

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

YEALINK (USA) NETWORK
TECHNOLOGY CO., LTD., and
YEALINK NETWORK TECHNOLOGY
CO., LTD.,

Petitioners,

VS.

BARCO N.V.,

Patent Owner.

Case No.
IPR2024-01437

DEPOSITION OF KEVIN C. ALMEROTH, Ph.D.
Santa Barbara, California
Wednesday, July 2, 2025

Stenographically Reported by:
JUSTYNE N. JOHNSON
RPR, CSR. No. 14301

Job No. 589279

Pages 1-38

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3 The Deposition of KEVIN C. ALMEROOTH, Ph.D., was taken
4 on behalf of Patent Owner, at 1111 East Cabrillo
5 Boulevard, Santa Barbara, California, beginning at 9:29
6 a.m., Pacific time, on July 2, 2025, before JUSTYNE
7 JOHNSON, RPR, Certified Shorthand Reporter No. 14301.
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24
25

INDEX

WITNESS

EXAMINATION

KEVIN C. ALMEROOTH, Ph.D.

BY MR. HALVERSON.....7

1
2
3
4
5
6
7
8
9
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EXHIBITS

(None)

WITNESS INSTRUCTED NOT TO ANSWER

(None)

1 Santa Barbara, California

2 July 2, 2025 | 9:29 a.m.

3

4 THE STENOGRAPHER: Good morning. We are going on
5 the record at 9:29 a.m., on Wednesday, July 2, 2025, in
6 the matter of Yealink (USA) Network Technology Co., Ltd.,
7 et al., v. Barco N.V., Case Number IPR2024-01437. Today's
8 deposition is taking place at 1111 East Cabrillo
9 Boulevard, Santa Barbara, California.

10 My name is Justyne Johnson. I am a California
11 certified shorthand reporter representing the firm Planet
12 Depos, and my certification number is 14301. The deponent
13 is Kevin C. Almeroth, Ph.D.

14 Counsel, can you please introduce yourselves.

15 MR. HALVERSON: Erik Halverson from K&L Gates on
16 behalf of the patent owner Barco N.V.

17 MR. YANG: Stephen Yang from Dentons representing
18 petitioner Yealink and the witness. With me today is
19 Kevin Greenleaf, also from Dentons.

20 THE STENOGRAPHER: Dr. Almeroth, can you raise
21 your right hand, please?

22 ///

23 ///

24 ///

25 ///

1 KEVIN C. ALMEROOTH, Ph.D.,
2 having first been sworn by the Certified Shorthand
3 Reporter, was examined and testified as follows:

4 THE WITNESS: Yes, ma'am, I do.

5
6 EXAMINATION

7 BY MR. HALVERSON:

8 Q Welcome back, Dr. Almeroth.

9 A Thank you.

10 Q Fourth and final of the week. Have any of your
11 opinions about drivers or devices or anything else that
12 we've talked about this week changed since we've
13 previously discussed them?

14 A No.

15 Q Is your background still the same?

16 A Yes.

17 Q Fantastic. Let's dive in.

18 What's a human interface device?

19 A In the context of USB, that's one of the
20 interfaces or modes that a USB device and the device that
21 it's plugged into can communicate.

22 Q Have you heard or come across the phrase "human
23 interface device" not in the context of USB?

24 A I believe I have.

25 Q And in both of those contexts, USB and non-USB,

1 what type of communication occurs -- that's a poorly
2 worded question. Let me try again.

3 What is a human interface allowed for?

4 A Your question is unclear to me for two reasons.
5 One is whether you're asking about HID specifically in the
6 context of USB or more generically? And then the second
7 is when you say "allowed for," in terms of what the USB
8 standard says, I think that would be kind of the
9 authoritative reference on what it would allow for
10 specifically as part of the standard. And then a person
11 of skill in the art could build applications using that
12 interface to basically do just about anything.

13 Q You have the '237 patent in front of you?

14 A I do.

15 Q Can you go to column 6 for me?

16 A Okay.

17 Q Line 65 states that a -- "an HID (human interface
18 device) used for capturing user input, e.g. following a
19 user action such as pressing or activating a button and
20 providing user feedback." And then it goes on.

21 Do you see that?

22 A I see that.

23 Q Is that consistent with your understanding of
24 what a human interface device does?

25 A That is -- and okay. Let me start over. To be

1 clear -- and it -- it goes on. It lists some other
2 things, like for streaming the scraped video content to
3 the network and, hence, geobase unit in the display. That
4 is something that -- the human interface device within the
5 USB spec is something that can be used and was used prior
6 to 2010.

7 A human interface device, as just a general term
8 outside of the context of USB, as an example, I think is a
9 really broad term. It -- outside of the context of the
10 '237 patent, it's just -- I mean, anything could be a
11 human interface device that allows a human to interface
12 with the device. It's got some sort of input.

13 So at least in looking at the prior art, for USB
14 and the human interface device mode, that's I think
15 something that was well-known to do what column 6 at line
16 65, that paragraph describes.

17 Q Is a keyboard a human interface device?

18 A Right. So in the very broadest sense, it's a
19 human interface device. If you're applying a specific
20 requirement from the '237 patent that a human interface
21 device has to also support, for example, streaming the
22 screen-scraped video content to the network, then it
23 wouldn't be a human interface device, if that's the way
24 you're defining it.

25 Q Is a mouse a human interface device?

1 A Same answer.

2 Q Is a flash drive a human interface device?

3 A Same answer.

4 Q What kind of input does a flash drive receive?

5 A Depends on the type of flash drive. It might be
6 a flash drive, like in Umaeda (phonetic), where it's got a
7 switch on it. It's got some sort of input capability to
8 it. And that is, again, applying the broadest sense of
9 where it's just a device that can provide an interface to
10 a human.

11 And I think I said Umaeda (phonetic) --

12 Q You did, which I'm trying to figure out --

13 A -- I meant Uchida.

14 Q Great. I can stop looking for that. Thank you.

15 (Stenographer clarification.)

16 BY MR. HALVERSON:

17 Q Do you have marks Exhibit 1026 in front of you?

18 A I do.

19 Q And I forgot to do that this time, but you've
20 been handed a handful of exhibits that have been already
21 marked along with your declaration in this proceeding. If
22 you need anything else, just ask. Still have boxes of
23 paper available for you behind me (indicating).

24 Recognize Mardiks?

25 A I do.

1 Q Paragraph 3 states, "CD players and USB flash
2 drivers belong to the USB mass storage device class."

3 Do you see that?

4 A I do.

5 Q Goes on to say, "The devices in which class offer
6 functionality not offered by peripheral devices in the
7 human interface device class."

8 Do you see that?

9 A I do.

10 Q This class -- "the class that includes the
11 keyboards."

12 Do you see that?

13 A I do.

14 Q Do you disagree with Mardiks that says that
15 "flash drivers are devices that offer functionality not
16 offered by human interface devices"?

17 A I would agree with that statement if it is
18 referencing the comparison of the different modes of USB
19 and then the functionality. And I mentioned the word
20 "primitives" or instructions that can differ between a
21 mass storage device as an interface and human interface
22 devices as an interface. Subject to the caveat of the
23 testimony I offered earlier about how you can implement a
24 lot of functionality in the application on top of those
25 different interface types.

1 So I could actually agree with what it says in a
2 fairly specific way, but depends on how you apply that
3 statement whether I would agree or disagree with it.

4 Q Can a device operate in two modes at the same
5 time?

6 A It can. We had talked about that previously, I
7 think, on Tuesday, about there's a composite interface.
8 And then certainly, according to references like Ahmed,
9 you could have multiple interfaces using different drivers
10 installed inactive and being used at the same time.

11 Q Is there a type of data that is usually
12 communicated using a human interface device?

13 A I wouldn't say "usually." There -- might
14 consider the intent of the standard as it was originally
15 set forth, but I think, as I've testified, you can use the
16 different interfaces or modes in a lot of different ways
17 for a particular application. And that -- and those were
18 extensive examples of those in the state of the art and in
19 the prior art.

20 Q Do you have Deforche?

21 A I do.

22 Q You talked about this reference a few times this
23 week so far. Anything change in what you've said before?

24 A No.

25 Q So Deforche talks about at least two types of

1 generic drivers and gives examples such as human interface
2 and mass storage device as two types of preinstalled
3 generic drivers; right?

4 A I think you're referencing what's in paragraph
5 10. I think that's part of what 10 says.

6 Q What would lead a person of ordinary skill in the
7 art to utilize a human interface driver instead of a mass
8 storage device driver for a given application?

9 A So in terms of the advantages and disadvantages
10 of the different modes or interfaces for USB, I think a
11 person of skill in the art by 2010 would have been well
12 familiar with those advantages and disadvantages and pros
13 and cons. Generally speaking, the things that would have
14 influenced the particular design choice would have been
15 the primitives or the instructions that were available as
16 part of that interface and set forth in the USB standard,
17 as compared to what the design goals or functions of the
18 application were.

19 In some applications with greater degrees of
20 specific requirements that were only supported by one
21 interface versus another, that might lead a person to use
22 one interface over another as a preference among the
23 possible design choices. If we're talking more
24 generically about data transmission that can be supported
25 by numerous of the interfaces or modes within USB, then it

1 may just be a programmer preference in that context.

2 Q What are some examples of specific requirements
3 that were only supported by one interface versus another?

4 A As I testified to earlier, I don't have the USB
5 spec in mind. And so with respect to what the sets of
6 commands for one interface versus the other interface
7 would be -- but you'd essentially take those different
8 sets, look at the overlap, look at the distinctive aspects
9 of each, and that would give you a decent sense of what
10 some of that functionality would be.

11 You've offered a bevy of printed materials. I
12 suspect the USB standard is not one of those things. But
13 if you have it, I can go through it and sort of perform
14 that exercise for you.

15 Q My bevy is limited to what you provided with your
16 declaration. And so if --

17 A Okay.

18 Q -- you provided the USB standard with your
19 declaration, I have it. I don't believe that you did.
20 And so I don't believe that I have it today. Do you have
21 a reason to think that it is part of the documents that
22 you considered in preparing your declaration?

23 A I don't have reason to believe that.

24 Q I think you had a list. If you look at paragraph
25 32 of your declaration in this proceeding -- begins on

1 page 18. You quickly skim through that, and let me know
2 if you see the USB spec on there.

3 A I don't think it's there. I think it's just part
4 of what was understood to be in the state of the art, and
5 it's referenced in lots of references. But I don't know
6 that it ever made it in as an exhibit. Actually, I don't
7 think it did make it in as an exhibit.

8 Q Is there any prohibition in your mind in using a
9 human interface driver for the transmission of audio
10 information?

11 A It's a little bit of a vague question. I don't
12 believe a person of skill in the art prior to 2010 would
13 have had a belief that there was a limit on how the USB
14 human interface device could be used as it relates to
15 accomplishing the functionality in the claims at issue in
16 the '237 patent.

17 More generally speaking, there could have been
18 prohibitions related to operating systems or the use of
19 the human interface device in particular ways that I don't
20 think would be relevant to this IPR. And I'm not even
21 sure exactly what those prohibitions might be. I suspect
22 it would need to be built into a hypothetical.

23 Q And so I asked that question in context of human
24 interface driver.

25 If I were to ask it again in the context of mass

1 storage device driver or any other kind of generic driver,
2 would the answer be the same?

3 A It would be similar.

4 Q Then let -- let me ask it again and see how it
5 differs.

6 So is there a prohibition, in your mind, in using
7 a mass storage device driver for the transmission of audio
8 information?

9 A The answer is similar. The -- the difference
10 would be if there was a need to accomplish some
11 specialized functionality that wasn't supported by the
12 mass storage device interface. Again, I'm not exactly
13 sure what that would be. It's -- it's a fairly basic set
14 of commands. But it's quite possible there might be some
15 application unrelated to what's claimed in the '237 patent
16 that would have some prohibition.

17 Q Okay. We've used the phrase "composite device" a
18 few times this week. Do you recall that?

19 A Yes.

20 Q What is a composite device?

21 A I don't have a specific definition for you. I
22 think there's one in the USB standard. Generally, it's a
23 USB device that can support a combination of interfaces or
24 modes at the same time.

25 Q And what would be the reason for configuring a

1 device to operate as a composite device, as opposed to a
2 mass storage device?

3 A So a good example of where there would be a need
4 for that or at least a design choice would be, as is
5 described in the Ahmed reference, in terms of having a
6 video stream and an audio stream using separate aspects,
7 separate drivers for a composite device, to be able to
8 treat those streams independently and provide different
9 delivery characteristics for one of the streams using one
10 of the -- the drivers for one aspect of the composite
11 device versus another.

12 So the example, I think, was video versus audio.
13 It could be the same thing for video and audio versus
14 data. Data tends to be less time sensitive but needs to
15 be reliable. So if you're scraping a PowerPoint
16 presentation, you generally can't miss packets and so have
17 to use TCP.

18 So depending on the data, type of the data,
19 delivery requirements, the use of the different
20 instruction sets for the different interfaces in a
21 composite device would have been something a person of
22 skill in the art would have recognized prior to 2010.

23 Q Kaplan in front of you?

24 A Yes, sir.

25 Q How does Kaplan share audio and video content

1 from the computer to the display device?

2 A The declaration goes through and provides some of
3 that detail in the overview section, Section 8.A. And
4 then, in the limitation-by-limitation walk-through, it
5 identifies the aspects of Kaplan that are relevant to the
6 particular aspects of the '237 claims. These claims are a
7 little bit less detailed, have fewer specific requirements
8 than, say, the '002 patent. And so the level of detail in
9 Kaplan on the limitation-by-limitation basis would
10 describe that. You can walk through that -- as much of
11 that as -- as you want.

12 Q What role does the resident software application
13 of Kaplan play in that sharing process?

14 A I do not recall the details of what Kaplan says
15 about its application. I -- I don't have the details of
16 Kaplan memorized to be able to answer that question,
17 sitting here right now.

18 Q Do you recall Kaplan describing an autoplay.INF
19 file?

20 A I recall those words. Whether it's in Kaplan or
21 some other reference, I don't specifically recall.
22 Actually, it's in paragraph 47.

23 Q That's what I was going to say.

24 A So it is Kaplan.

25 Q I'll direct your attention to paragraph 47.

1 You see, in the second half of that, where it
2 refers to an autoplay.INF file?

3 A I see that.

4 Q What is an INF file?

5 A It's a Windows file type. The obvious extension
6 would be interface, but I am not sure if that's correct or
7 not. I don't remember what it -- what it stands for.

8 Q Does setup information file sound right?

9 A I don't recall enough to say yes or no to that
10 question.

11 Q Do you have an understanding of whether or not
12 INF files are used for installing drivers?

13 A Yes and yes.

14 Q There -- yes, you have an understanding?

15 A Yes, I have an understanding. And they are.

16 Q Okay.

17 A That was the second yes.

18 Q Jumping the gun, man.

19 A Sorry.

20 Q And so on what device is the INF file of Kaplan
21 being used to install a driver? Well, I guess, let me ask
22 a question before that. Sorry.

23 Do you have an understanding of whether or not
24 INF files are used to do anything else?

25 A I don't recall the full set of functionality the

1 INF files can be used for. I think it's kind of a
2 standard part of Windows.

3 Q And so you have an understanding of on which
4 device of Kaplan the INF file is being used to install a
5 driver?

6 A So paragraph 47 is talking about a particular
7 embodiment, and in that embodiment, it describes a
8 scenario where the autoplay.INF file, upon detecting a
9 connection between the transmitter and the computer, that
10 file can direct the operating system of the computer to be
11 able to -- I think, in this case, just execute the
12 resident software application.

13 And the resident software application is
14 described in the embodiment as being stored in the
15 nonvolatile memory 420 of the transmitter 120.

16 Q The paragraph concludes by saying, "The operating
17 system of computer 220 then executes the resident software
18 application"; right?

19 A That's what it says.

20 Q The next paragraph begins with a check of
21 computer 220 to determine whether required software
22 components are available, and it describes the
23 installation of those software components.

24 Do you have an understanding of what those
25 required software components are?

1 A In the context of the '237 patent, I don't think
2 I've looked to -- never offered an opinion as to what
3 those required software components are. If I am
4 misremembering some reference to paragraph 48 in the
5 declaration, you can point me to it.

6 Q Kaplan has a transmitter dongle that you plug
7 into a machine; right?

8 A Yes. Like, a computer. There's an example in
9 figure 2 of that.

10 Q And do you know how Kaplan's transmitter presents
11 itself or what class of device it presents itself as?

12 A My recollection of Kaplan is it just describes
13 that it's USB. It doesn't identify the particular way or
14 the particular interface or mode for USB that's used,
15 which I think is, in part, where the combination with
16 Mardiks comes in.

17 Q So looking back at 47 and back at the
18 autoplay.INF file, we had talked about INF files being
19 used for the installation of device drivers.

20 You see anything in 47 that suggests it is being
21 used for the installation of a device driver?

22 MR. YANG: I think I'll object to the form on
23 that one. I think counsel is mischaracterizing that.

24 But go ahead if you can answer.

25 THE WITNESS: I don't recall that we -- we

1 reached an agreement on what this autoplay INF was
2 supposed to be doing. And I don't recall looking at
3 paragraph 47 for that purpose in the context of this IPR.
4 If I'm misremembering some analysis of those paragraphs
5 along the line that you're asking questions about from the
6 declaration, then I'd have to go look at those paragraphs
7 to refresh my recollection.

8 THE STENOGRAPHER: Counsel, can we go on a brief
9 break?

10 MR. HALVERSON: Sure.

11 MR. YANG: Sure.

12 THE STENOGRAPHER: Off record at 10:02.

13 (Off the record.)

14 THE STENOGRAPHER: Back on the record at
15 10:08 a.m.

16 BY MR. HALVERSON:

17 Q Would you consider the autoplay.INF aspect of
18 Kaplan to be an important part of Kaplan's disclosure?

19 A I'm not sure of how I would consider the question
20 of its importance, what metric you're using to determine
21 whether or not it's important. It is described in the
22 context of in one embodiment, and then 48 is in some
23 embodiments. So I think it gives some flexibility to a
24 person of skill in the art to understand different ways in
25 which the ultimate goal, as expressed in those paragraphs,

1 can be accomplished.

2 Q What is keystroke emulation?

3 A It's a pretty generic term. I don't recall it
4 coming up from the context of the claims for the
5 '237 patent. So outside of that context, it's really just
6 the keys that get typed, reproducing those or emulating
7 those, simulating, making it seem apparent that keystrokes
8 were being entered.

9 Q What is the difference between simulating and
10 emulating?

11 A Emulating would usually refer to a scenario where
12 you're using the actual system itself and generating
13 keystrokes as part of, say, a test, for example. There's
14 other reasons you might do emulation. Simulation would be
15 purely virtual in the sense of simulating what the
16 functionality is, as opposed to actually using a system.

17 Q And so when you say "generating keystrokes," are
18 there actual keys being struck?

19 A In an emulator, they need not be. It depends on,
20 really, the context in which that term is used. There's
21 not some standard definition that defines how a keystroke
22 emulator would work.

23 Q How about in the context of Mardiks?

24 A I don't recall what Mardiks says about a
25 keystroke emulator.

1 Q Would you consider Mardiks's USB device to be a
2 peripheral device?

3 A The first sentence of the ab -- of the abstract
4 of Mardiks says "a USB peripheral device." So it uses the
5 term "peripheral device." So if you're asking that
6 question in a general sense, beyond the specific
7 requirements of what a peripheral device needs to be, as
8 expressed in the claims of the '237 patent, I don't see
9 any reason why it wouldn't be a peripheral device in that
10 general sense.

11 If you're asking about specific requirements of
12 the '237 patent and what it says about a peripheral
13 device, I don't think I've relied on the UC -- USB
14 peripheral device specifically as the thing that meets all
15 of the requirements of the claims at issue for the 27 --
16 '237 IPR. That more comes from Kaplan as the base
17 reference.

18 Q Is there a transmitter in the USB peripheral of
19 Mardiks?

20 A I don't recall if there is or not. It's not what
21 I relied on for the transmitter in the combination. I
22 think the declaration makes it clear that comes from
23 Kaplan in that ground.

24 Q Is there a driver described in Mardiks?

25 A My recollection is that there are USB drivers

1 described in Mardiks.

2 Q And is that because the phrase "USB" appears? Or
3 do you recall an additional discussion, a more detailed
4 description of the drivers of Mardiks?

5 A I don't recall if the word "driver" appears. You
6 can do a search, but, certainly, in the context of USB
7 and, certainly, from the purposes of the human interface
8 device, I think is one of the reasons I've relied on
9 Mardiks in the combination of -- with Kaplan.

10 Q Do you know what class of peripheral the Mardiks
11 USB device presents itself as?

12 A That's what I thought was the human interface
13 device.

14 Q And so --

15 A Sorry. Let me just --

16 Q -- par --

17 A I think this is paragraph 87 of my declaration.
18 "However, a POSITA would have found that Mardiks discloses
19 a method and peripheral device which presents itself as a
20 human interface device."

21 And it goes on from there.

22 Q And so you cite to a handful of paragraphs from
23 Mardiks there.

24 Do you see that?

25 A I do.

1 Q I don't see that in Mardiks, and I'm curious as
2 to which of those paragraphs you think suggests that.

3 A So I think paragraph 6 and 8 provide some context
4 for what Mardiks is describing. And then when you get to
5 paragraph 27 through 30, here's where it describes the
6 flowchart of 2A as walking through the steps described
7 here. And it identifies it as a USB peripheral device.
8 The host then reads the class of the USB peripheral
9 device, which is set to be that of a keyboard. That
10 keyboard would use the USB human interface device driver.
11 That's what a person of skill in the art would understand
12 reading that portion of Mardiks.

13 Q Sorry. Which portion was that?

14 A That was from paragraph 28 of Mardiks. And then
15 it walks through the rest of figure 2A in terms of the
16 processes that are used between USB peripheral device and
17 the keyboard -- being set as a keyboard, and then using
18 the human interface device mode or interface of USB. And
19 that's essentially what the rest of paragraph 87 goes
20 into.

21 Q Does the fact that a start-up script is accessed
22 from the ROM of the USB device suggest that perhaps this
23 is then a composite device because it may present itself
24 as both a human interface device and a mass storage
25 device?

1 A I think a person of skill in the art reading this
2 could understand you could implement the USB peripheral
3 device's association with the computer using a composite
4 mode or interface. That's certainly a design choice
5 within the different modes supported by USB. The more
6 likely one, given it's described as a keyboard, would be
7 the human interface device.

8 Q Can you launch software from a human interface
9 device?

10 A In a general sense, I don't see any reason why
11 you couldn't design a system that would be able to do
12 that.

13 Q How does Mardakis [sic] describe how its
14 keystrokes are emulated?

15 THE STENOGRAPHER: What was that name?

16 MR. HALVERSON: Mardakis?

17 MR. YANG: Mardiks.

18 MR. HALVERSON: Mm. I pulled a Steve and added a
19 syllable. Mardiks.

20 MR. YANG: Oh, gee, thanks.

21 MR. HALVERSON: Let me ask that again.

22 BY MR. HALVERSON:

23 Q How does Mardiks describe how its keystrokes are
24 emulated?

25 A I don't think it describes specifically how they

1 are emulated, just that they are emulated. It says, "A
2 stream of emulated keystrokes is sent from the USB
3 peripheral device to the host." So you could use any one
4 of a set of techniques known to a person of skill in the
5 art. Typically a keystroke is represented as some sort of
6 encoded character string. And so those could be sent as
7 an encoded character string to the point of making the
8 host think that there was an actual keyboard that had
9 someone actually entering or typing those keys.

10 Q What is "VBScript" in paragraph 33?

11 A Start... I don't recall specifically what that is
12 other than what the description in Mardiks says about it.

13 Q What would be a reason to use emulated keystrokes
14 rather than a .INF file to execute software?

15 A So I think that they're basically design choices
16 with respect to known ways of accomplishing the goal of
17 getting a host to do something at the behest of the
18 peripheral device. There might be reasons to use one
19 technique versus another. The two examples here -- or
20 sorry. The example here of Microsoft Windows in VBScript
21 is something that was, as this describes, a functionality
22 that was part of Windows. If you had a different
23 operating system, you might use a different technique.

24 But from a POSITA's perspective or a programmer's
25 perspective, being able to implement functionality where

1 upon inserting a USB device into a computer, the goal of
2 getting the computer to perform certain actions can be
3 implemented using various programing techniques --

4 Q Do you know when --

5 A -- which would --

6 Q Or I'm sorry.

7 A -- that would have been known to a person skilled
8 in the art in 2010.

9 Q Do you know when VBScript was shut down?

10 A I do not. It says it was supported in Windows
11 version 2000. I don't recall if it was supported in later
12 versions of Windows or when those particular operating
13 systems reached end of life.

14 Q Would you consider using VBScript a preferred
15 option to using something like that .INF file that we were
16 talking about earlier?

17 A It might be preferred in some scenarios, but
18 ultimately it's a design choice. It's really just
19 literally a different programming language for
20 implementing the same kinds of functionality. One might
21 implement different functionality than the other, but at
22 least from the perspective of what would be required by
23 any claim in the '237 set of asserted -- or claims at
24 issue in this IPR, I don't think there's any meaningful
25 distinction between the two as an option or a design

1 choice.

2 Q Is using a .INF file more streamlined than using
3 keystroke emulation?

4 A I'm not sure what metric you would use for "more
5 streamlined." There are pros and cons to either technique
6 from the perspective of what's required by the '237
7 claims. I don't think there is a streamlining requirement
8 in the claims. And so, ultimately, both would be obvious
9 options to try.

10 Q Do you -- sorry. Is using a .INF file more
11 user-friendly than using keystroke emulation?

12 A Again, from the perspective of more
13 user-friendly, I'm not sure what the metric would be for
14 comparison. As I've testified to, I think there are pros
15 and cons of each. Those would have been understood to a
16 person of skill in the art. They ultimately become just
17 different programming techniques for accomplishing the
18 same function or similar functions.

19 And then from the perspective of the '237 claims,
20 which I've really relied on Mardiks for the human
21 interface device aspect of USB, there isn't really a
22 difference in the use of INF files or VBScript that goes
23 to more of an unrelated implementation.

24 Q Would a person of ordinary skill in the art
25 interpret Mardiks as modifying USB standard operation?

1 A In the context that I've relied on it in the '237
2 claims, no.

3 Q Remember talking about Maeda's wireless LAN card
4 earlier this week?

5 A Yes.

6 Q I don't remember if I asked this or not. So if I
7 did, I apologize. But do you know, is that card
8 preinstalled on the PC or is it a user-addable card?

9 (Stenographer clarification.)

10 MR. YANG: We get the point.

11 THE WITNESS: You asked something like that
12 earlier this week about at least one of the references.
13 My recollection is I pointed to a couple of different
14 aspects of the reference in probably Maeda where it talks
15 about something like upon inserting that wireless
16 transmitter. We had looked at the figure 1 and it showed
17 10. That looked like a card that would be slotted into
18 some sort of port on the computer 100, and I think I had
19 identified a couple of paragraphs that described that.

20 BY MR. HALVERSON:

21 Q Do you recall where?

22 A I do not. Let me see if I can find those again.

23 Q I'm not seeing "port." And there aren't a lot of
24 instances of LAN card 10 being discussed.

25 A I don't remember which paragraphs it was that I

1 had pointed to. But I think I had described a person of
2 skill in the art looking at the figures and looking at the
3 associated text would understand that the 10 is something
4 that could be inserted and removed from the computer 100.
5 And then I think I had also said it -- I didn't recall, at
6 least in the context of that patent and that claim,
7 whether or not being able to remove 10 was a requirement
8 of the claims.

9 Q Do you have an understanding of how the LAN card
10 presents itself to computer 100 or PC100 in Maeda? Is it
11 a human interface device, a molecular (phonetic) device,
12 or a mass storage device?

13 A So you used the term "LAN card." I think I said
14 it looked kind of like a card that you could be
15 inserted -- that could be inserted into a slot or port of
16 the computer. I mean, the terminology it uses is -- what
17 was it? -- the transmitter. As to how it presents
18 itself...

19 Q So in the interest of full disclosure, paragraph
20 80 of Maeda refers to element 10 as the wireless LAN card.

21 A Okay. Well then, that certainly goes a long way
22 to suggesting to a person of skill in the art that as a
23 LAN card, it's something that could be inserted and
24 removed.

25 Q Do you know, does your Dell laptop (indicating)

1 have a graphics card in it?

2 A Depends on how narrowly or precisely you would
3 want to define the term "card." As I testified to
4 earlier, it's -- the concept of a card in terms of
5 something that you could slot into a computer is a little
6 bit older terminology. And so inside of a PC chassis, it
7 would have a PCI bus with a slot, and you'd insert, like,
8 a VGA display card. Now, I think it's largely systems on
9 a chip, as you referenced earlier in the week.

10 Q And do you know, does Maeda describe the
11 installation of a driver for communication between its PC
12 and its wireless LAN card?

13 A At least in claim 1 of the '237 patent, I don't
14 see a reference to a driver. That might actually be a
15 requirement in the context of other patents and claims,
16 and so at least for Maeda for the '237, I don't recall a
17 limitation where I would have needed to point to support
18 in Maeda for that concept. To the extent I'm
19 misremembering what's in the declaration, I would defer to
20 what's there.

21 Q Do you still have Deforche in front of you, 1030?

22 A I do.

23 Q Do you know how the USB device of Deforche
24 presents itself?

25 A If by "presents itself," if you mean by what USB

1 interface, I think this was in paragraph 10.

2 Q Of?

3 A Deforche.

4 Q Thank you.

5 A This is where it talks about an example is a
6 human interface driver, HID; a mass storage device; MSD
7 driver. I thought there was some portions of Deforche
8 that talked about composite devices. That's in paragraph
9 36. And I think we read in that acronym-laden sentence at
10 the end of paragraph 36 at some point.

11 Q Would a person of ordinary skill in the art
12 understand any of the elements of Deforche to be a base
13 node as that term is used?

14 A I don't recall attempting to answer that question
15 specifically. In the '237 Ground 2 where I've relied on
16 Deforche, I believe I've relied on Maeda for any reference
17 to a base node. But consistent with testimony earlier
18 this week, I did draw a comparison between the general
19 components of the architectures of the various references,
20 including Maeda and Deforche. But I didn't specifically
21 rely on the functionality of a component in Deforche as
22 the base node in the '237 claim elements.

23 Q Is --

24 A To my recollection.

25 Q Does Deforche discuss the communication of audio

1 data?

2 A I don't recall if it does or not.

3 Q How about video data?

4 A Same answer. Again, it's not what I relied on
5 the reference for. But there might be some disclosure in
6 there that would teach or suggest to a person of skill in
7 the art that that's the type of data that can be
8 communicated.

9 Q I want to go back to Mardiks for a second.

10 A Okay.

11 Q On keystroke emulation...

12 A Okay.

13 Q I think you had said that Mardiks doesn't provide
14 a requirement for how the keystroke emulation is
15 generated, only that a stream of emulated keystrokes is
16 sent and used. If I butchered that, please fix it.

17 But do you recall that discussion?

18 A I recall the discussion. I do think you
19 butchered it. I'm not sure how to fix it. It's what I
20 said when we talked about this previously. I think, at a
21 minimum, I said that I didn't recall if there was or was
22 not, but at least in the paragraphs we were looking at at
23 the time, I didn't see anything.

24 Q How can keystrokes -- sorry. How can emulated
25 keystrokes be generated?

1 A With a programming primitive that would identify
2 the code for the keystroke and send that, as opposed to
3 detecting it through the keyboard.

4 Q And so the idea there being, when I hit the L key
5 on my keyboard, the -- a signal is sent to the processor
6 of my computer that indicates that the L key has been hit;
7 right?

8 A Yes.

9 Q At a very high level?

10 A At a very high level, yes.

11 Q And so instead of generating that signal that
12 indicates the L key has been hit upon the hitting of the L
13 key, that same signal could be generated using software
14 that would then inform the processor that the L key has
15 been hit even though the L key has not actually been hit;
16 is that right?

17 A That's one way to do it.

18 Q Are there other ways to do it?

19 A In terms of implementing it, sure. There could
20 be other ways of doing it.

21 Q How?

22 A But, I mean, the level that you've described that
23 functionality at is high enough to encompass various
24 techniques to implement it.

25 MR. HALVERSON: You want to give me five minutes?

1 A Sure.

2 MR. YANG: Yes. Yes.

3 THE STENOGRAPHER: Off the record at 10:41 a.m.

4 (Off the record.)

5 THE STENOGRAPHER: Back on record at 10:50 a.m.

6 MR. HALVERSON: Pending anything else,

7 Dr. Almeroth, from Mr. Yang, I have nothing else today.

8 MR. YANG: I do not have any questions for you.

9 Thank you.

10 THE STENOGRAPHER: Off the record at 10:50 a.m.

11 (Time noted 10:50 a.m.)

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STATE OF CALIFORNIA

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CERTIFICATE OF REPORTER

I, JUSTYNE N. JOHNSON, do hereby certify that the witness in the foregoing deposition was by me duly affirmed to tell the truth, the whole truth and nothing but the truth in the within-entitled cause; that said deposition was taken at the time and place therein stated; that the testimony of said witness was reported by me and was thereafter transcribed under my direction and supervision; that the foregoing is a full, complete and true record of said testimony; that the witness was given an opportunity to read and, if necessary, correct said deposition and to subscribe the same.

I further certify that I am not of counsel or attorney for any of the parties in the foregoing deposition and caption named, or in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 2nd day of July, 2025.

Justyne Johnson

JUSTYNE N. JOHNSON, CSR NO. 14301

A			
ab	28:8	9:21, 32:5	applications
24:3	actually	americas	8:11, 13:19
able	12:1, 15:6,	3:17	apply
17:7, 18:16,	18:22, 23:16,	among	12:2
20:11, 27:11,	28:9, 33:14,	13:22	applying
28:25, 32:7	36:15	analysis	9:19, 10:8
about	added	22:4	architectures
7:11, 7:12,	27:18	another	34:19
8:5, 8:12,	additional	13:21, 13:22,	aren't
11:23, 12:6,	25:3	14:3, 17:11,	31:23
12:7, 12:22,	advantages	28:19	art
12:25, 13:24,	13:9, 13:12	answer	8:11, 9:13,
18:15, 20:6,	affirmed	5:4, 10:1,	12:18, 12:19,
21:18, 22:5,	38:9	10:3, 16:2,	13:7, 13:11,
23:23, 23:24,	again	16:9, 18:16,	15:4, 15:12,
24:11, 24:12,	8:2, 10:8,	21:24, 34:14,	17:22, 22:24,
28:12, 29:16,	15:25, 16:4,	35:4	26:11, 27:1,
31:3, 31:12,	16:12, 27:21,	any	28:5, 29:8,
31:15, 34:5,	30:12, 31:22,	7:10, 15:8,	30:16, 30:24,
34:8, 35:3,	35:4	16:1, 24:9,	32:2, 32:22,
35:20	agree	27:10, 28:3,	34:11, 35:7
abstract	11:17, 12:1,	29:23, 29:24,	asked
24:3	12:3	34:12, 34:16,	15:23, 31:6,
accessed	agreement	37:8, 38:19,	31:11
26:21	22:1	38:20	asking
accomplish	ahead	anything	8:5, 22:5,
16:10	21:24	7:11, 8:12,	24:5, 24:11
accomplished	ahmed	9:10, 10:22,	aspect
23:1	12:8, 17:5	12:23, 19:24,	17:10, 22:17,
accomplishing	al	21:20, 35:23,	30:21
15:15, 28:16,	6:7	37:6	aspects
30:17	all	apologize	14:8, 17:6,
according	24:14	31:7	18:5, 18:6,
12:8	allow	apparent	31:14
acronym-laden	8:9	23:7	asserted
34:9	allowed	appeal	29:23
across	8:3, 8:7	1:2	associated
7:22	allows	appearances	32:3
action	9:11	3:1	association
8:19	almeroth	appears	27:3
actions	1:22, 2:3, 4:3,	25:2, 25:5	attempting
29:2	6:13, 6:20, 7:1,	application	34:14
activating	7:8, 37:7	11:24, 12:17,	attention
8:19	along	13:8, 13:18,	18:25
actual	10:21, 22:5	16:15, 18:12,	attorney
23:12, 23:18,	already	18:15, 20:12,	3:6, 3:16,
	10:20	20:13	38:19
	also	application"	audio
	3:21, 6:19,	20:18	15:9, 16:7,

17:6, 17:12, 17:13, 17:25, 34:25 authoritative 8:9 autoplay 18:18, 19:2, 20:8, 21:18, 22:1, 22:17 available 10:23, 13:15, 20:22 avenue 3:17 B back 7:8, 21:17, 22:14, 35:9, 37:5 background 7:15 barbara 1:24, 2:5, 6:1, 6:9 barco 1:14, 6:7, 6:16 base 24:16, 34:12, 34:17, 34:22 basic 16:13 basically 8:12, 28:15 basis 18:9 because 25:2, 26:23 become 30:16 been 7:2, 10:20, 13:11, 13:14, 15:17, 17:21, 29:7, 30:15, 36:6, 36:12, 36:15 before 1:2, 2:6,	12:23, 19:22 beginning 2:5 begins 14:25, 20:20 behalf 2:4, 6:16 behest 28:17 behind 10:23 being 12:10, 19:21, 20:4, 20:14, 21:18, 21:20, 23:8, 23:18, 26:17, 28:25, 31:24, 32:7, 36:4 belief 15:13 believe 7:24, 14:19, 14:20, 14:23, 15:12, 34:16 belong 11:2 between 11:20, 20:9, 23:9, 26:16, 29:25, 33:11, 34:18 bevy 14:11, 14:15 beyond 24:6 bit 15:11, 18:7, 33:6 board 1:2 both 7:25, 26:24, 30:8 boulevard 2:5, 6:9 boxes 10:22	break 22:9 brief 22:8 broad 9:9 broadest 9:18, 10:8 build 8:11 built 15:22 bus 33:7 butchered 35:16, 35:19 button 8:19 C cabrillo 2:4, 6:8 california 1:24, 2:5, 3:9, 6:1, 6:9, 6:10, 38:2 can't 17:16 capability 10:7 caption 38:20, 38:21 capturing 8:18 card 31:3, 31:7, 31:8, 31:17, 31:24, 32:9, 32:13, 32:14, 32:20, 32:23, 33:1, 33:3, 33:4, 33:8, 33:12 case 1:9, 6:7, 20:11 cause 38:10, 38:21 caveat 11:22	cd 11:1 center 3:7 certain 29:2 certainly 12:8, 25:6, 25:7, 27:4, 32:21 certificate 38:5 certification 6:12 certified 2:7, 6:11, 7:2 certify 38:7, 38:18 change 12:23 changed 7:12 character 28:6, 28:7 characteristics 17:9 chassis 33:6 check 20:20 chip 33:9 choice 13:14, 17:4, 27:4, 29:18, 30:1 choices 13:23, 28:15 cite 25:22 claim 29:23, 32:6, 33:13, 34:22 claimed 16:15 claims 15:15, 18:6, 23:4, 24:8,
--	--	---	---

24:15, 29:23, 30:7, 30:8, 30:19, 31:2, 32:8, 33:15 clarification 10:15, 31:9 class 11:2, 11:5, 11:7, 11:10, 21:11, 25:10, 26:8 clear 9:1, 24:22 code 36:2 column 8:15, 9:15 com 3:10, 3:19 combination 16:23, 21:15, 24:21, 25:9 come 7:22 comes 21:16, 24:16, 24:22 coming 23:4 commands 14:6, 16:14 communicate 7:21 communicated 12:12, 35:8 communication 8:1, 33:11, 34:25 compared 13:17 comparison 11:18, 30:14, 34:18 complete 38:14 component 34:21 components 20:22, 20:23,	20:25, 21:3, 34:19 composite 12:7, 16:17, 16:20, 17:1, 17:7, 17:10, 17:21, 26:23, 27:3, 34:8 computer 18:1, 20:9, 20:10, 20:17, 20:21, 21:8, 27:3, 29:1, 29:2, 31:18, 32:4, 32:10, 32:16, 33:5, 36:6 concept 33:4, 33:18 concludes 20:16 configuring 16:25 connection 20:9 cons 13:13, 30:5, 30:15 consider 12:14, 22:17, 22:19, 24:1, 29:14 considered 14:22 consistent 8:23, 34:17 content 9:2, 9:22, 17:25 context 7:19, 7:23, 8:6, 9:8, 9:9, 14:1, 15:23, 15:25, 21:1, 22:3, 22:22, 23:4, 23:5, 23:20, 23:23, 25:6, 26:3,	31:1, 32:6, 33:15 contexts 7:25 correct 19:6, 38:16 could 8:11, 9:10, 12:1, 12:9, 15:14, 15:17, 17:13, 27:2, 28:3, 28:6, 32:4, 32:14, 32:15, 32:23, 33:5, 36:13, 36:19 couldn't 27:11 counsel 6:14, 21:23, 22:8, 38:18 couple 31:13, 31:19 csr 1:34, 38:26 curious 26:1 D data 12:11, 13:24, 17:14, 17:18, 35:1, 35:3, 35:7 day 38:23 decent 14:9 declaration 10:21, 14:16, 14:19, 14:22, 14:25, 18:2, 21:5, 22:6, 24:22, 25:17, 33:19 defer 33:19 define 33:3	defines 23:21 defining 9:24 definition 16:21, 23:21 deforche 12:20, 12:25, 33:21, 33:23, 34:3, 34:7, 34:12, 34:16, 34:20, 34:21, 34:25 degrees 13:19 delivery 17:9, 17:19 dell 32:25 dentons 3:14, 3:22, 6:17, 6:19 depending 17:18 depends 10:5, 12:2, 23:19, 33:2 deponent 6:12 depos 6:12 deposition 1:22, 2:3, 6:8, 38:8, 38:11, 38:17, 38:20 describe 18:10, 27:13, 27:23, 33:10 described 17:5, 20:14, 22:21, 24:24, 25:1, 26:6, 27:6, 31:19, 32:1, 36:22 describes 9:16, 20:7, 20:22, 21:12, 26:5, 27:25,
--	--	---	---

28:21 describing 18:18, 26:4 description 25:4, 28:12 design 13:14, 13:17, 13:23, 17:4, 27:4, 27:11, 28:15, 29:18, 29:25 detail 18:3, 18:8 detailed 18:7, 25:3 details 18:14, 18:15 detecting 20:8, 36:3 determine 20:21, 22:20 device 7:18, 7:20, 7:23, 8:18, 8:24, 9:4, 9:7, 9:11, 9:12, 9:14, 9:17, 9:19, 9:21, 9:23, 9:25, 10:2, 10:9, 11:2, 11:7, 11:21, 12:4, 12:12, 13:2, 13:8, 15:14, 15:19, 16:1, 16:7, 16:12, 16:17, 16:20, 16:23, 17:1, 17:2, 17:7, 17:11, 17:21, 18:1, 19:20, 20:4, 21:11, 21:19, 21:21, 24:1, 24:2, 24:4, 24:5, 24:7, 24:9, 24:13, 24:14, 25:8, 25:11,	25:13, 25:19, 25:20, 26:7, 26:9, 26:10, 26:16, 26:18, 26:22, 26:23, 26:24, 26:25, 27:7, 27:9, 28:3, 28:18, 29:1, 30:21, 32:11, 32:12, 33:23, 34:6 device's 27:3 devices 7:11, 11:5, 11:6, 11:15, 11:16, 11:22, 34:8 differ 11:20 difference 16:9, 23:9, 30:22 different 11:18, 11:25, 12:9, 12:16, 13:10, 14:7, 17:8, 17:19, 17:20, 22:24, 27:5, 28:22, 28:23, 29:19, 29:21, 30:17, 31:13 differs 16:5 direct 18:25, 20:10 direction 38:13 disadvantages 13:9, 13:12 disagree 11:14, 12:3 discloses 25:18 disclosure 22:18, 32:19, 35:5	discuss 34:25 discussed 7:13, 31:24 discussion 25:3, 35:17, 35:18 display 9:3, 18:1, 33:8 distinction 29:25 distinctive 14:8 dive 7:17 documents 14:21 doing 22:2, 36:20 dongle 21:6 down 29:9 dr 6:20, 7:8, 37:7 draw 34:18 drive 10:2, 10:4, 10:5, 10:6 driver 13:7, 13:8, 15:9, 15:24, 16:1, 16:7, 19:21, 20:5, 21:21, 24:24, 25:5, 26:10, 33:11, 33:14, 34:6, 34:7 drivers 7:11, 11:2, 11:15, 12:9, 13:1, 13:3, 17:7, 17:10, 19:12, 21:19, 24:25, 25:4 duly 38:8	E each 14:9, 30:15 earlier 11:23, 14:4, 29:16, 31:4, 31:12, 33:4, 33:9, 34:17 east 2:4, 6:8 either 30:5 element 32:20 elements 34:12, 34:22 else 7:11, 10:22, 19:24, 37:6, 37:7 embarcadero 3:7 embodiment 20:7, 20:14, 22:22 embodiments 22:23 emulated 27:14, 27:24, 28:1, 28:2, 28:13, 35:15, 35:24 emulating 23:6, 23:10, 23:11 emulation 23:2, 23:14, 30:3, 30:11, 35:11, 35:14 emulator 23:19, 23:22, 23:25 encoded 28:6, 28:7 encompass 36:23 end 29:13, 34:10
--	--	--	--

enough 19:9, 36:23 entered 23:8 entering 28:9 erik 3:5, 3:10, 6:15 esq 3:5, 3:15 essentially 14:7, 26:19 et 6:7 even 15:20, 36:15 ever 15:6 exactly 15:21, 16:12 examination 4:2, 7:6 examined 7:3 example 9:8, 9:21, 17:3, 17:12, 21:8, 23:13, 28:20, 34:5 examples 12:18, 13:1, 14:2, 28:19 execute 20:11, 28:14 executes 20:17 exercise 14:14 exhibit 10:17, 15:6, 15:7 exhibits 5:1, 10:20 expressed 22:25, 24:8 extension 19:5 extensive 12:18	extent 33:18 F fact 26:21 fairly 12:2, 16:13 familiar 13:12 fantastic 7:17 far 12:23 feedback 8:20 few 12:22, 16:18 fewer 18:7 figure 10:12, 21:9, 26:15, 31:16 figures 32:2 file 18:19, 19:2, 19:4, 19:5, 19:8, 19:20, 20:4, 20:8, 20:10, 21:18, 28:14, 29:15, 30:2, 30:10 files 19:12, 19:24, 20:1, 21:18, 30:22 final 7:10 find 31:22 firm 6:11 first 7:2, 24:3 five 36:25 fix 35:16, 35:19	flash 10:2, 10:4, 10:5, 10:6, 11:1, 11:15 flexibility 22:23 flowchart 26:6 following 8:18 follows 7:3 foregoing 38:8, 38:14, 38:19 forgot 10:19 form 21:22 forth 12:15, 13:16 found 25:18 fourth 7:10 francisco 3:9 front 8:13, 10:17, 17:23, 33:21 full 19:25, 32:19, 38:14 function 30:18 functionality 11:6, 11:15, 11:19, 11:24, 14:10, 15:15, 16:11, 19:25, 23:16, 28:21, 28:25, 29:20, 29:21, 34:21, 36:23 functions 13:17, 30:18 further 38:18	G gates 3:4, 6:15 gee 27:20 general 9:7, 24:6, 24:10, 27:10, 34:18 generally 13:13, 15:17, 16:22, 17:16 generated 35:15, 35:25, 36:13 generating 23:12, 23:17, 36:11 generic 13:1, 13:3, 16:1, 23:3 generically 8:6, 13:24 geobase 9:3 getting 28:17, 29:2 give 14:9, 36:25 given 13:8, 27:6, 38:15 gives 13:1, 22:23 go 8:15, 14:13, 21:24, 22:6, 22:8, 35:9 goal 22:25, 28:16, 29:1 goals 13:17 goes 8:20, 9:1, 11:5, 18:2, 25:21, 26:19,
---	---	--	---

30:22, 32:21 going 6:4, 18:23 good 6:4, 17:3 graphics 33:1 great 10:14 greater 13:19 greenleaf 3:22, 6:19 ground 24:23, 34:15 guess 19:21 gun 19:18	hereby 38:7 hereunto 38:22 hid 8:5, 8:17, 34:6 high 36:9, 36:10, 36:23 hit 36:4, 36:6, 36:12, 36:15 hitting 36:12 host 26:8, 28:3, 28:8, 28:17 however 25:18 human 7:18, 7:22, 8:3, 8:17, 8:24, 9:4, 9:7, 9:11, 9:14, 9:17, 9:19, 9:20, 9:23, 9:25, 10:2, 10:10, 11:7, 11:16, 11:21, 12:12, 13:1, 13:7, 15:9, 15:14, 15:19, 15:23, 25:7, 25:12, 25:20, 26:10, 26:18, 26:24, 27:7, 27:8, 30:20, 32:11, 34:6 hypothetical 15:22	identify 21:13, 36:1 implement 11:23, 27:2, 28:25, 29:21, 36:24 implementation 30:23 implemented 29:3 implementing 29:20, 36:19 importance 22:20 important 22:18, 22:21 inactive 12:10 includes 11:10 including 34:20 independently 17:8 index 4:1 indicates 36:6, 36:12 indicating 10:23, 32:25 inf 18:18, 19:2, 19:4, 19:12, 19:20, 19:24, 20:1, 20:4, 20:8, 21:18, 22:1, 22:17, 28:14, 29:15, 30:2, 30:10, 30:22 influenced 13:14 inform 36:14 information 15:10, 16:8, 19:8 input 8:18, 9:12,	10:4, 10:7 insert 33:7 inserted 32:4, 32:15, 32:23 inserting 29:1, 31:15 inside 33:6 install 19:21, 20:4 installation 20:23, 21:19, 21:21, 33:11 installed 12:10 installing 19:12 instances 31:24 instead 13:7, 36:11 instructed 5:4 instruction 17:20 instructions 11:20, 13:15 intent 12:14 interest 32:19 interested 38:20 interface 7:18, 7:23, 8:3, 8:12, 8:17, 8:24, 9:4, 9:7, 9:11, 9:14, 9:17, 9:19, 9:20, 9:23, 9:25, 10:2, 10:9, 11:7, 11:16, 11:21, 11:22, 11:25, 12:7, 12:12, 13:1, 13:7,
H	I		
half 19:1 halverson 3:5, 4:4, 6:15, 7:7, 10:16, 22:10, 22:16, 27:16, 27:18, 27:21, 27:22, 31:20, 36:25, 37:6 halverson@klgates 3:10 hand 6:21, 38:22 handed 10:20 handful 10:20, 25:22 heard 7:22 hence 9:3 here 18:17, 26:7, 28:19, 28:20 here's 26:5	idea 36:4 identified 31:19 identifies 18:5, 26:7		

13:16, 13:21, 13:22, 14:3, 14:6, 15:9, 15:14, 15:19, 15:24, 16:12, 19:6, 21:14, 25:7, 25:12, 25:20, 26:10, 26:18, 26:24, 27:4, 27:7, 27:8, 30:21, 32:11, 34:1, 34:6 interfaces 7:20, 12:9, 12:16, 13:10, 13:25, 16:23, 17:20 interpret 30:25 introduce 6:14 ipr 1:10, 6:7, 15:20, 22:3, 24:16, 29:24 issue 15:15, 24:15, 29:24 itself 21:11, 23:12, 25:11, 25:19, 26:23, 32:10, 32:18, 33:24, 33:25	justyne 1:33, 2:6, 6:10, 38:7, 38:26 K k&l 3:4, 6:15 kaplan 17:23, 17:25, 18:5, 18:9, 18:13, 18:14, 18:16, 18:18, 18:20, 18:24, 19:20, 20:4, 21:6, 21:12, 22:18, 24:16, 24:23, 25:9 kaplan's 21:10, 22:18 kevin 1:22, 2:3, 3:22, 4:3, 6:13, 6:19, 7:1 key 36:4, 36:6, 36:12, 36:13, 36:14, 36:15 keyboard 9:17, 26:9, 26:10, 26:17, 27:6, 28:8, 36:3, 36:5 keyboards 11:11 keys 23:6, 23:18, 28:9 keystroke 23:2, 23:21, 23:25, 28:5, 30:3, 30:11, 35:11, 35:14, 36:2 keystrokes 23:7, 23:13, 23:17, 27:14, 27:23, 28:2,	28:13, 35:15, 35:24, 35:25 kind 8:8, 10:4, 16:1, 20:1, 32:14 kinds 29:20 know 15:1, 15:5, 21:10, 25:10, 29:4, 29:9, 31:7, 32:25, 33:10, 33:23 known 28:4, 28:16, 29:7 L lan 31:3, 31:24, 32:9, 32:13, 32:20, 32:23, 33:12 language 29:19 laptop 32:25 largely 33:8 later 29:11 launch 27:8 law 3:6, 3:16 lead 13:6, 13:21 least 9:13, 12:25, 17:4, 29:22, 31:12, 32:6, 33:13, 33:16, 35:22 less 17:14, 18:7 let's 7:17	level 18:8, 36:9, 36:10, 36:22 life 29:13 likely 27:6 limit 15:13 limitation 33:17 limitation-by-li- mitation 18:4, 18:9 limited 14:15 line 8:17, 9:15, 22:5 list 14:24 lists 9:1 literally 29:19 little 15:11, 18:7, 33:5 llp 3:4, 3:14 long 32:21 look 14:8, 14:24, 22:6 looked 21:2, 31:16, 31:17, 32:14 looking 9:13, 10:14, 21:17, 22:2, 32:2, 35:22 lot 11:24, 12:16, 31:23 lots 15:5 M ma'am 7:4
---	--	--	--

machine 21:7 made 15:6 maeda 31:14, 32:10, 32:20, 33:10, 33:16, 33:18, 34:16, 34:20 maeda's 31:3 make 15:7 makes 24:22 making 23:7, 28:7 man 19:18 mardakis 27:13, 27:16 mardiks 10:24, 11:14, 21:16, 23:23, 23:24, 24:4, 24:19, 24:24, 25:1, 25:4, 25:9, 25:10, 25:18, 25:23, 26:1, 26:4, 26:12, 26:14, 27:17, 27:19, 27:23, 28:12, 30:20, 30:25, 35:9, 35:13 mardiks's 24:1 marked 10:21 marks 10:17 mass 11:2, 11:21, 13:2, 13:7, 15:25, 16:7, 16:12, 17:2, 26:24, 32:12, 34:6	materials 14:11 matter 6:6 mean 9:10, 32:16, 33:25, 36:22 meaningful 29:24 meant 10:13 meets 24:14 memorized 18:16 memory 20:15 mentioned 11:19 method 25:19 metric 22:20, 30:4, 30:13 microsoft 28:20 might 10:5, 12:13, 13:21, 15:21, 16:14, 23:14, 28:18, 28:23, 29:17, 29:20, 33:14, 35:5 mind 14:5, 15:8, 16:6 minimum 35:21 minutes 36:25 mischaracterizing 21:23 misremembering 21:4, 22:4, 33:19 miss 17:16 mm 27:18	mode 9:14, 21:14, 26:18, 27:4 modes 7:20, 11:18, 12:4, 12:16, 13:10, 13:25, 16:24, 27:5 modifying 30:25 molecular 32:11 more 8:6, 13:23, 15:17, 24:16, 25:3, 27:5, 30:2, 30:4, 30:10, 30:12, 30:23 morning 6:4 mouse 9:25 msd 34:6 much 18:10 multiple 12:9 N name 6:10, 27:15 named 38:20, 38:21 narrowly 33:2 necessary 38:16 need 10:22, 15:22, 16:10, 17:3, 23:19 needed 33:17 needs 17:14, 24:7 network 1:5, 1:7, 6:6,	9:3, 9:22 never 21:2 new 3:18 next 20:20 node 34:13, 34:17, 34:22 non-usb 7:25 none 5:2, 5:6 nonvolatile 20:15 noted 37:11 nothing 37:7, 38:9 number 6:7, 6:12 numerous 13:25 ny 3:18 O object 21:22 obvious 19:5, 30:8 occurs 8:1 offer 11:5, 11:15 offered 11:6, 11:16, 11:23, 14:11, 21:2 office 1:1 oh 27:20 okay 8:16, 8:25, 14:17, 16:17, 19:16, 32:21,
--	--	---	--

35:10, 35:12 older 33:6 one 7:19, 8:5, 13:20, 13:22, 14:3, 14:6, 14:12, 16:22, 17:9, 17:10, 21:23, 22:22, 25:8, 27:6, 28:3, 28:18, 29:20, 31:12, 36:17 only 13:20, 14:3, 35:15 operate 12:4, 17:1 operating 15:18, 20:10, 20:16, 28:23, 29:12 operation 30:25 opinion 21:2 opinions 7:11 opportunity 38:16 opposed 17:1, 23:16, 36:2 option 29:15, 29:25 options 30:9 ordinary 13:6, 30:24, 34:11 originally 12:14 other 9:1, 14:6, 16:1, 18:21, 23:14, 28:12, 29:21, 33:15,	36:18, 36:20 out 10:12 outcome 38:21 outside 9:8, 9:9, 23:5 over 8:25, 13:22 overlap 14:8 overview 18:3 owner 1:16, 2:4, 3:3, 6:16 P pacific 2:6 packets 17:16 page 15:1 pages 1:36 paper 10:23 par 25:16 paragraph 9:16, 11:1, 13:4, 14:24, 18:22, 18:25, 20:6, 20:16, 20:20, 21:4, 22:3, 25:17, 26:3, 26:5, 26:14, 26:19, 28:10, 32:19, 34:1, 34:8, 34:10 paragraphs 22:4, 22:6, 22:25, 25:22, 26:2, 31:19, 31:25, 35:22 part 8:10, 13:5,	13:16, 14:21, 15:3, 20:2, 21:15, 22:18, 23:13, 28:22 particular 12:17, 13:14, 15:19, 18:6, 20:6, 21:13, 21:14, 29:12 parties 38:19 patent 1:1, 1:2, 1:16, 2:4, 3:3, 6:16, 8:13, 9:10, 9:20, 15:16, 16:15, 18:8, 21:1, 23:5, 24:8, 24:12, 32:6, 33:13 patents 33:15 pc 31:8, 32:10, 33:6, 33:11 pci 33:7 pending 37:6 perform 14:13, 29:2 perhaps 26:22 peripheral 11:6, 24:2, 24:4, 24:5, 24:7, 24:9, 24:12, 24:14, 24:18, 25:10, 25:19, 26:7, 26:8, 26:16, 27:2, 28:3, 28:18 person 8:10, 13:6, 13:11, 13:21, 15:12, 17:21, 22:24, 26:11,	27:1, 28:4, 29:7, 30:16, 30:24, 32:1, 32:22, 34:11, 35:6 perspective 28:24, 28:25, 29:22, 30:6, 30:12, 30:19 petitioner 3:13, 6:18 petitioners 1:10 ph 1:22, 2:3, 4:3, 6:13, 7:1 phonetic 10:6, 10:11, 32:11 phrase 7:22, 16:17, 25:2 place 6:8, 38:11 planet 6:11 play 18:13 players 11:1 please 6:14, 6:21, 35:16 plug 21:6 plugged 7:21 point 21:5, 28:7, 31:10, 33:17, 34:10 pointed 31:13, 32:1 poorly 8:1 port 31:18, 31:23, 32:15
--	---	--	--

portion 26:12, 26:13 portions 34:7 posita 25:18 posita's 28:24 possible 13:23, 16:14 powerpoint 17:15 precisely 33:2 preference 13:22, 14:1 preferred 29:14, 29:17 preinstalled 13:2, 31:8 preparing 14:22 present 3:21, 26:23 presentation 17:16 presents 21:10, 21:11, 25:11, 25:19, 32:10, 32:17, 33:24, 33:25 pressing 8:19 pretty 23:3 previously 7:13, 12:6, 35:20 primitive 36:1 primitives 11:20, 13:15 printed 14:11 prior 9:5, 9:13, 12:19, 15:12, 17:22	probably 31:14 proceeding 10:21, 14:25 process 18:13 processes 26:16 processor 36:5, 36:14 programing 29:3 programmer 14:1 programmer's 28:24 programming 29:19, 30:17, 36:1 prohibition 15:8, 16:6, 16:16 prohibitions 15:18, 15:21 pros 13:12, 30:5, 30:14 provide 10:9, 17:8, 26:3, 35:13 provided 14:15, 14:18 provides 18:2 providing 8:20 pulled 27:18 purely 23:15 purpose 22:3 purposes 25:7	15:11, 15:23, 18:16, 19:10, 19:22, 22:19, 24:6, 34:14 questions 22:5, 37:8 quickly 15:1 quite 16:14	receive 10:4 recognize 10:24 recognized 17:22 recollection 21:12, 22:7, 24:25, 31:13, 34:24 record 6:5, 22:12, 22:13, 22:14, 37:3, 37:4, 37:5, 37:10, 38:15 refer 23:11 reference 8:9, 12:22, 17:5, 18:21, 21:4, 24:17, 31:14, 33:14, 34:16, 35:5 referenced 15:5, 33:9 references 12:8, 15:5, 31:12, 34:19 referencing 11:18, 13:4 refers 19:2, 32:20 refresh 22:7 related 15:18 relates 15:14 relevant 15:20, 18:5 reliable 17:15 relied 24:13, 24:21, 25:8, 30:20, 31:1, 34:15, 34:16, 35:4
		R	
		raise 6:20 rather 28:14 reached 22:1, 29:13 read 34:9, 38:16 reading 26:12, 27:1 reads 26:8 really 9:9, 23:5, 23:20, 29:18, 30:20, 30:21 reason 14:21, 14:23, 16:25, 24:9, 27:10, 28:13 reasons 8:4, 23:14, 25:8, 28:18 recall 16:18, 18:14, 18:18, 18:20, 18:21, 19:9, 19:25, 21:25, 22:2, 23:3, 23:24, 24:20, 25:3, 25:5, 28:11, 29:11, 31:21, 32:5, 33:16, 34:14, 35:2, 35:17, 35:18, 35:21	
	Q		
	question 8:2, 8:4,		

rely 34:21 remember 19:7, 31:3, 31:6, 31:25 remove 32:7 removed 32:4, 32:24 reported 1:32, 38:12 reporter 2:7, 6:11, 7:3, 38:5 represented 28:5 representing 6:11, 6:17 reproducing 23:6 required 20:21, 20:25, 21:3, 29:22, 30:6 requirement 9:20, 30:7, 32:7, 33:15, 35:14 requirements 13:20, 14:2, 17:19, 18:7, 24:7, 24:11, 24:15 resident 18:12, 20:12, 20:13, 20:17 respect 14:5, 28:16 rest 26:15, 26:19 right 6:21, 9:18, 13:3, 18:17, 19:8, 20:18, 21:7, 36:7, 36:16 role 18:12	rom 26:22 rpr 1:34, 2:7 S said 10:11, 12:23, 32:5, 32:13, 35:13, 35:20, 35:21, 38:10, 38:12, 38:15, 38:16, 38:21 same 7:15, 10:1, 10:3, 12:4, 12:10, 16:2, 16:24, 17:13, 29:20, 30:18, 35:4, 36:13, 38:17 san 3:9 santa 1:24, 2:5, 6:1, 6:9 say 8:7, 11:5, 12:13, 18:8, 18:23, 19:9, 23:13, 23:17 saying 20:16 says 8:8, 11:14, 12:1, 13:5, 18:14, 20:19, 23:24, 24:4, 24:12, 28:1, 28:12, 29:10 scenario 20:8, 23:11 scenarios 29:17 scraped 9:2 scraping 17:15	screen-scraped 9:22 script 26:21 search 25:6 second 8:6, 19:1, 19:17, 35:9 section 18:3 see 8:21, 8:22, 11:3, 11:8, 11:12, 15:2, 16:4, 19:1, 19:3, 21:20, 24:8, 25:24, 26:1, 27:10, 31:22, 33:14, 35:23 seeing 31:23 seem 23:7 send 36:2 sense 9:18, 10:8, 14:9, 23:15, 24:6, 24:10, 27:10 sensitive 17:14 sent 28:2, 28:6, 35:16, 36:5 sentence 24:3, 34:9 separate 17:6, 17:7 set 12:15, 13:16, 16:13, 19:25, 26:9, 26:17, 28:4, 29:23, 38:22 sets 14:5, 14:8,	17:20 setup 19:8 share 17:25 sharing 18:13 shorthand 2:7, 6:11, 7:2 showed 31:16 shut 29:9 sic 27:13 signal 36:5, 36:11, 36:13 signature-plkal 38:24 similar 16:3, 16:9, 30:18 simulating 23:7, 23:9, 23:15 simulation 23:14 since 7:12 sir 17:24 sitting 18:17 skill 8:11, 13:6, 13:11, 15:12, 17:22, 22:24, 26:11, 27:1, 28:4, 30:16, 30:24, 32:2, 32:22, 34:11, 35:6 skilled 29:7 skim 15:1 slot 32:15, 33:5,
---	--	--	---

33:7 slotted 31:17 software 18:12, 20:12, 20:13, 20:17, 20:21, 20:23, 20:25, 21:3, 27:8, 28:14, 36:13 some 9:1, 9:12, 10:7, 13:19, 14:2, 14:10, 16:10, 16:14, 16:16, 18:2, 18:21, 21:4, 22:4, 22:22, 22:23, 23:21, 26:3, 28:5, 29:17, 31:18, 34:7, 34:10, 35:5 someone 28:9 something 9:4, 9:5, 9:15, 17:21, 28:17, 28:21, 29:15, 31:11, 31:15, 32:3, 32:23, 33:5 sorry 19:19, 19:22, 25:15, 26:13, 28:20, 29:6, 30:10, 35:24 sort 9:12, 10:7, 14:13, 28:5, 31:18 sound 19:8 speaking 13:13, 15:17 spec 9:5, 14:5, 15:2 specialized 16:11	specific 9:19, 12:2, 13:20, 14:2, 16:21, 18:7, 24:6, 24:11 specifically 8:5, 8:10, 18:21, 24:14, 27:25, 28:11, 34:15, 34:20 standard 8:8, 8:10, 12:14, 13:16, 14:12, 14:18, 16:22, 20:2, 23:21, 30:25 stands 19:7 start 8:25, 28:11 start-up 26:21 state 12:18, 15:4, 38:2 stated 38:11 statement 11:17, 12:3 states 1:1, 8:17, 11:1 stenographer 6:4, 6:20, 10:15, 22:8, 22:12, 22:14, 27:15, 31:9, 37:3, 37:5, 37:10 stenographically 1:32 stephen 3:15, 3:19, 6:17 steps 26:6 steve 27:18 still 7:15, 10:22,	33:21 stop 10:14 storage 11:2, 11:21, 13:2, 13:8, 16:1, 16:7, 16:12, 17:2, 26:24, 32:12, 34:6 stored 20:14 stream 17:6, 28:2, 35:15 streaming 9:2, 9:21 streamlined 30:2, 30:5 streamlining 30:7 streams 17:8, 17:9 string 28:6, 28:7 struck 23:18 subject 11:22 subscribe 38:17 suggest 26:22, 35:6 suggesting 32:22 suggests 21:20, 26:2 suite 3:8 supervision 38:14 support 9:21, 16:23, 33:17 supported 13:20, 13:24, 14:3, 16:11, 27:5, 29:10,	29:11 supposed 22:2 sure 15:21, 16:13, 19:6, 22:10, 22:11, 22:19, 30:4, 30:13, 35:19, 36:19, 37:1 suspect 14:12, 15:21 switch 10:7 sworn 7:2 syllable 27:19 system 20:10, 20:17, 23:12, 23:16, 27:11, 28:23 systems 15:18, 29:13, 33:8 T take 14:7 taken 2:3, 38:11 taking 6:8 talked 7:12, 12:6, 12:22, 21:18, 34:8, 35:20 talking 13:23, 20:6, 29:16, 31:3 talks 12:25, 31:14, 34:5 tcp 17:17 teach 35:6 technique 28:19, 28:23,
--	---	---	--

30:5 techniques 28:4, 29:3, 30:17, 36:24 technology 1:6, 1:7, 6:6 tell 38:9 tends 17:14 term 9:7, 9:9, 23:3, 23:20, 24:5, 32:13, 33:3, 34:13 terminology 32:16, 33:6 terms 8:7, 13:9, 17:5, 26:15, 33:4, 36:19 test 23:13 testified 7:3, 12:15, 14:4, 30:14, 33:3 testimony 11:23, 34:17, 38:12, 38:15 text 32:3 thank 7:9, 10:14, 34:4, 37:9 thanks 27:20 thereafter 38:13 therein 38:11 thing 17:13, 24:14 things 9:2, 13:13, 14:12 think 8:8, 9:8, 9:14,	10:11, 12:7, 12:15, 13:4, 13:5, 13:10, 14:21, 14:24, 15:3, 15:7, 15:20, 16:22, 17:12, 20:1, 20:11, 21:1, 21:15, 21:22, 21:23, 22:23, 24:13, 24:22, 25:8, 25:17, 26:2, 26:3, 27:1, 27:25, 28:8, 28:15, 29:24, 30:7, 30:14, 31:18, 32:1, 32:5, 32:13, 33:8, 34:1, 34:9, 35:13, 35:18, 35:20 thought 25:12, 34:7 through 14:13, 15:1, 18:2, 18:10, 26:5, 26:6, 26:15, 36:3 time 2:6, 10:19, 12:5, 12:10, 16:24, 17:14, 35:23, 37:11, 38:11 times 12:22, 16:18 today 6:18, 14:20, 37:7 today's 6:7 top 11:24 trademark 1:1 transcribed 38:13	transmission 13:24, 15:9, 16:7 transmitter 20:9, 20:15, 21:6, 21:10, 24:18, 24:21, 31:16, 32:17 treat 17:8 trial 1:2 true 38:15 truth 38:9, 38:10 try 8:2, 30:9 trying 10:12 tuesday 12:7 two 8:4, 12:4, 12:25, 13:2, 28:19, 29:25 type 8:1, 10:5, 12:11, 17:18, 19:5, 35:7 typed 23:6 types 11:25, 12:25, 13:2 typically 28:5 typing 28:9	30:16 umaeda 10:6, 10:11 unclear 8:4 under 38:13 understand 22:24, 26:11, 27:2, 32:3, 34:12 understanding 8:23, 19:11, 19:14, 19:15, 19:23, 20:3, 20:24, 32:9 understood 15:4, 30:15 unit 9:3 united 1:1 unrelated 16:15, 30:23 usa 1:5, 6:6 usb 7:19, 7:20, 7:23, 7:25, 8:6, 8:7, 9:5, 9:8, 9:13, 11:1, 11:2, 11:18, 13:10, 13:16, 13:25, 14:4, 14:12, 14:18, 15:2, 15:13, 16:22, 16:23, 21:13, 21:14, 24:1, 24:4, 24:13, 24:18, 24:25, 25:2, 25:6, 25:11, 26:7, 26:8, 26:10, 26:16, 26:18, 26:22, 27:2, 27:5, 28:2, 29:1, 30:21, 30:25,
--	--	---	---

33:23, 33:25 use 12:15, 13:21, 15:18, 17:17, 17:19, 26:10, 28:3, 28:13, 28:18, 28:23, 30:4, 30:22 user 8:18, 8:19, 8:20 user-addable 31:8 user-friendly 30:11, 30:13 uses 24:4, 32:16 using 8:11, 12:9, 12:12, 15:8, 16:6, 17:6, 17:9, 22:20, 23:12, 23:16, 26:17, 27:3, 29:3, 29:14, 29:15, 30:2, 30:10, 30:11, 36:13 usually 12:11, 12:13, 23:11 utilize 13:7	versus 13:21, 14:3, 14:6, 17:11, 17:12, 17:13, 28:19 vga 33:8 via 3:22 video 9:2, 9:22, 17:6, 17:12, 17:13, 17:25, 35:3 videoconference 3:22 virtual 23:15 vs 1:12	12:23, 16:18, 31:4, 31:12, 33:9, 34:18 welcome 7:8 well-known 9:15 whereof 38:22 whether 8:5, 12:3, 18:20, 19:11, 19:23, 20:21, 22:21, 32:7 whole 38:9 windows 19:5, 20:2, 28:20, 28:22, 29:10, 29:12 wireless 31:3, 31:15, 32:20, 33:12 within 9:4, 13:25, 27:5 within-entitled 38:10 witness 4:2, 5:4, 6:18, 7:4, 21:25, 31:11, 38:8, 38:12, 38:15, 38:22 word 11:19, 25:5 worded 8:2 words 18:20 work 23:22 wouldn't 9:23, 12:13, 24:9	21:22, 22:11, 27:17, 27:20, 31:10, 37:2, 37:7, 37:8 yang@dentons 3:19 yealink 1:5, 1:7, 6:6, 6:18 york 3:18 yourselves 6:14
	W		Z
			zoom 3:22
			.
			.7 4:4
			0
			002 18:8 01437 1:10, 6:7 02 22:12 08 22:15
			1
			1:36 10 13:5, 22:12, 22:15, 31:17, 31:24, 32:3, 32:7, 32:20, 34:1, 37:3, 37:5, 37:10, 37:11 100 31:18, 32:4, 32:10 10020 3:18
v	vague 15:11 various 29:3, 34:19, 36:23 vbscript 28:10, 28:20, 29:9, 29:14, 30:22 version 29:11 versions 29:12	walk 18:10 walk-through 18:4 walking 26:6 walks 26:15 want 18:11, 33:3, 35:9, 36:25 way 9:23, 12:2, 21:13, 32:21, 36:17, 38:20 ways 12:16, 15:19, 22:24, 28:16, 36:18, 36:20 we're 13:23 we've 7:12, 16:17 wednesday 1:26, 6:5 week 7:10, 7:12,	
		Y	
		yang 3:15, 6:17,	

1026 10:17 1030 33:21 1111 2:4, 6:8 120 20:15 1200 3:8 1221 3:17 14301 1:34, 2:7, 6:12, 38:26 18 15:1 2 2000 29:11 2010 9:6, 13:11, 15:12, 17:22, 29:8 2024 1:10, 6:7 2025 1:26, 2:6, 6:2, 6:5, 38:23 220 20:17, 20:21 237 8:13, 9:10, 9:20, 15:16, 16:15, 18:6, 21:1, 23:5, 24:8, 24:12, 24:16, 29:23, 30:6, 30:19, 31:1, 33:13, 33:16, 34:15, 34:22 27 24:15, 26:5 28 26:14 29 2:5, 6:2, 6:5	2a 26:6, 26:15 2nd 38:23 3 30 26:5 32 14:25 33 28:10 36 34:9, 34:10 38 1:36 4 41 37:3 420 20:15 47 18:22, 18:25, 20:6, 21:17, 21:20, 22:3 48 21:4, 22:22 5 50 37:5, 37:10, 37:11 589279 1:35 6 65 8:17, 9:16 8 80 32:20 87 25:17, 26:19 9 2:5, 6:2, 6:5	94111 3:9	
---	---	-----------------------------	--