

18 Q Okay.

19 A I thought I remembered this. In the lower part
20 of that Paragraph 30, I am on Line -- it's the last
21 third of the Paragraph 30.

22 Q Hold on a second. Okay. Which column?

23 A It is Column 2 -- Sorry. The right column.
24 Digital audio output port 207. Do you see where I am?
25 207 on the data processor unit 200 may be coupled to

1 corresponding ports on external output devices 420, such
2 as a speaker to output audio signals, synchronize with
3 an audio signal. So this does talk about other speakers
4 so that that modifies the response I gave earlier when I
5 said I didn't remember. I was like it seemed like there
6 was something.

7 Q Turning to Spencer Paragraph 30, like I said, it
8 indicates that ports on the turntable unit may be
9 coupled to corresponding ports of the data processor
10 unit 200 to, quote, "Communicate, digitize audio signals
11 and information useful in determining an intratrack
12 needle position from the controlling unit 100 to the
13 data processor unit 200." Did I read that correctly?

14 A Yes. Beginning at 30 there.

15 Q Yeah. Do you agree Spencer's digitized audio
16 signal is, quote, useful in determining an intratrack
17 needles position, end quote?

18 A Well, he teaches that this digitized audio and
19 information useful in determining intratrack needle. So
20 it's -- it's -- I guess it's interpretable. I see it as
21 we have digitized audio signals. That's one thing that
22 is being conveyed with this port. And we also have
23 information useful in determining an intratrack needle
24 position.

25 Q Or it could be saying that both of these --

1 A Or it could be that the digitized audio and this
2 other information are useful in determining intratrack
3 needle position. Either way you look at it we are
4 taught that digitized audio signals are being conveyed
5 to the processor unit 200 via this port 102.

6 Q Now Spencer does not disclose an analog digital
7 converter at all, right?

8 A What he discloses is that we have, in fact,
9 digitized audio signals. And so this is why a person of
10 ordinary skill in the art would say, well, there must be
11 some way of obtaining these digitized audio signals. So
12 coming from our phonograph there must be an A to D
13 converter. So the presence of an A to D converter is
14 suggested by the fact that digitized audio is
15 communicated about.

16 Q But the term converter doesn't occur in Spencer
17 at all, right?

18 A Not that I recall, and not in that context as I
19 recall.

20 Q Spencer does not disclose that turntable unit 100
21 includes a controller responsive to an analog to digital
22 converter for generating an output digital audio signal
23 of music or speech, right?

24 A So Spencer does not disclose that explicitly.
25 However, as I was talking about, it would be obvious

1 since we have the digitized audio, to have a way of
2 obtaining that. And you would need some way of doing
3 the analog to digital converter and then some way of
4 controlling that stream of digital information out to a
5 port. USB ports in particular have USB controllers.

6 So a person of ordinary skill recognizing this
7 would say, yeah, we need these things. It would be
8 obvious to include those things to achieve what Spencer
9 teaches.

10 Q Well, Spencer does not disclose that turntable
11 Unit 100 includes a controller responsive to an analog
12 to an analog to digital converter for generating an
13 output digital audio signal of music or speech
14 representative of an audio recording from an output of
15 the analog to digital converter representative of the
16 analog audio signal.

17 A Certainly not in those words. But again, we have
18 digitized audio which are being coupled via ports such
19 as USB. And the USB hardware has what they call a USB
20 controller built into it. So there is a need for an
21 analog to digital converter. There is a need for the
22 controller to operate the interface, what they talk
23 about there.

24 And so he doesn't use the word controller, but he
25 does say USB. USB contains as part of its structure

1 processing that allows it to do its job.

2 Q Dr. Moon, I am handing you Exhibit 1006 which is
3 United States Patent Application Publication 2003 020
4 6506 to Cohen, correct?

5 A Yes.

6 Q Please turn to Figure 1. And Figure 1 reference
7 14 is a turntable, right?

8 A Yes.

9 Q When I say turntable, it is a turntable -- that
10 is the term you use?

11 A As I understand, turntable -- the phonograph
12 turntable technical assembly and tonearm.

13 Q No digital data is output from Cohen's turntable,
14 correct?

15 A That is correct.

16 Q All of Cohen's items 16, 18, 20, 22, and 24 are
17 external to the turntable 14, right?

18 A By external they are shown as separate blocks
19 functionally connected. But they could be in the
20 cabinet that contains the turntable mechanism.

21 Q But that is not a disclosure of Cohen itself,
22 right?

23 A Cohen doesn't say all these things go in this
24 place. He is showing how they are connected.

25 Q The microprocessor for DSP block 20 of Cohen only

1 generated a MIDI output. For the court reporter,
2 capital M, capital I, capital D as in dog, capital I.

3 A I'm going to read the Paragraph 18 of Cohen in
4 answer to your question. "Additionally, microprocessor
5 or digital signal processor 20 can be configured to
6 recognize when a conventional analog record typically
7 including the musical or other audio performance and not
8 including any encoded media information is being played
9 by turntable 14." So I believe, if I am remembering
10 your question, my answer is no.

11 Q Well, but if it recognizes it's still outputting
12 in MIDI, right?

13 A If there is -- in the circumstances described in
14 Paragraph 18 there is no MIDI to output. It is
15 receiving the digitized audio and doing with it what it
16 does. It can produce -- have the digitized audio coming
17 in, and it can therefore put it out. Even though that's
18 not shown in the block diagram, we all know the block
19 diagrams among other things it does, does not portray
20 any single figure.

21 Q This is saying, though -- and as you see -- look
22 at the outputs in the microprocessor. The only outputs
23 that are shown are MIDI outputs.

24 A Those are MIDI outputs to portray the flow of
25 information in the case that the MIDI record, as I can

1 call it, is on the turntable.

2 But as Paragraph 18 teaches clearly, we can take
3 an analog record, run it through an A to D, run that
4 into and hence through a processor. That's how I
5 understand what 18 can teach us.

6 Q Right. But that's not -- but what 18 is not
7 saying is that the microprocessor generates anything
8 other than a MIDI output, right?

9 A It's showing in the block diagram, yeah. It is
10 showing in the MIDI outputs. But if it's got digitized
11 audio coming in and it has the ability to put outputs
12 out, there is nothing in Spencer that says we can't have
13 that. There is nothing that teaches away from the fact
14 that we could take the digital audio input in and run it
15 through the microprocessor and hence out.

16 Q So you would agree that Cohen is silent on the
17 microprocessor outputting anything other than MIDI,
18 right?

19 A Except what would be obvious to the person, which
20 is if I can put digital audio in, I can put digital
21 audio out. If I can put MIDI out to something I can put
22 digital audio out.

23 Q MIDI stands for musical instrument digital
24 interface, right?

25 A Yes.

1 Q Midi does not transmit recorded sound, right?

2 A Not usually, no.

3 Q Cohen's MIDI output is not a digital audio signal
4 of music or speech representative of an audio recording
5 from an output of an analog to digital converter
6 representative of the analog audio signal, right?

7 A That's a complicated question. That is to say
8 representative. You know, we've been thinking of
9 representative as the samples of digital audio. But I
10 do believe that MIDI can extract information such as
11 tempo or pitch. Tempo is representative of the audio.
12 Pitch is representative of the audio.

13 Q Right. But first of all, let's break it down.
14 MIDI, we've already said that MIDI does not transmit
15 recorded sound.

16 A It's not sending the sample data, yes.

17 Q Right. So the MIDI output is not a digital audio
18 signal of music, right?

19 A It is not -- no, but it can be representative of
20 digital audio music.

21 Q But it is not a digital audio signal of music,
22 right?

23 A No.

24 Q And MIDI is not a digital audio signal of speech,
25 right?

1 A Not speech.

2 Q And so it's not a digital -- so MIDI is not a
3 digital audio signal of music or speech representative
4 of an audio recording from an output of an analog to
5 digital converter, right?

6 A I kind of want to go back to what I said before.
7 But I understand we're trying to get the claim language
8 in there. And it is one element of claim. So I am
9 wanting to correct it now. Generating digital audio
10 signals of music or speech. Representing digital audio
11 signal to music or speech representative of an audio
12 recording.

13 So it is -- it is representative of an audio
14 recording which in turn -- the digital sample which is
15 in turn is representative of an analog audio signal. So
16 here is the complication. So if I have a bunch of
17 digital samples, it is a series of numbers, one after
18 the other, I cannot take a series of numbers and plug a
19 speaker into it and play it. I have to do some
20 conversion of that.

21 If I have a series of numbers which represents an
22 MP3 compressed audio file, I have to do more work to
23 convert it. But we would certainly say that it
24 represents digital audio. We would say that, in fact,
25 it is digital audio.

1 And so I am inclined to say that the MIDI can be
2 digital audio signal representative of an audio
3 recording. That said, if you are thinking in terms of
4 well, is it the actual A to D sample data, no. The MIDI
5 signal is not A to D sample data that we would be
6 conventionally thinking of.

7 Q You are saying that the digital -- I mean, you
8 are saying that MIDI can be representative of an audio
9 recording, but it is not a digital audio signal of music
10 or speech?

11 A It gets into the semantics here. When it gets to
12 the digital world, everything is a representation of
13 something else. So is it the actual sample per sample
14 representation of the sampled speech? No. It is
15 something else. But you can take that data. you can run
16 it into the appropriate converter and be able to produce
17 audio out.

18 MR. NORMAN: We'll have five minutes.

19 (Off the record from 12:37 p.m.
20 to 12:45 p.m.)

21 MR. NORMAN: Dr. Moon, no further questions.

22 MR. SMITH: I have no redirect.

23

24 (TIME NOTED: 12:45 p.m.)

25

1 I, the undersigned, a Certified Shorthand
2 Reporter of the State of California, do hereby
3 certify:

4 That the foregoing proceedings were taken
5 before me at the time and place herein set forth;
6 that any witnesses in the foregoing proceedings,
7 prior to testifying, were administered an oath; that
8 a record of the proceedings was made by me using
9 machine shorthand which was thereafter transcribed
10 under my direction; that the foregoing transcript is
11 a true record of the testimony given.

12 Further, that if the foregoing pertains to
13 the original transcript of a deposition in a Federal
14 Case, before completion of the proceedings, review
15 of the transcript [] was [] was not requested.

16 I further certify I am neither financially
17 interested in the action nor a relative or employee
18 of any attorney or any party to this action.

19 IN WITNESS WHEREOF, I have this date
20 subscribed my name.

21
22 Dated: October 26,



23
24 JOANNA BROADWELL

25 CSR No. 10959

Veritext Legal Solutions
1100 Superior Ave
Suite 1820
Cleveland, Ohio 44114
Phone: 216-523-1313

October 26, 2023

To: Mr. Smith

Case Name: Sony Group Corporation Et Al. v. Inmusic Brands, Inc.

Veritext Reference Number: 6161683

Witness: Todd Moon , PH.D. Deposition Date: 10/24/2023

Dear Sir/Madam:

Enclosed please find a deposition transcript. Please have the witness review the transcript and note any changes or corrections on the included errata sheet, indicating the page, line number, change, and the reason for the change. Have the witness' signature notarized and forward the completed page(s) back to us at the Production address shown above, or email to production-midwest@veritext.com.

If the errata is not returned within thirty days of your receipt of this letter, the reading and signing will be deemed waived.

Sincerely,
Production Department

NO NOTARY REQUIRED IN CA

DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 6161683

CASE NAME: Sony Group Corporation Et Al. v. Inmusic Brands, Inc.

DATE OF DEPOSITION: 10/24/2023

WITNESS' NAME: Todd Moon , PH.D.

In accordance with the Rules of Civil
Procedure, I have read the entire transcript of
my testimony or it has been read to me.

I have made no changes to the testimony
as transcribed by the court reporter.

Date Todd Moon , PH.D.

Sworn to and subscribed before me, a
Notary Public in and for the State and County,
the referenced witness did personally appear
and acknowledge that:

They have read the transcript;

They signed the foregoing Sworn
Statement; and

Their execution of this Statement is of
their free act and deed.

I have affixed my name and official seal

this _____ day of _____, 20____.

Notary Public

Commission Expiration Date

DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 6161683

CASE NAME: Sony Group Corporation Et Al. v. Inmusic Brands, Inc.

DATE OF DEPOSITION: 10/24/2023

WITNESS' NAME: Todd Moon , PH.D.

In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me.

I have listed my changes on the attached Errata Sheet, listing page and line numbers as well as the reason(s) for the change(s).

I request that these changes be entered as part of the record of my testimony.

I have executed the Errata Sheet, as well as this Certificate, and request and authorize that both be appended to the transcript of my testimony and be incorporated therein.

Date

Todd Moon , PH.D.

Sworn to and subscribed before me, a Notary Public in and for the State and County, the referenced witness did personally appear and acknowledge that:

They have read the transcript;

They have listed all of their corrections in the appended Errata Sheet;

They signed the foregoing Sworn Statement; and

Their execution of this Statement is of their free act and deed.

I have affixed my name and official seal this _____ day of _____, 20____.

Notary Public

Commission Expiration Date

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

ERRATA SHEET
VERITEXT LEGAL SOLUTIONS MIDWEST
ASSIGNMENT NO: 6161683

PAGE/LINE(S) / CHANGE /REASON

Date Todd Moon , PH.D.
SUBSCRIBED AND SWORN TO BEFORE ME THIS _____
DAY OF _____, 20_____ .

Notary Public

Commission Expiration Date

0	1004 17:12,14 17:16,20 75:17 1005 78:4,5,12 1006 84:2 102 82:5 104 79:1 80:1 10959 1:23 2:19 90:25 10:16 34:4 10:28 34:5 1100 91:1 11811 90:23 11:34 73:3 12 34:12 59:19 12:03 73:4 12:37 89:19 12:45 2:17 89:20,24 13 35:7 14 84:7,17 85:9 16 84:16 17 6:1 53:12 66:25 18 54:4 84:16 85:3,14 86:2,5 86:6 1820 91:2	59:11,12,14 66:24 75:23 76:25 77:17 80:23 20 84:16,25 85:5 92:16 93:22 94:22 200 78:23 80:12,25 81:10 81:13 82:5 20003 3:7 2003 84:3 2004 78:6 202 3:8 2023 1:15 2:17 5:1 7:14 90:22 91:4 202300294 1:6 2:6 7:11 207 80:24,25 21 7:19,22 216-523-1313 91:3 22 12:7 35:9 84:16 23 35:6 36:8 54:4 73:13 24 1:15 2:17 5:1 84:16 25 19:3 32:24 33:14,22 36:7 37:15 38:12,16 39:9 40:22 77:17	26 90:22 91:4 2600 3:6 27 30:12 56:25 57:10 3 3 40:7 30 51:17 78:21 79:8,10 80:14 80:20,21 81:7 81:14 314 3:16 32 77:17 33 15:17 19:3 22:24 23:6 34:17 34 39:21 36 34:7 37 34:11 39 56:5 3a 36:14 3b 36:14 4 4 30:12 32:24 33:5,11,14,21 36:7,9 37:14 38:12,16 39:9 39:17,21 40:21 40:22 56:20 57:10 60:12,12 60:13,19 69:4 73:12 75:16,24 76:14,16,20,22 77:7,9,10,13,14
0 17:13 00294 7:14 008 78:6 020 84:3	1 1 1:25 17:20,22 18:1 20:23,25 21:7 22:7 24:6 28:16 29:22 30:14 33:16,19 34:1,11,13,14 35:3,8,11,18,21 36:4 37:6 46:25 49:18 50:17 53:12 54:4 56:5 61:6 61:16 62:13 63:6,7,17 71:16,16,18,19 71:19 73:7 74:3,15 75:17 76:1,3,6,25 77:11 78:14 79:5 84:6,6 10 75:23 10/24/2023 91:8 92:3 93:3 100 46:6 78:14 78:18 79:14,19 79:23 81:12 82:20 83:11 1001 6:25 9:7 1002 7:5,14	2 2 19:1,3 22:24 23:6 25:5 30:9 30:11,13,20,23 33:18 34:7,11 34:17 35:21 49:18 50:18 56:14 57:2	

4/25 40:18 4/40 40:16 40 40:10,21 51:17 41 34:1 40:17 40:21 42 9:1 420 81:1 430 79:4,17 44114 91:2 498 6:10,13,18 7:15 9:6,8,20 10:20 11:3,10 11:22 12:5 13:10 18:21	69 15:16 7 7,567,498 6:8 6:14 7:1 700 3:6 70s 33:2 37:20 38:14 7th 3:14	absolutely 13:14 ac 72:22,23,25 accommodate 36:21,25 accompanying 51:5 accomplish 64:14 accomplished 73:7 accordance 92:5 93:5 achieve 83:8 acknowledge 13:9 92:11 93:16 acronym 13:22 act 30:16 92:14 93:20 action 90:17,18 acts 19:4 actual 89:4,13 actually 20:11 33:15 36:7 45:8 50:3 51:4 53:22 57:12 74:9 76:7 ad 20:11 add 66:12 adding 54:24 61:20 addition 29:6 36:10 37:9 47:18 73:14,14	73:20 additional 37:6 37:9 55:19 additionally 85:4 address 91:15 adjective 39:22 administered 5:5 90:7 affixed 92:15 93:21 afraid 55:15 age 72:24 agree 51:4 54:2 56:9 66:6 81:15 86:16 agreed 58:7 ah 55:6 aims 53:13 66:25 al 1:4 2:4 91:6 92:3 93:3 alan 3:13 5:10 alex 3:19 allow 31:24 36:11 47:6 73:21 allows 28:12,19 28:23 29:2,6 29:12,16,17 30:16 57:5 73:15 84:1 alluded 69:10 amplifier 43:19 48:4,10,12,12
5 5 4:7 50 25:5 46:6 505 3:14 54 17:20 55 17:20 552-6284 3:16 553 17:13	8 61:16 75:23 80s 33:2 37:20 38:15 9 90s 38:10 91 1:25 9795 78:6 999 17:13 9:20 2:16 5:2	a a.m. 2:16 5:2 34:4,5 73:3 ability 47:14 55:20 56:11 58:13 61:22 62:23 63:1 67:25 68:2,12 69:18,22 71:7 72:12,14 86:11 able 14:7 21:2 37:5 59:9 68:3 69:7,18 74:8 89:16 above 53:14 59:19 91:17	
6 6 18:2,4 54:14 60s 33:2 37:20 38:2,14 39:2 6161683 1:24 91:7 92:2 93:2 94:2 63101 3:15 6506 84:4 669-6207 3:8			

48:13,15,17,21 48:22,24 49:10 amplifiers 42:10 48:20 amplify 38:3,4 analog 9:17,21 9:22 10:1,4,5,8 11:16,22 19:14 19:17 20:6,15 20:19 23:8,10 23:21,23 24:24 26:2,9,11,14,21 26:23 29:3 30:16 31:2,3 31:11 32:2,7,9 34:18,19,23 38:7 39:20 55:20 57:5 60:22,25 62:9 62:17,21,24 63:2,5 64:20 79:2,15,18,20 79:22,24,25 82:6,21 83:3 83:11,12,15,16 83:21 85:6 86:3 87:5,6 88:4,15 analogic 19:18 20:7,23 21:6 21:19,21 22:12 22:15,21 23:3 24:1 36:2 37:5 37:5 62:12 63:6	analogous 15:20 16:8,9 17:1,10 analysis 14:17 anorman 3:17 answer 21:15 23:4 25:16,17 25:20 26:17 79:12 85:4,10 answered 33:12 answering 25:19 anybody 54:24 70:25 apart 47:10 apologize 31:6 apparatus 17:23 27:24 28:19,23 29:2 29:14,17,24 35:10 47:5 53:15,16 56:7 64:25 66:21 67:2 75:18,25 76:1 77:25 appeals 1:2 2:2 appear 34:14 92:11 93:15 appearances 3:1 appears 34:12 appended 93:11,18	appliance 8:9 9:3 application 17:13 78:6 84:3 apply 15:5 appropriate 14:6 89:16 area 39:9 argument 16:2 arguments 15:25 arm 33:8 arms 40:13 art 13:23,25 14:5,13,22 15:6,14,19,20 15:25 16:1,3,8 16:10,13,18,24 17:1,10 23:2 59:23 65:9,13 65:16 67:13 68:11 75:10 82:10 artistic 27:16 aside 30:5 asked 22:15 26:3 75:9 asking 10:24 12:17 assembled 52:18 assembly 84:12 asserting 50:24	assignment 92:2 93:2 94:2 assume 43:8 assuming 62:10 astray 56:23 attached 93:7 attainment 14:5 attempt 23:4 attempting 24:13 attendants 69:23 attention 31:9 attorney 90:18 audio 9:17,17 9:22 10:2,3,5 10:12,16 20:24 21:7,9,18,22,25 23:10 24:7 25:1,2 26:12 28:23 34:18 79:2 80:4,6,7 80:24 81:2,3 81:10,15,18,21 82:1,4,9,11,14 82:22 83:1,13 83:14,16,18 85:7,15,16 86:11,14,20,21 86:22 87:3,4,6 87:9,11,12,17 87:20,21,24 88:3,4,9,10,11 88:13,15,22,24
---	--	--	---

88:25 89:2,2,8 89:9,17 authorize 93:11 available 54:15 ave 91:1 avenue 3:6 avoid 69:5 aware 15:20 16:3,7,9,25 17:9 22:19,23 75:15	36:8 61:16 73:13 81:14 begins 7:22 40:10 behalf 2:15 believe 6:4 21:15 22:6 27:15 35:8 38:11 74:13 79:7 85:9 87:10 beyond 16:20 big 42:25 46:5 51:22 70:4,21 70:24 74:22 bigger 74:17 bit 46:25 68:24 blah 54:16,16 54:16 block 17:23 21:11 23:9 35:7 36:4 56:18 57:2 84:25 85:18,18 86:9 blocked 21:13 21:16 blocks 21:16 84:18 board 1:2 2:2 bottom 15:17 bought 51:24 box 12:25 18:5 19:12,20,20,22 19:23 20:9,17	21:11 27:4,7 28:7 30:8 49:21 50:2 52:1,2,13,16,19 52:20 53:16 63:8 76:24 boxes 52:7,11 77:3 boy 70:14 brands 1:7 2:7 91:6 92:3 93:3 break 73:1 87:13 breathing 30:7 briefly 8:5 bring 43:12 44:10,13 47:11 47:12 70:4 71:4 broadwell 1:22 2:18 90:24 built 61:4 83:20 bulky 45:23 bunch 88:16 bunched 20:1 burlingame 1:14 2:16 5:1 buttons 76:9,11	57:5 91:25 cabinet 9:13 11:16 12:7,8 37:22 45:6,8 45:10 49:13 61:11,20 76:4 76:21 84:20 cables 37:4 43:25 51:15 52:14,25 california 1:14 2:16 5:1 90:2 call 46:21 83:19 86:1 called 38:2 54:15 calling 13:1 calls 46:22 78:15 capability 49:19 55:19 62:5,6,10 64:19 69:17 capacity 41:1 47:6 capital 29:10 85:2,2,2,2 car 51:21 cards 51:10,11 careful 18:13 carefully 59:18 carried 36:11 73:15,21 carry 42:9 50:9 50:22 51:3,23
b			
b 48:19 back 6:24 20:2 24:8 35:6 36:6 38:12 53:14 56:17 66:10 74:11 79:24 88:6 91:15 background 14:6,9 backyard 41:18 43:8 bag 52:2 balance 38:5 baluch 3:4 bank 3:14 based 15:10 66:3 basis 15:9,23 15:24 beach 41:20 beginning 2:16 30:12 34:15,16			
		c	
		c 17:19 48:19 ca 19:12,14,17 20:7 22:13,14 23:8 31:5,6 34:18 36:4	

51:25 52:8,20 53:24 55:1 73:17 carrying 54:23 66:10 69:5 75:19 cartridge 9:16 9:23 21:17 22:3,4,7 33:8 37:25 39:16 69:1 cartridges 29:5 case 1:6 2:6 6:2 7:11 13:14 14:8 24:6 31:11 44:8,12 44:16 45:18 46:9,15 48:3,6 48:7 49:5,8 50:14 74:13,19 85:25 90:14 91:6 92:3 93:3 cases 77:12 cd 28:7,7,11 31:4 76:20 77:1,6 cds 28:12 center 3:14 central 18:8,9 18:11 19:1,8 19:18 20:8 24:10,20 26:1 26:7,20 27:7 28:11 31:20,22 77:18	certain 44:10 certainly 33:23 51:17 53:25 54:22 60:1 70:22 71:5 83:17 88:23 certificate 93:11 certification 92:1 93:1 certified 2:18 90:1 certify 90:3,16 chances 70:25 change 91:13 91:14 93:8 94:3 changes 91:12 92:7 93:7,9 changing 35:12 characteristic 56:6 cheap 53:15 64:25 66:21 67:1 check 38:18 checked 33:23 circuitry 76:3 circumstances 85:13 civil 92:5 93:5 claim 8:24 9:8 9:15,20,25 10:7,11 11:2,3 11:5 12:16,18	13:4,7,13,17 88:7,8 claims 8:21 9:7 10:20 11:6,7 11:10,22 12:14 12:15 13:10 clarification 8:4 11:8 28:22 33:25 67:17 clarifies 78:16 clarifying 8:14 class 48:19,19 48:19 cleaner 32:6 clear 8:8,11,12 21:10 35:13,17 54:13 58:11 63:7 clearly 36:4 65:25 86:2 cleveland 91:2 clubber 70:3 clumsiness 50:21 coburn 3:12 cohen 84:4,21 84:23,25 85:3 86:16 cohen's 84:13 84:16 87:3 collecting 31:14 collection 69:6 collectively 47:25 48:1	50:5 column 17:20 19:1,3 22:24 23:6 25:5 30:12 32:24 33:14,21 34:1 34:7,10,16,17 35:6 36:6,9 37:14 38:12,16 39:9,21 40:20 40:22 46:25 53:12 54:4 56:5,19 57:10 61:16 66:24 71:16,19 73:12 75:23 77:17 80:22,23,23 combination 65:2 combine 44:18 45:5 53:6 56:3 combined 65:2 combining 46:19,23 49:12 51:1 come 24:16 34:23,24 53:14 67:14 comes 66:22 coming 6:5 11:19 19:1 32:11 60:16 65:11,12,15 71:9 82:12 85:16 86:11
---	--	--	--

comment 24:12 commission 92:19 93:25 94:25 common 8:12 32:25 33:3,6 33:10,15 36:13 36:17,18,20 37:1,18,19,21 38:6,9,13,13,20 39:1,2,10,11,14 39:22,25 40:11 40:12,16,17,20 40:21 52:4 60:5,6 68:25 73:23 77:15 commonalities 42:14 commonly 71:24 communicate 81:10 communicated 82:15 communication 29:3 80:6 compact 28:8,9 42:12 completed 91:15 completely 69:17 completion 90:14	complicated 87:7 complication 88:16 component 74:23 components 12:20 18:5,6 45:5 49:13,17 50:12 51:1 77:9,11 compressed 88:22 comprising 19:2 77:18 computer 10:13,16 28:20 28:21 computers 51:8 51:10 conceive 70:3 concerned 70:10 concerning 6:18 22:21 23:3 configured 85:5 confused 58:6 connect 20:24 21:7,9,22 22:1 37:5 44:1 connected 19:21,23 20:12 20:12,20,21	23:16 24:10,20 27:7 28:20,24 30:15 33:19 52:14 77:3 80:11 84:19,24 connecting 19:24 20:17 52:25 62:2 connection 6:17 7:8 33:16 34:11 40:6 71:14 connections 77:21 connectors 77:12 connects 19:17 20:7,18 28:11 consider 16:19 consistent 8:24 construction 8:15,23 11:15 13:5 construe 8:3,13 construed 7:22 7:25 8:5 9:2 11:25 13:3 construing 8:19 12:14 contained 38:1 76:24 containing 37:23 76:4 contains 13:2 83:25 84:20	content 15:20 16:8,25 75:9 context 14:1 36:17 39:15 52:22 57:6 82:18 continuing 77:23 continuity 54:18 control 27:8 28:2,4,4 29:13 31:24 38:4 controlled 29:13 controller 8:16 10:1,8 11:16 11:23 18:10,14 18:16,19,23 19:4,6 78:15 78:18 82:21 83:11,20,22,24 controllers 83:5 controlling 81:12 83:4 controls 27:5 convenience 51:13 convenient 30:1 45:9 conventional 85:6 conventionally 89:6
--	--	--	---

conversion 88:20 convert 88:23 converted 57:4 79:23,24 converter 9:21 10:2,4,8 11:16 19:14,17 20:7 20:11,15,19 22:13,15,18 23:8,16 24:25 30:16 31:4,12 34:18 55:21 57:5 82:7,13 82:13,16,22 83:3,12,15,21 87:5 88:5 89:16 converts 26:14 conveyed 81:22 82:4 cool 56:12 copies 6:19 copy 6:25,25 7:14 17:13 corporation 1:4 2:4 91:6 92:3 93:3 correct 6:11 7:1,11,16,23,24 8:2 9:9,18,23 10:5,9,13 15:6 15:11 16:13,18 16:23 17:4,24 18:21 19:7,12	19:15,19 20:24 21:22 23:21,23 24:8,11,21 25:9 28:8 30:21,24 32:7 32:11,19,20,23 35:4 36:24 37:10 38:10 39:16 45:3 59:16 61:8 75:20 77:10 78:7,12,15 79:25 84:4,14 84:15 88:9 correction 31:8 corrections 91:12 93:17 correctly 36:15 40:14 81:13 correlates 31:22 corresponding 81:1,9 cortelessi 66:8 cortellesi 17:17 17:18,19 18:1 18:4,23,25 19:5 21:2,3,5 22:11,11,12,17 22:21 24:25 25:8 28:16 29:21,23 30:7 30:10,11,20,23 32:21,24 33:5 34:17 36:10	38:12 39:8,9 39:17 40:3,10 40:17,21 45:14 46:24 49:18 50:14,18 53:2 53:8,10 55:12 55:16,22 56:14 60:1,3,4 62:2,2 65:6,11,22,24 66:4 67:5,11 67:21 68:17 69:21 70:19 71:7 72:8 73:16 74:1 75:13,16,17 76:6,14,16,20 76:22,25 77:5 77:17 cortellesi's 38:16 cotangent 20:1 county 92:10 93:15 couple 48:22,24 coupled 80:25 81:9 83:18 course 43:25 49:9 court 5:24 8:4 11:8 17:6 27:17 29:9 33:25 67:17 85:1 92:7 cpu 19:2,4 77:19	created 29:23 62:20 csr 1:23 90:25 cumbersome 47:5
d			
d 19:12,14,17 20:7 22:13,14 22:18 23:8 31:5,6 34:18 36:4 57:5 61:22 82:12,13 85:2 86:3 89:4 89:5 d.j. 30:16 dance 70:5 dark 41:15 42:2,3 data 19:3 25:25 26:7,19 29:1 77:19 78:24 80:12,25 81:9 81:13 84:13 87:16 89:4,5 89:15 date 90:19 91:8 92:3,9,19 93:3 93:13,25 94:20 94:25 dated 90:22 day 92:16 93:22 94:22 days 42:9 54:25 91:18			

dc 3:7 72:22,23 72:25 dear 91:10 decades 40:1 declaration 6:17 7:8,15 13:1 14:1 16:23 17:16 decodes 26:8 dedicated 53:18 deed 92:14 93:20 deem 8:13 deemed 15:19 16:25 91:19 defined 18:18 degree 16:15 delivering 19:3 77:19 department 91:22 depend 47:21 48:9,13,15 dependent 11:7 depending 43:3 72:24 depends 63:23 deposed 5:13 5:17 deposition 1:12 2:14 6:2,5 27:18 90:13 91:8,11 92:1,3 93:1,3	depot 51:19,19 51:20,21 describe 12:4 33:3 37:21 41:1 53:2 described 38:14 50:17 53:9 57:13 85:13 describes 59:18 64:24 describing 35:22 40:3 53:10 63:9 desirable 54:8 determine 14:18 determining 14:13,22 15:6 81:11,16,19,23 82:2 detract 46:20 device 12:9 29:12 42:10 59:24 63:8,18 79:5 devices 81:1 diagram 17:23 21:11,14,16 35:8 56:18 57:2,3 85:18 86:9 diagrams 85:19 dictate 43:4	dictionary 11:20 different 8:12 30:13 41:16 42:1 47:16 56:19 57:3 65:2 74:1 75:11,12 difficulty 32:15 digital 9:21 10:1,2,4,8,11 10:15 11:16,23 19:14,17 20:7 20:15,19 23:8 24:24 25:1 26:2,8,9,13,14 26:21 27:1 29:3,5 30:16 31:3,12,12,23 34:17 42:9 55:20 57:5,6 64:20 77:20,25 79:24,24 80:4 80:24 82:6,21 82:22 83:3,4 83:12,13,15,21 84:13 85:5 86:14,20,20,22 86:23 87:3,5,9 87:17,20,21,24 88:2,3,5,9,10 88:14,17,24,25 89:2,7,9,12 digitally 53:19 68:8 69:4	digitize 61:25 81:10 digitized 31:19 80:5,7 81:15 81:18,21 82:1 82:4,9,11,14 83:1,18 85:15 85:16 86:10 direct 30:11 34:1 direction 90:10 directional 30:15,23 31:1 directly 23:9 34:18 79:19,20 disagree 45:7 49:15 55:15 64:1,4,5 disassembled 52:18,19 disc 23:11 27:14 28:8,9 30:14,20 31:2 31:3,13,17 32:10,12,16,18 32:22 33:18,20 34:8,10,13,20 34:24 35:1,4 35:21,22,25 36:1,13,21,23 36:24,25 37:2 37:8,16,17 38:20,24 39:10 39:12,15 40:4 40:10,24 41:2
--	---	--	---

41:8,9,10,13,17 41:20,22 42:6 43:3,4,8,11,12 43:15,18,19,22 44:10,13,18,22 44:23 45:1,11 45:16,22 46:6 46:13 47:3 53:18 54:15 55:17 56:5,9 56:13,15 57:4 57:11,19,23 58:1,4,7,9,11 58:18,21 59:1 59:6,8 60:5 61:3,3,21 62:5 62:9,11,23 64:6,7,10,18,22 67:18,19 68:2 68:7 69:5,8,10 69:11,19 73:6 73:11,11,23 74:5,8 75:1,4,6 75:8,14,19 76:18 77:14 disclose 29:21 32:21 76:25 82:6,20,24 83:10 disclosed 68:17 74:3 75:13 discloses 23:3 28:16 73:16 74:1 82:8	disclosure 35:2 37:13 80:2,4,9 80:11 84:21 discos 54:16 discs 42:13 55:23,25 56:2 discussion 6:22 11:13 22:20 34:10 38:13 67:6 display 20:25 27:21,23,23 76:6,10,12 77:1,6 disqualifies 16:12 distinction 33:10 diverse 41:14 dj 42:18 45:5 46:22 47:20,23 48:1,4,9 53:23 54:9 55:12 57:5,12,21,23 59:6,13 61:2 62:9 63:14,14 69:22 70:8,10 70:21,24 71:24 72:1,5,7,8,14 72:17 74:8,16 74:20 djs 70:16 71:24 72:7 document 6:3	dog 85:2 doing 53:9 58:12 75:4 83:2 85:15 download 63:16 72:12 downloaded 28:13 63:20 dozen 5:16 dr 5:10 6:1,24 17:12 73:6 78:4 84:2 89:21 drawing 77:13 drawn 19:20 dress 74:24 75:2 drive 12:10 37:24 42:21 47:15 54:23,25 drop 60:7 dsp 84:25 dv 27:21,23 64:11	ec 18:5,8,11,13 18:23 19:2,8 19:18,22,25 20:12,14,20 24:11,20 26:1 26:20 27:8 28:12 31:20,22 77:4,18 educational 15:2 educator 14:24 effect 57:21 73:18 74:25 effects 41:6 57:20 64:23 either 14:2 34:23 82:3 electrical 14:10 electronic 51:15 52:11 53:15,16 54:21 61:18 64:24,25 66:9,21 67:2 77:11 electronics 12:2 37:23 38:3 47:12 49:21 50:17,18 51:6 59:8 66:13 76:23 element 30:21 76:10 88:8 elements 12:25 email 91:17
		e	
		e 17:19,19 earlier 23:12 24:14 41:7 81:4 earmarked 44:6 easier 50:21,22 66:12 easy 12:3	

embodiment 35:3,10,12,14 35:15,19,23 74:14 75:18 embodiments 35:17 61:13 emphasize 24:13,16 employ 8:18 35:3 employee 90:17 enable 54:9 57:19 enclosed 91:11 enclosure 49:21 50:2 encoded 85:8 ends 71:13 engineer 15:8 27:14 engineering 14:10,10 16:15 engineers 20:13 entered 93:9 entire 12:9 63:16 92:5 93:5 equipment 42:6 43:9,12 44:1,10,19,20 44:23,24 45:2 47:19,23 52:7 52:11 70:11	equipped 28:21 era 38:8 errata 91:13,18 93:7,10,18 94:1 especially 44:5 45:9,19 esq 3:5,13,19 established 54:20 57:11 et 1:4 2:4 91:6 92:3 93:3 european 17:13 events 42:7 everybody 72:6 exactly 13:4 49:11 79:9 80:5 examination 4:4 5:8 examined 5:5 example 28:19 29:24 34:8 43:7 51:7 72:20 79:5 examples 41:17 except 36:20 60:4 86:19 executed 93:10 executes 77:24 execution 92:14 93:19 exhibit 6:25 7:5 7:14 9:6 17:12 17:14,16,20	75:17 78:4,4 78:12 84:2 exhibits 6:20 expand 26:4 expensive 47:4 70:11 experience 14:11 16:15,21 expert 15:17 expiration 92:19 93:25 94:25 explain 49:16 65:25 explaining 11:18 explicitly 82:24 exported 27:2 expound 25:20 external 47:12 49:17 51:14 62:3 68:13 79:5 81:1 84:17,18 extract 87:10 eyes 61:23 f fact 12:8 13:2 30:5 44:9,18 58:10 66:9 68:18 82:8,14 86:13 88:24 factors 14:12 14:21 15:5	fair 6:6 16:4,7 fairly 52:4 fall 66:12 false 74:21 familiar 40:24 41:2 70:16 far 47:10 56:23 features 40:4 61:5 fed 31:20 federal 90:13 figure 17:22 18:1,4 20:23 20:25 21:7 22:7 24:6 28:16 29:22 30:9,11,13,14 30:20,23 33:5 33:11,11,16,18 33:19 34:11,13 34:14 35:3,8 35:11,18,21,21 36:3 37:6 39:17 40:7 49:18,18 50:17 56:14 57:2 59:11,12,14 60:12,12,13,18 61:6 62:13 63:6,7,17 69:4 73:7 74:3,15 75:16,17,24 76:1,3,6,14,16 76:20,22 77:7 77:9,10,11,13
---	--	--	--

77:14 78:14 79:5 84:6,6 85:20 figures 35:20 36:14 50:17 56:18 76:25 file 88:22 filled 52:7 financially 90:16 find 91:11 finding 60:16 finished 5:22 firewire 10:18 first 8:5 11:2 12:18 17:22 23:20 26:4 33:4,13,13 34:1 44:21 54:3,12 66:7 69:11 73:13 75:18 79:23 87:13 fit 25:21 30:8 54:23 five 89:18 flexibility 64:12 flow 85:24 flux 30:15,24 31:1 flying 71:5 follows 5:6 forces 68:9	foregoing 90:4 90:6,10,12 92:13 93:18 forever 51:17 forgetting 67:15 form 10:22 11:12 12:21 13:12 26:9,9 26:11 41:4 65:17,23 66:5 format 27:2 forth 9:8,15,20 9:25 10:7 74:11 90:5 forward 91:15 four 46:4 68:24 free 92:14 93:20 fulfilled 38:15 function 26:10 52:25 functional 52:24 53:1 functionality 61:21 functionally 84:19 further 12:5 35:7 56:7,8 89:21 90:12,16 furthermore 69:9	g gadgets 30:8 general 14:1,3 50:24 51:18 67:22 generally 8:6 8:20 14:4 51:16 generated 12:6 32:9 85:1 generates 26:1 26:20 86:7 generating 9:16 10:2 31:16 82:22 83:12 88:9 gentlemen 25:22 26:5 73:1 getting 36:6 38:12 46:17 61:14,15,18 66:10 gig 29:25 give 41:17 51:7 69:22,23 74:9 74:16,21 given 21:23 44:18 90:11 gives 32:9 64:11 go 6:21 20:2 34:3 52:21 54:9 56:17 67:5 84:23	88:6 goals 54:20 goes 14:7 19:20 27:15 59:9 going 12:13 18:5,6,25 23:1 23:4 25:14 26:12 33:4 34:16 36:18 37:15 42:15,15 42:18 43:13,15 43:18,19,22 44:3,17 45:1 45:20,21,22 46:3,7,10 47:11,12,21 48:8,13,25 49:25 50:3,19 53:12,17 55:13 55:13,15,25 56:25 59:6 61:11 63:24 64:1,4,5,12 68:6,23 69:1 70:25 72:14,17 72:18 74:2,5 74:21,25 85:3 good 5:10 44:7 73:2 gotten 52:7 grab 61:25 graciously 56:4 great 53:1 69:12
---	--	---	--

grew 33:2 37:20 group 1:4 2:4 91:6 92:3 93:3 guess 12:11 13:5 33:13 81:20	hedging 33:17 hefting 50:15 held 6:22 11:13 help 57:17 helpful 27:18 hey 70:5 71:3 hold 22:25 24:15 52:12 53:3 62:21,21 64:2 80:22 home 51:19,19 51:20,21 hook 20:16 housing 29:22 50:1 huge 72:10 huh 17:2,5 33:17 50:7 55:10 57:22 74:4 human 30:7 humvee's 51:4 hypothetical 15:19 16:5,24 17:4 47:17 49:17 53:1 hypotheticals 71:5	identified 13:11 17:3 33:20 45:16 62:16 76:11,13 identifies 12:19 image 68:11 imagine 71:2 important 45:25 impression 74:9,16,21 inadvertently 5:21 inclined 89:1 include 11:15 12:18 21:23 30:5 62:6 64:21 67:21 83:8 included 9:3 11:23 22:9 91:13 includes 8:10 9:8,15,21,25 10:7,23,25 11:11,19 12:8 35:11,15 56:8 82:21 83:11 including 47:5 55:20 61:21 85:7,8 inconvenience 47:1 incorporated 93:12	incorporating 55:18 increase 50:20 50:21 increased 51:9 increases 49:13 53:6 independent 11:3,6 index 4:3 indicates 12:8 30:13 77:5 80:16 81:8 indicating 27:15 91:13 indication 79:22 indirectly 66:14,17,18 inf 29:12 information 27:24 31:3,13 31:14,16,19,23 77:25 81:11,19 81:23 82:2 83:4 85:8,25 87:10 informed 6:4 14:16,17 infrared 29:12 infringe 13:17 inmusic 1:7 2:7 91:6 92:3 93:3 innately 19:21
h			
hah 55:6 handed 17:12 handing 6:1,25 7:5 78:4 84:2 handle 45:20 handled 40:12 handling 47:7 hands 70:5 happen 52:10 52:22 63:13 happened 51:23 hard 47:15 53:18 54:23,25 71:13 hardware 20:15,16,18,19 83:19 hear 68:16 heard 52:5 heavier 51:12 heavy 45:23 47:20,22 48:12 50:8,16 51:3 51:22,25 52:2 52:8 54:10 55:1	i icon 76:9 ida 29:1 idea 66:8,9,20 ideas 14:25 15:1		

input 19:18 20:7,23 21:19 21:21 22:12,21 23:3 24:1 36:2 37:5 62:12 63:6 86:14 inputs 21:6 22:16 23:15 36:4 inside 12:1 30:8 54:23 65:5,19 76:3 76:24 77:12,20 insofar 46:18 instrument 86:23 insufficient 49:3 integral 60:8 60:10,11,13,14 60:17,19,21 integration 51:16 interaction 68:2 interested 68:23 90:17 interesting 8:17 12:22 interface 28:23 29:1,5,16 83:22 86:24 interfaces 28:17 78:2	internal 45:11 interpretable 81:20 interpreting 72:3 interrupt 22:25 25:12,15 intimately 19:21,23 intratrack 81:11,16,19,23 82:2 introduction 55:24 56:1 invention 35:10 36:12 53:13,23 54:9 55:7,12 55:16 58:11 66:25 71:20 72:8 73:22 ipr 5:17 6:18 7:9,11,13 isat 29:16 ita 29:5 items 23:21 29:21 84:16 itv 28:22	job 1:24 84:1 jockey 27:14 41:8,9,14,17,20 41:22 42:7 43:3,4,8,11,12 43:15,18,19,22 44:10,13,18,22 44:23 45:1,16 45:22 46:6,13 47:4 61:3 64:22 69:5,8 69:10,11 75:4 75:8 jockeys 40:24 41:2,11 54:15 judgment 15:9 15:10 jukebox 47:5 jump 53:12	knob 73:7 knob's 73:15 knobs 27:4 36:11 38:4 73:9,16,17,20 74:3 75:7,14 76:16 77:1,6 know 5:20 13:4 13:24 14:12,15 14:21 21:1 22:22 35:16 46:21 47:18 50:15 64:22 65:6 66:6 69:17 70:7,11 72:13,18 85:18 87:8 knowing 14:24 knows 75:3
		k	l
	jack 10:17 11:17 12:7 jingles 54:17 69:14 joanna 1:22 2:18 90:24	kay 5:12 keep 52:14 53:17 keeping 6:20 64:11 kevin 3:19 keyboard 28:2 28:4 76:14 77:1,6 78:1 kids 72:20,25 kind 10:17 37:22 69:10 88:6 kinds 51:8	l 17:19,19 labeled 19:21 landscape 51:24 language 13:8 13:13 66:16,23 67:3 72:4,5 88:7 laptop 51:11 large 47:5 49:3 49:6,6 69:5 lawrence 72:21 lead 56:23 learning 14:24

left 21:1 25:1 26:24 legal 12:23 15:4,5 91:1 94:1 lengthy 67:6 letter 91:19 level 14:5,22 15:6 16:14 libraries 42:12 library 42:16 42:19 43:13 45:12 47:15 54:1 61:24 63:16 64:24 68:8 70:21,24 72:10 lift 50:16 light 16:1 likely 43:21 limit 72:13 limitations 11:5 13:11 line 17:20 19:24 23:6 25:5 30:12 32:24 33:14,22 34:1,7,11,12,12 34:17 35:6,7,9 36:7,8 37:15 38:12,16 39:9 39:21 40:10,22 53:12 54:14 56:5,21,24 61:16 66:25	71:16,17,18,19 73:12,13 80:20 91:13 93:7 94:3 linear 48:13 lines 15:17 29:3 40:21 54:4 75:23 77:17 list 12:25 23:22 41:25 listed 10:21 11:11 93:7,17 listing 93:7 literally 19:20 73:8 little 26:16 27:18 32:6 45:15 46:25 68:24 76:9,11 live 23:10,14 34:19 llp 3:4,12 long 39:23 40:12 look 8:20,21,21 9:6 12:15,19 15:24 47:23 48:21 56:14 59:12 64:17 82:3 85:21 looking 9:7 15:7 20:20 23:5,25 67:9 68:21 76:7 78:14 80:6	lost 62:14 lot 47:1 48:14 54:14 71:3,4 72:10 lots 46:7,10 49:7 louis 3:15 lower 80:19 lp 40:12 63:1,1 71:8 74:9 lps 40:1 42:12 42:25 62:11 63:16,20,21 72:13 lr 21:1 36:4	72:19 making 16:2 manipulate 50:22 manipulates 27:15 manual 27:5 manually 30:17 57:6 marked 18:5 27:4 28:7 mass 49:20,20 matter 14:23 44:9 47:9,11 matthew 3:5 mcmahon 3:19 mean 14:2 21:10,10,11 30:11 32:14 36:6 37:3 38:18 47:13 48:7 71:22,22 89:7 meaning 32:14 means 8:9 39:25 53:5 68:7 78:1 79:18 mechanism 12:10 37:24 84:20 media 85:8 meet 13:16 47:3
		m	
		m 85:2 ma 27:4,7 36:11 73:15,20 machine 90:9 madam 91:10 made 8:12 90:8 92:7 magnetic 30:15 30:24 31:1 make 23:1 24:12,13 32:17 49:23 50:21 51:2 54:22 56:22 57:15 61:15 65:1 71:14 72:2 makes 30:2 33:9 51:2 52:10 58:10	

meets 13:13 memory 42:23 58:22 mention 26:13 56:1,2 mentioned 36:12 53:14 73:22 mentioning 36:7 metal 48:14 microphone 24:2 43:20 microphones 51:11 microprocessor 19:2 77:19,24 84:25 85:4,22 86:7,15,17 middle 18:4 midi 85:1,12,14 85:23,24,25 86:8,10,17,21 86:23 87:1,3 87:10,14,14,17 87:24 88:2 89:1,4,8 midwest 91:17 94:1 millimeters 59:19 mind 41:15 minimal 13:6 minimum 21:20	minutes 89:18 mixer 43:22 mo 3:15 mode 58:24 modifies 81:4 modify 80:17 modules 29:7 moment 34:3 moon 1:13 2:15 4:5 5:4,10,12 6:1,24 17:12 73:6 78:4 84:2 89:21 91:8 92:4,9 93:4,13 94:20 morning 5:10 mother 50:15 motivating 68:8 motivation 67:9 motivations 67:7,10,12 moving 39:18 74:11 mp3 76:22 77:1 77:6 88:22 multiple 49:13 50:12 music 10:3 27:9 28:5,12 29:6 29:18 31:23,25 32:12,15,18,21 33:9 41:3 42:9 42:11,16,19,21	43:13 46:16 47:7 53:19,20 54:7,17 57:14 57:23 58:22 61:22 63:25 69:14,16,25 70:4,5,5,19 71:3,8,13 82:23 83:13 87:4,18,20,21 88:3,10,11 89:9 musical 85:7 86:23 n n 3:14 name 5:10,11 5:12 90:20 91:6 92:3,4,15 93:3,4,21 naturally 68:14 nature 48:17 necessarily 16:12 necessary 8:13 8:22 37:4 44:1 45:20 48:8 need 9:12 34:3 36:23 37:7,15 42:7,8,10,15,15 42:18 43:15,18 44:19,20,22 45:5,16 47:9 47:20 48:1,4,9 49:12,19 52:18	53:20 54:7,16 55:2,4,5,13,13 57:15 58:1 59:6,13,14,15 63:20,22 64:7 64:9,13 83:2,7 83:20,21 needed 36:22 42:11 45:21 52:20 needing 38:23 needle 38:1,2 81:12,19,23 82:3 needles 81:17 needs 10:17 11:25 36:23 37:1 43:4,8,12 45:2,3 58:7 63:23,24 64:2 neither 68:17 90:16 never 13:5 41:7 41:9 70:8 new 29:18 69:12 nice 26:16 44:14 71:2 nifty 66:11 norman 3:13 4:7 5:9,10 6:23 11:1,14 13:15 25:11,13,17,24 26:15 27:17,20 29:9,11 34:6
--	---	--	--

65:20 66:2,15 73:5 89:18,21 notarized 91:14 notary 91:25 92:10,18 93:15 93:23 94:23 note 91:12 noted 89:24 notice 6:2 number 7:12 56:24 78:14 91:7,13 numbers 88:17 88:18,21 93:7 numeral 7:21	76:2 82:25 83:8 86:19 obviously 68:14 obviousness 15:25 65:10 67:7,25 occasional 40:25 occur 82:16 occurring 37:13 october 1:15 2:17 5:1 90:22 91:4 office 1:1 2:1 official 92:15 93:21 oh 32:4 49:25 66:19 70:6 ohio 91:2 okay 5:17 6:21 8:18 9:1 13:24 15:5,16 16:4 16:11,22 18:11 18:25 19:5,10 20:2,6,10 23:7 23:20,25 24:5 24:19 33:13 35:6 40:9 41:1 41:7 42:14 47:18 48:4 49:6 50:25 53:4,12 54:2 55:22 56:14	57:11,15 59:24 60:18,19 61:2 61:7 62:19,21 63:19 64:5 66:3,22 67:3 67:15 68:22 70:10,18 73:12 73:20 74:1,14 75:25 76:7 79:22 80:14,18 80:22 old 69:17 older 58:2,3 operate 36:23 70:16 83:22 operating 58:16 operation 58:24 77:25 operational 30:1 operations 27:23 opine 75:9 opinions 24:16 opportunity 24:15 opposed 67:12 option 69:22 order 14:18 47:3 52:25 72:9 ordinary 8:6 13:22,24 14:4 14:13,18 15:8	15:14,18 16:13 16:17,20,24 30:3,6 49:24 59:22 61:24 65:12,16 67:13 82:10 83:6 original 53:20 54:7 90:13 ounces 51:12 66:12 output 10:2,4 10:11,12,15,17 11:17 25:1,2,2 26:1,11,20,23 26:23 27:1,1 31:11 32:2,6 37:4 38:7 49:1 60:22 61:1 62:9,17,21,23 63:2,5 67:21 69:4 79:14,15 79:19,21,23 80:24 81:1,2 82:22 83:13,14 84:13 85:1,14 86:8 87:3,5,17 88:4 outputs 23:23 85:22,22,23,24 86:10,11 outputted 26:24 outputting 85:11 86:17
o			
o 17:19 oath 5:5 90:7 object 12:21 65:17 66:5 objection 10:22 11:12 13:12 65:23 objective 38:16 38:18,19 39:3 observe 34:22 obtained 79:21 obtaining 82:11 83:2 obvious 16:1 30:5,6 61:9,13 62:6 64:21 65:8,18,25 68:3 69:3,7			

outside 20:24 21:7,10,10,11 21:13,16,22 22:10 23:13,17 28:17 77:20 overcoming 53:13 66:25 own 71:4 owner 1:8 2:8 2:15 3:11	part 20:17 26:10 38:25 39:6 53:25 55:16,22 62:5 70:22 80:19 83:25 93:9 particular 14:8 14:14,19 59:18 64:13 72:18 83:5 particularly 50:14 party 29:25 41:18,20 70:4 71:3 72:20 90:18 patent 1:1,2,8 2:1,2,8,15 3:11 6:7,10,10,13,14 6:18 7:1,3,15 8:9,12 9:6,8,21 10:20 11:3,10 12:9 17:13 18:21 23:2 75:10 78:5,5 84:3 patents 13:10 paying 31:8 pdif 27:2 peculiar 56:6 pennsylvania 3:6 people 8:21 15:8 46:4,6,7,7 70:4 72:18	perform 74:2 74:11,15 performance 46:20,22 85:7 person 8:6,6 13:22,24 14:4 14:5,13,18 15:13,18,19 16:3,5,6,9,12 16:17,20,24,25 17:4 30:3,6 34:2 49:24 50:9 59:22 61:24 65:9,12 65:15 67:13 68:11 82:9 83:6 86:19 personal 28:20 28:21 personalized 47:6 personally 92:11 93:15 pertains 90:12 petitioner 1:6 2:6 3:3 ph.d. 1:13 2:15 4:5 5:4 91:8 92:4,9 93:4,13 94:20 phone 64:21 91:3 phono 9:22 21:24 22:2,3,4 22:7 47:16	63:10 64:18 69:1 phonograph 50:1,10,11,14 50:16,20 51:5 55:1 56:11 61:12 66:11 67:19 76:4 78:17 82:12 84:11 phonographs 42:8 photo 9:16 21:17 phrase 6:13 34:15 40:16,20 physically 39:13 74:10 physics 47:9 pick 39:20 picked 21:19 pickup 40:13 picture 20:20 piece 27:8 pieces 29:6,18 47:7 52:17,20 53:19 54:17 pitch 87:11,12 pivot 37:25 place 39:10 46:16 51:21 52:23 84:24 90:5 placed 36:13 37:18 38:20
p			
p.m. 2:17 73:4 89:19,20,24 package 51:6 51:22 page 7:19,22 15:17 18:2 91:13,15 93:7 94:3 pages 1:25 paper 6:1 paragraph 9:1 15:16 30:10,12 30:13 36:8 40:3,6 53:22 54:12 55:9,11 57:13 61:16 69:11 71:11,12 78:21 79:7,9 80:14,20,21 81:7 85:3,14 86:2 paraphrasing 12:13			

40:11 47:10 73:23 plan 75:18 plastic 49:21 platform 9:13 59:25 platter 8:7,10 9:4,9,12 11:20 12:3,10 21:4 21:17 33:7 37:23,24 39:4 39:7 56:10 58:8 59:19 68:25 76:4 plattersrus 59:20 play 41:3 42:20 53:19 62:11,11 62:23 63:1 64:10 69:3,7 69:13,18,23 70:6 71:8 72:14,17,19 88:19 playback 28:13 31:25 played 24:8 30:18 31:24 57:7,8 58:21 58:23 74:10 79:19 85:8 player 21:24 23:23 24:1,2,3 28:7,9,11 32:25 33:3,6	33:10,15 36:14 36:18,18,21 37:1,18,19,21 38:7,9,13,14,21 38:23 39:1,2 39:11,11,14 40:11,16,17,20 40:22 45:10 47:11,14,16,21 49:16,20 50:24 55:3,5,7,14,18 56:3,7 57:24 57:25 58:5,9 58:13,17,25 59:2,3,4,6,14 59:15,16 60:5 60:7,8,9,20,25 61:4 62:1,1,4,7 62:8,10,16,22 63:15 64:18,19 64:21,23 67:19 68:1,4,6,14,15 68:19,24,25 69:4 73:24 75:19 76:20,22 77:1,1,6,6,15 players 42:8 67:22 68:1,19 playing 8:10 9:3 17:23 24:23 25:4,6,8 25:25 26:19 27:25 28:5 39:23 40:12 47:6 57:12	69:2 71:11,12 71:21 72:21 playlist 41:4 plays 64:9 please 5:11 17:7,19 18:1 24:17 30:9 32:24 53:11 75:16,21 84:6 91:11,11 plop 59:21 plug 36:1 47:12 62:1,12,14 63:5,10 88:18 plugged 51:9 pocket 29:5 point 12:11,12 15:2,4,7 23:18 24:13 26:13 33:13 35:5 48:20 51:1 59:12,13 72:16 73:2 pointed 56:4,9 pointing 35:9 35:16 54:3 points 30:1 34:22 popular 49:24 port 28:21 79:2 80:24 81:22 82:5 83:5 portability 50:23 53:5,7	portable 29:24 30:1 53:15 54:21 61:18 64:24,25 66:9 66:21 67:1 portion 8:8 63:15 portions 67:11 portray 85:19 85:24 portrayal 33:4 portrayed 20:16 21:5 76:3 77:13 portrays 20:21 ports 80:16 81:1,8,9 83:5 83:18 posita 13:19,20 13:21,22 14:9 16:3 position 8:14 31:2,12,19,23 32:10 59:18 61:1 75:25 76:2 81:12,17 81:24 82:3 possibility 70:13 possible 23:15 46:18 53:18 possibly 41:5 43:24 pound 50:19
---	--	--	--

pounds 48:22 48:25 54:25 power 45:20 49:7,9 pre 38:3 precisely 12:14 preferred 35:10,12,14,15 35:16,18,23 preparation 16:14 presence 30:14 33:11 57:4 82:13 present 3:19 47:15 53:13 66:25 71:20 77:7 presumably 21:1 previous 56:19 57:3 previously 26:13 primary 54:18 principles 53:3 prior 15:20 16:8,9 17:1,10 23:2 75:10 90:7 probably 14:10 42:11 43:8 44:6 48:25 50:18 52:4	problem 54:13 67:1 problems 53:13 procedure 92:5 93:5 proceeding 5:17 proceedings 90:4,6,8,14 process 18:9 19:8 processer 86:4 processing 18:8 18:11 19:1,2 19:18 20:8 24:11,20 26:1 26:8,20 27:7 28:12 31:20,22 77:18,19,24 84:1 processor 78:24 80:12,25 81:9,13 82:5 85:5 produce 26:11 48:25 85:16 89:16 produces 25:2 product 15:1 49:24 production 91:15,17,22 professional 71:20	professionally 41:10 program 77:24 proposed 47:17 protocol 10:13 10:17 provide 26:11 31:2 75:2 provided 6:17 7:15 75:19,20 provides 36:12 73:22 providing 53:14 55:19 62:5 67:1 public 92:10,18 93:15,23 94:23 publication 78:6,23 79:1,4 84:3 pull 59:10,20 purpose 20:23 21:6 27:16 38:25 39:16 54:9 58:4 60:25 61:17 73:11 purposes 8:14 21:21 put 12:2,3 33:8 49:25 60:5,6,8 65:14,19 68:10 76:3 85:17 86:11,20,20,21 86:21	puts 58:10 putting 47:8 51:10 65:5 74:22 <tr> <td colspan="4">q</td></tr> <tr> <td colspan="4"> qualify 16:16 quality 46:1,20 46:21 question 5:22 11:2 12:11,12 12:23 18:11 19:5 20:6 21:15 22:19 23:12 24:18,19 25:18,20,23 26:17,17 33:12 37:12 50:23 57:16 75:11,12 75:12 80:8 85:4,10 87:7 questions 5:21 25:19 89:21 quite 33:6 quote 15:18 39:22,23 40:10 81:10,16,17 </td></tr> <tr> <td colspan="4">r</td></tr> <tr> <td colspan="4"> r 17:19 radio 23:10,14 24:4 34:19 rather 12:9 58:22 67:6 rd 24:23,24 25:6,8,25 </td></tr>	q				qualify 16:16 quality 46:1,20 46:21 question 5:22 11:2 12:11,12 12:23 18:11 19:5 20:6 21:15 22:19 23:12 24:18,19 25:18,20,23 26:17,17 33:12 37:12 50:23 57:16 75:11,12 75:12 80:8 85:4,10 87:7 questions 5:21 25:19 89:21 quite 33:6 quote 15:18 39:22,23 40:10 81:10,16,17				r				r 17:19 radio 23:10,14 24:4 34:19 rather 12:9 58:22 67:6 rd 24:23,24 25:6,8,25			
q																			
qualify 16:16 quality 46:1,20 46:21 question 5:22 11:2 12:11,12 12:23 18:11 19:5 20:6 21:15 22:19 23:12 24:18,19 25:18,20,23 26:17,17 33:12 37:12 50:23 57:16 75:11,12 75:12 80:8 85:4,10 87:7 questions 5:21 25:19 89:21 quite 33:6 quote 15:18 39:22,23 40:10 81:10,16,17																			
r																			
r 17:19 radio 23:10,14 24:4 34:19 rather 12:9 58:22 67:6 rd 24:23,24 25:6,8,25																			

26:10,19 read 18:25 22:23 30:4 36:14 40:13 46:25 53:11 54:5 61:19 66:24 67:8 69:25 81:13 85:3 92:5,6,12 93:5,6,17 reading 56:22 61:23 68:24 75:20,22 79:7 79:8,9 91:19 ready 54:17 real 16:6,9 reality 37:3 really 48:8 63:23,24 74:17 realm 36:3 reason 33:17 75:4 91:14 93:8 94:3 reasonable 14:8 45:4 52:5 52:9 71:6 reasons 68:24 recall 7:12 24:6 60:11 80:10,13 82:18,19 receipt 91:18 receive 24:2 received 78:2 receives 26:7 26:13	receiving 9:16 9:22 23:11 26:9 34:20,25 85:15 reception 29:1 recognize 17:14 85:6 recognizes 85:11 recognizing 83:6 record 5:11 6:21,22,24 7:13 11:13 21:2,4 23:23 23:25 24:2 32:25 33:3,6,9 33:10,15 34:3 34:4 36:14,17 36:18,21 37:1 37:18,19,21 38:6,9,13,14,20 38:22 39:1,2 39:11,11,14,23 40:11,12,16,17 40:20,22 45:10 47:11,14,15,21 49:16,20 50:24 55:3,3,5,6,14 55:18,20 56:3 56:7,11 57:12 57:24,25 58:5 58:9,13,17,21 58:25 59:2,3,4 59:5,14,15,16	60:5,7,7,8,20 60:25 61:4,22 62:1,1,4,6,7,8 62:10,16,22 63:15 64:10,19 64:23 67:22,25 67:25 68:1,3,3 68:6,12,13,14 68:15,19,19,19 68:24,25 69:4 69:4,6,13 70:6 70:12 73:3,24 74:10,11 75:19 77:15 79:18 85:6,25 86:3 89:19 90:8,11 93:9 recorded 29:6 69:16 87:1,15 recording 9:18 10:3 32:22 56:8 58:15 67:21,22 79:18 83:14 87:4 88:4,12,14 89:3,9 records 8:10 9:3 21:3 23:10 23:15,18,20 27:16 30:18 33:8 34:19 47:1 53:21 54:8,10,14,19 55:4,13 57:7,8 61:25 67:23	68:12 69:2,3,7 69:19,23 71:12 71:13,21 redirect 89:22 reduce 53:23 refer 6:10 17:16 18:23 19:6 38:1 69:13 reference 23:3 35:7,13 78:9 78:14 79:1 84:6 91:7 92:2 93:2 referenced 33:16 37:14 76:1 78:23 79:4,16 92:11 93:15 referencing 23:12 referred 18:15 25:8 57:3 referring 14:15 15:3 22:17 23:9 25:3 34:13 35:18,24 38:19 39:6 46:23,24 53:8 57:9 61:10 refers 12:9 24:24 regard 15:13 regarding 6:7 7:15
--	---	---	--

regardless 42:18 regular 57:24 57:25 relates 71:20 relative 90:17 relevant 57:2 reliable 53:15 64:25 67:1 relying 55:9 67:3,12 remember 50:15 81:5 remembered 57:1 60:15 80:19 remembering 14:20 85:9 remote 1:12 2:14 29:13 70:14,15 render 55:1 rephrase 60:6 report 7:18,21 13:19,20 15:17 60:15 66:1 67:6 68:22 reported 1:22 reporter 2:19 5:24 8:4 11:8 17:6 25:22 26:5 29:9 33:25 34:2 67:17 73:1 85:1 90:2 92:7	reporter's 27:17 represent 27:4 representation 89:12,14 representative 9:17 10:3,5 83:14,15 87:4 87:6,8,9,11,12 87:19 88:3,11 88:13,15 89:2 89:8 representing 88:10 represents 88:21,24 request 54:17 69:14 70:1,20 71:8,13 72:9 72:10,19,21 93:9,11 requested 72:15 90:15 requests 70:25 71:25 72:1,5,7 required 91:25 requirement 11:22 requirements 10:21 11:11 12:17 38:15 47:3 requires 49:7 resort 47:4	response 80:17 81:4 responsive 10:1 82:21 83:11 returned 91:18 review 90:14 91:12 92:1 93:1 rhythmic 30:17 57:6 right 6:14,24 8:1 9:4,13 10:21 11:11 12:11 15:10,13 17:1,10,22 18:17,22 20:3 21:1,8 22:5 23:3 24:5,17 25:1 26:2,21 26:24,24 27:2 27:9,11,25 28:5,7,9,14,17 28:20,24 29:3 29:14,19,22 30:18 31:4,13 31:16,17,20,25 32:3,10,12,22 32:25 33:16,20 34:11 35:2,14 36:2,17,19,22 37:8,12,19 38:7,17,22,24 39:8,13 40:1,4 40:7,18 41:8 41:23 42:4,19	42:21 43:1,5,9 43:13,16 44:1 44:7,11,15,24 45:1,13,17,23 46:1,8,14,17 48:2,5,7,10,15 48:16,18,22 49:1,4,7 50:9 51:3 52:9 53:7 53:24 54:4,6 54:11 55:5,9 55:14,23 56:16 56:22 57:21 58:1,5,23 59:3 59:7 60:4,12 60:22,24 61:16 62:19,24 63:4 63:6,12,17,19 63:25 64:3,7 64:10,14 65:3 65:11 67:5 70:2,8,21 71:1 71:22 72:5,11 72:21 73:7,18 73:24 74:3,6 74:12,18,23 75:1 76:1 77:2 77:7,15 78:19 78:24 79:2,6 79:15 80:2,3,8 80:9,12,23 82:7,17,23 84:7,17,22 85:12 86:6,8 86:18,24 87:1
---	--	---	--

87:6,13,17,18 87:22,25 88:5 road 5:20 rocks 51:24 53:16 role 19:4 69:9 roman 7:21 room 48:21 61:11 rotatable 9:3,9 9:11 11:20 rotate 36:24 37:2,7 38:23 56:10 rotates 37:15 rotating 8:10 12:3 58:7 row 76:8 rules 5:20 92:5 93:5 run 20:1,14 86:3,3,14 89:15 runs 19:8 20:14	samples 87:9 88:17 satellite 29:16 29:17,19 satisfied 39:3 satisfy 38:16 saved 45:12 savings 51:13 saying 16:2 35:2,25 39:10 49:15 50:5,11 53:22 54:8 55:2,11 56:12 58:14,14 60:7 61:14,24 62:15 63:10 65:1,8 65:13,15,19,21 66:16,19,22 67:10,12 68:16 68:17 69:21,21 72:3 81:25 85:21 86:7 89:7,8 says 12:5 17:22 19:12 25:6 33:14 34:15 35:9 37:17 54:6 60:16 69:25 73:14 75:17 78:3,21 86:12 scenario 38:23 43:11 52:21 64:6	scratching 27:11,13 36:11 41:5 57:21,25 73:15,17,21 74:2,12,15 76:17 sd 30:23 31:1 32:2,4,6,9,11 33:12 36:23 37:1,3,4,9 39:19 55:17 56:15 59:7,8,9 59:17,21,24 60:21 61:1,4 62:17 77:15 se 3:6 seal 92:15 93:21 second 6:21 22:25 24:15 52:12 64:2 74:5 80:22 section 7:18,21 39:8,9 54:3,4 see 8:22 15:21 15:22 18:6,7 19:12 25:5 32:25 33:17 34:7,21 36:14 39:21 52:10 54:24 57:1,17 67:11,15 68:21 74:10 80:24 81:20 85:21	seeing 65:13 seem 61:10 68:23 seemed 14:8 81:5 seems 52:5 70:14 71:5 seen 6:2 7:3,5 13:5 40:25 70:8 sees 25:20 select 27:8 selected 78:1 selection 28:5 semantics 89:11 sending 87:16 sense 14:24 15:1 41:3 54:22 72:2 74:25 sensor 30:15,24 31:1 33:11 39:19 55:17 75:20 sentence 9:1 15:23 16:11 40:9 73:13 separate 62:13 63:18 64:11 67:20 84:18 separated 46:11,11 47:17 separation 45:25 47:18
s			
s 17:19 27:2 91:15 93:8,8 94:3 sack 52:2 saint 3:15 sample 87:16 88:14 89:4,5 89:13,13 sampled 89:14			

series 88:17,18 88:21 serve 39:16 60:24 set 9:7,15,20,25 10:7 28:24 59:25 90:5 setting 30:5 64:15,16,17 settings 46:2 71:21,23 78:1 setup 74:17,22 several 28:16 53:19 77:20 shape 25:15 sheet 91:13 93:7,10,18 94:1 shelf 59:20 shorthand 2:18 90:1,9 show 12:25 40:25 56:16 69:12 76:6,14 76:16,20,22 77:3,9 showing 84:24 86:9,10 shown 21:7,11 21:16 30:21 49:17 59:14 77:7,8,14 84:18 85:18,23 91:16	shows 13:1 21:1 36:4 56:15,15 77:11 side 58:12 signal 9:17,22 10:2,5,12,16 12:6 21:18,18 26:2,21,23,24 27:1,2 32:2,3,6 32:7,9 39:20 62:24 63:2 81:3,16 82:22 83:13,16 85:5 87:3,6,18,21,24 88:3,11,15 89:2,5,9 signals 23:11 26:12 34:20,25 80:7 81:2,10 81:21 82:4,9 82:11 88:10 signature 90:23 91:14 signed 92:13 93:18 signing 91:19 silent 86:16 simply 35:11 sincerely 91:21 single 29:22 45:6,8,10 49:13,14,19 50:8 51:2 74:23 85:20	sir 91:10 sits 58:11 situation 69:15 six 51:12 66:12 skill 8:6 13:22 13:25 14:4,13 14:19,22 15:6 15:8,14,19 16:13,17,20,24 30:4,7 49:24 59:22 61:24 65:9,12,16 67:13 68:11 82:10 83:6 sky 72:13 smith 3:4,5,9 10:22 11:12 12:21 13:12 25:12,15,19 65:17,23 66:5 89:22 91:5 smithbaluch.... 3:9 smoky 41:15 42:2,3 software 19:8 20:4,12,14 solution 54:18 55:21 69:14 solutions 91:1 94:1 somebody 70:12 71:8 someone's 43:7	song 27:24 sony 1:4 2:4 29:10 91:6 92:3 93:3 sophisticated 47:4 sorry 17:6 22:25 23:2 24:17 25:15 26:18 30:10 32:4 40:19 56:19 65:17 70:6 71:17 75:23 78:5 80:23 sort 8:11 19:25 43:19,23 sound 44:7 46:1 47:19 51:10 52:9,21 87:1,15 source 71:8 sources 20:24 21:8,9,22,25 23:10,13,17 34:19,23 68:13 speak 26:5 speaker 44:14 79:6,15,16,20 80:3,9,11 81:2 88:19 speakers 26:24 42:10 43:16 44:14 45:17,19 45:19,22,25
--	---	---	--

46:8,10,12,13 46:19 47:9,10 47:13,17,19 48:2 81:3 speaks 68:5 spec 8:22,25 56:17,18 specifically 23:18 54:6 specification 33:21 specifications 76:12 specified 13:7 speculating 75:10 speech 10:3 26:16 82:23 83:13 87:4,24 88:1,3,10,11 89:10,14 speed 31:2,12 31:19,23 32:10 spencer 78:6,9 78:11,15,18,21 78:23 79:1,4 80:3,7,9,14 81:7 82:6,16 82:20,24 83:8 83:10 86:12 spencer's 81:15 spice 41:4 spin 37:24 spread 46:13	stack 42:25 standard 10:13 10:16 standpoint 47:19 stands 86:23 start 11:18 21:13 33:4 34:16 36:8 44:21 56:25 68:23 starting 18:4 22:24 23:6 54:14 57:10 66:24 starts 71:12 73:13 state 5:11 7:13 8:23 77:18 90:2 92:10 93:15 stated 10:24 statement 16:22 32:19 33:14 92:13,14 93:19,19 states 1:1 2:1 6:7 34:17 36:10 40:10 54:12 84:3 stating 12:13 stationary 9:13 step 67:24 steps 8:18	stereo 26:12 stopping 73:2 storage 24:5,7 24:10,19 28:13 31:24,25 store 53:19 68:7 stored 32:12,15 32:18 42:21,23 45:12 58:22 stores 24:7 storing 17:23 23:9 34:18 64:20 stream 83:4 street 3:14 strikes 12:23 strive 16:6 structure 63:8 83:25 students 14:24 stuff 12:1 43:25 51:9,14 56:8 61:10 69:19 stylus 38:2 subjective 15:11 subscribed 90:20 92:10 93:14 94:21 succession 30:18 57:7 sufficiently 33:12	suggest 74:22 suggested 66:14,16,20 68:17,18 82:14 suggesting 39:18,19 49:2 55:12 74:24 75:3 suggestion 65:21 66:3,7 66:22 67:4 suggests 69:1 70:19 suite 3:6 91:2 superior 91:1 supply 51:24 support 9:11 53:20 54:7 supposed 25:17 sure 23:1 32:17 45:7 56:22 57:15 61:15 surprise 33:24 sw 19:8,21,25 20:2,9 sworn 92:10,13 93:14,18 94:21 synchronizati... 30:17 57:7 59:10 synchronize 58:15 81:2 synchronizing 57:14 58:20
--	---	---	--

system 44:7,14	talking 14:2,6	teachings 46:24	26:12 35:5
t	20:13 22:18	technical 34:2	37:6,14 38:22
t 17:19	46:25 47:8	84:12	50:22 56:12,23
t.v. 28:23	50:11,13 51:4	technology	60:20 68:10
table 43:25	51:5 53:2,3	14:7,14,19	81:21
63:8	55:6,7,8,8,23	58:2,4	things 10:24,25
take 14:25,25	57:8 58:19,20	telephone 29:2	13:2,7 20:25
42:7 43:4,15	61:7 65:3,4,6	television 28:24	22:9 23:14
43:18,20,22	65:10 67:20	tell 25:14 52:4	38:5 51:15,24
44:19,20,22,23	69:15 71:11	75:21	54:1,19 62:3
45:2,16 47:24	74:20 82:25	tempo 87:11,11	64:13 65:3
48:1 49:12	talks 11:22	term 7:22,25	66:10 69:7
52:16,19 54:10	22:11,13,14,18	8:11,15,19 9:2	73:9 74:2 83:7
58:5 59:9,15	29:23 55:19	13:3 18:18	83:8 84:23
61:3,4,9,11	59:11 61:19	23:17 82:16	85:19
63:10,20,22,23	66:9 67:21,22	84:10	think 5:22 8:7
63:24 64:2,7,9	73:9	terms 8:3,13,24	8:7 11:21 15:3
64:12 65:18	tape 24:3	15:24 16:14	18:10 20:10
68:6 71:24	tapes 23:10,14	89:3	23:4 24:19
72:1,9,9 76:2	34:19	testified 5:6	25:2 30:7 41:7
86:2,14 88:18	taught 8:24	12:12,14 17:3	45:7 50:4 52:3
89:15	45:14 60:1,3,4	17:9 18:18	57:12 58:7
taken 2:15	82:4	53:7	59:22,23 61:13
14:18 29:24	tc 28:2,4	testifying 23:1	66:13 68:11,18
90:4	teach 8:22 21:3	90:7	69:9 70:10,13
takes 25:25	36:20 73:10	testimony	70:15 71:25
26:19 72:5,7	86:5	20:11 90:11	72:6
talk 5:21,23	teaches 24:25	92:6,7 93:6,9	thinking 15:24
22:12,15 25:3	39:18 62:2	93:12	23:13,15 52:23
25:10 51:18	66:8 73:9	thank 7:20 17:8	73:8 87:8 89:3
56:5 81:3	81:18 83:9	25:25 28:22	89:6
83:22	86:2,13	30:9 31:8 32:5	third 80:21
talked 23:12	teaching 53:8	75:24	thirty 91:18
41:5 67:18	61:17	thing 11:21	thompson 3:12
68:22 76:18		12:18 13:6	

thompsoncob... 3:17 thought 12:19 60:15 80:19 thousand 46:7 thousands 72:13 three 14:11 15:17 16:15 46:4 throw 56:12 69:17 time 24:8 25:22 26:6 32:5,17 42:11 89:24 90:5 timeframe 33:3 37:21,22 times 5:15 71:22 today 6:7,13,17 71:5 todd 1:13 2:14 4:5 5:4,12 91:8 92:4,9 93:4,13 94:20 together 20:1,1 20:14 51:6 65:14 68:10 tonearm 9:16 33:7,8 37:25 39:15,20 58:12 62:16 63:16 68:25 84:12	took 51:25 52:24 top 59:25 66:11 75:17 76:8,21 towards 67:24 track 6:20 62:14 trademark 1:1 2:1 transcribed 90:9 92:7 transcript 90:10,13,15 91:11,12 92:5 92:12 93:5,11 93:17 transmission 29:1,18 transmit 54:17 87:1,14 traverses 33:9 trend 51:16 trial 1:2 2:2 tried 21:15 65:25 true 17:11 38:9 90:11 trust 70:12 try 5:23 41:4 trying 48:16 58:8 64:13 88:7 tuesday 1:15 2:17 5:1	turn 7:18 15:1 17:19 18:1 25:5 30:9,10 32:24 34:7 37:7 39:11,13 39:21 67:7 73:12 75:16 84:6 88:14,15 turnable 39:4,7 turning 15:16 40:9 80:14,15 81:7 turns 11:21 turntable 7:25 8:7,8,9 9:2,7,12 9:15,20,25 10:7,9,11,12,15 10:16,20,23,25 11:10,19,24,25 12:4,6,7,8,16 12:24 13:1,9 33:15 36:13 37:18 38:20,25 39:7 40:11 56:16 61:20 73:23 78:18 79:14,19,23 80:16 81:8 82:20 83:10 84:7,9,9,11,12 84:13,17,20 85:9 86:1 two 6:19 30:20 35:20 50:22 51:25 54:23,25	61:7 62:3 63:14 74:1 type 9:12 42:16 42:19 50:24 types 39:25 41:14 42:1,6 44:10 typical 41:13 42:6 45:21 46:3 typically 85:6
			u
			u.s. 6:14 7:1 78:5,5 uf 31:25 uh 17:2,5 33:17 50:7 55:10 57:22 74:4 ultimately 20:18 um 24:5,6,7,10 24:20 28:13 31:24 61:22 62:20 63:17 under 38:23 90:10 undersigned 90:1 understand 5:25 6:14 14:7 15:18 16:23 20:21 21:23 32:15 37:12 40:2 60:2 67:10 68:12

78:11 84:11 86:5 88:7 understanding 6:6,16 15:11 21:20 22:20 41:13 57:16 60:18 72:25 understands 72:7 understood 8:20 unit 18:8,9,12 19:2,8,18 20:8 24:5,7,10,11,19 24:20,23 25:4 25:6,9,25 26:1 26:8,19,20 27:8 28:12,13 29:13 31:20,22 31:24,25 46:19 49:14,19 51:2 51:2 52:24 53:1,6 55:1 61:5 62:12,13 62:14,15,15,22 63:4,5,9,14,24 64:9,21,24 66:11,13 67:20 77:18 78:19,24 79:14 80:12,16 80:25 81:8,10 81:12,13 82:5 82:20 83:11 united 1:1 2:1 6:7 84:3	units 28:17 54:24 61:7 63:14 64:11 77:20 unpack 45:15 52:13,16 unreasonable 12:2 unusual 52:21 unwieldy 45:6 updated 29:2 29:17 usage 8:12 usb 10:18 12:5 12:6 28:19,21 83:5,5,19,19,19 83:25,25 use 6:13 18:13 22:12 36:10,12 38:19 39:11,25 61:3 63:15 64:6 68:7 73:14,20,22 83:24 84:10 used 10:12 13:19,20 18:21 27:8,11,23 28:4 29:13 32:1 39:14,17 39:22 40:16,18 40:20,22 51:8 69:2 73:16,17 76:17 useful 81:11,16 81:19,23 82:2	uses 34:24 using 23:17 39:19 40:13 53:18 59:1 69:3 90:8 usually 87:2 v v 91:6 92:3 93:3 various 71:21 78:2 vary 44:3,17 vd 30:21 31:2 63:9 venue 41:22 43:3,5,7,9 44:3 44:5,5,9,17 45:2,21 46:3,5 46:5,14 48:9 49:3,6,6,10 54:10 59:4,5 59:16,16,21 61:5 63:21 64:12 69:6,23 71:9 72:7,11 72:18 venues 41:14 41:16 42:1 46:17 verging 42:12 veritext 91:1,7 94:1 veritext.com. 91:17	versus 47:13,14 video 27:18 28:23 51:11 videoconfere... 1:12 2:14 view 15:2,4,7 75:18 viii 7:18,21 vinyl 21:2,4 23:10,15,18,20 34:19 39:23 40:1 63:1 67:23 79:18 virtual 23:11 30:14,20 31:2 31:3,13,17 32:10,12,16,18 32:22 33:18,20 34:8,10,13,20 34:24,25 35:3 35:21,22,25 36:1,13,21,22 36:24,25 37:7 37:16,17 38:19 38:24 39:10,12 39:15 40:4 55:16,23 56:2 56:5,8,13,15 57:4,11,15,19 57:23 58:1,4,7 58:9,11,17,20 59:1,6,8 60:5 61:3,21 62:5,9 62:11,23 64:6 64:7,10,18
---	--	--	---

67:18,19 68:2 68:7 69:19 73:6,10,23 74:5,8 75:1,6 75:13,19 76:18 77:14 volume 1:16 2:15 4:6 38:5 45:20 vs 1:6 2:6	washington 3:7 way 14:2 16:16 20:22 25:20 26:3 31:14 32:1 41:25 45:9 52:3 58:16 66:12 71:10 79:21 80:5 82:3,11 83:1,2,3 we've 13:11 45:15 61:20 80:15 87:8,14 wedding 41:22 44:9 59:5,20 weddings 44:5 44:6 weidner 3:19 weigh 48:22 50:3,5 weighs 48:24 weight 49:14 50:1,20 51:10 51:13 54:24 welk 72:21 whereof 90:19 window 74:24 75:2 wiser 49:23 withdraw 75:11 witness 4:4 10:23 12:22 13:13 25:14,23 26:7 65:18,24	66:6 90:19 91:8,11 92:1,4 92:11 93:1,4 93:15 witnesses 90:6 witness' 91:14 wobble 66:12 wonder 52:11 word 8:17,20 13:19,20 32:25 34:25 39:21 60:13,16 83:24 words 18:13 80:5 83:17 work 41:18,20 41:22 42:3 88:22 worked 15:8 41:10 working 54:15 works 41:14 world 89:12
w	w	y
w 29:10 wait 25:11 waived 91:19 walkman 29:7 29:9,10 want 18:13 19:25 23:1,18 44:10,13 45:2 46:3,7,10,12,12 46:13 49:18 56:3 58:9 61:2 61:15,25 63:7 64:6 67:11 69:16,18,22 70:22 71:7 72:17,19,21,23 74:16,21 88:6 wanted 8:11 49:23 53:23 wanting 53:11 55:17 88:9 wants 53:9 56:10,11 61:2 70:21,24	we've 13:11 45:15 61:20 80:15 87:8,14 wedding 41:22 44:9 59:5,20 weddings 44:5 44:6 weidner 3:19 weigh 48:22 50:3,5 weighs 48:24 weight 49:14 50:1,20 51:10 51:13 54:24 welk 72:21 whereof 90:19 window 74:24 75:2 wiser 49:23 withdraw 75:11 witness 4:4 10:23 12:22 13:13 25:14,23 26:7 65:18,24	66:6 90:19 91:8,11 92:1,4 92:11 93:1,4 93:15 witnesses 90:6 witness' 91:14 wobble 66:12 wonder 52:11 word 8:17,20 13:19,20 32:25 34:25 39:21 60:13,16 83:24 words 18:13 80:5 83:17 work 41:18,20 41:22 42:3 88:22 worked 15:8 41:10 working 54:15 works 41:14 world 89:12 yeah 13:3 14:4 36:4 37:17 39:14 56:22 66:20 68:5 79:11,11 81:15 83:7 86:9 years 14:11 16:15,20 51:17 young 72:25 yup 65:13

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at www.veritext.com.