

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

SAMSUNG ELECTRONICS CO., LTD. AND
SAMSUNG ELECTRONICS AMERICA, INC.,

Petitioners,

V.

MAXELL, LTD.,
Patent Owner

Case: IPR2025-01311
U.S. Patent No. 11,812,091

* * * * *

DEPOSITION OF: BENJAMIN BEDERSON, PH.D.
DATE TAKEN: May 22, 2026
TIME: 9:00 A.M.
PLACE: BY VIDEOCONFERENCE
REPORTED BY: MICHELLE PULIDO STUBBEN,
REGISTERED PROFESSIONAL REPORTER,
FPR-C and NOTARY PUBLIC

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Job No. 7122451

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1	C O N T E N T S
2	TESTIMONY OF BENJAMIN BEDERSON, PH.D.
3	Direct Examination by MS. PREMRAJ.....4
4	Cross-Examination by MR. TAMBUR0.....48
5	CERTIFICATE OF REPORTER.....52
6	CERTIFICATE OF OATH.....53
7	ERRATA SHEET.....54
8	WITNESS NOTIFICATION LETTER.....55
9	EXHIBITS.....NONE ATTACHED

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11

12 S T I P U L A T I O N S

13 It's hereby agreed and so stipulated by and
14 between the parties hereto, through their respective
15 counsel, that the reading and signing of the transcript
16 is expressly waived by the Deponent.

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

2 THE REPORTER: Please raise your right hand to
3 be sworn in.

4 Do you swear or affirm that the testimony you
5 will give in this matter will be the truth, the
6 whole truth, and nothing but the truth, so help you
7 God?

8 WHEREUPON,

9 BENJAMIN BEDERSON, PH.D.,
10 was called as a witness, and having first been duly
11 sworn, testified as follows:

12 THE WITNESS: Yes, I do.

13 DIRECT EXAMINATION

14 BY MS. PREMRAJ:

15 Q. Good morning, Dr. Bederson. Am I saying your
16 name correctly?

17 A. You are. Thank you.

18 Q. Could you please state your full name just for
19 the record?

20 A. Benjamin B. Bederson.

21 Q. Have you been deposed before?

22 A. I have.

23 Q. I'll still just go through some ground rules
24 so we are on the same page. I'll ask you various
25 questions throughout the deposition, and I just ask you

1 give me a verbal answer. Not shaking your head yes or
2 no. Does that work for you?

3 A. Yes, I can do that.

4 Q. And I don't imagine going a long time, but
5 I'll try to factor in breaks like every hour. And,
6 obviously, if you need a break, just let me know. I
7 just ask that if I've already started a question, you
8 just finish the answer, and then we can go to break. Is
9 that all right?

10 A. That is fine.

11 Q. Okay. Great. Is there any reason that you
12 cannot testify truthfully today?

13 A. No.

14 Q. Okay. Are you at the DLA office in D.C. right
15 now?

16 A. I am.

17 Q. Okay. And Mr. Tamburo is there in the room
18 with you, right?

19 A. He is in the room with me, along with
20 Mr. Fildes.

21 Q. Is there anyone else in the room with you?

22 A. No.

23 Q. Do you have any devices on you other than the
24 laptop that you are speaking from?

25 A. My personal phone is in the room, but it is in

1 the silent mode.

2 Q. Do you have any papers with you, in front of
3 you?

4 A. I do.

5 Q. What papers do you have in front of you?

6 A. I have the '091 Patents, my declaration for
7 this matter, and the prior art that I referenced.

8 Q. Are there any notes on any of those documents?

9 A. No.

10 Q. Okay. Thank you.

11 You were retained in this matter by counsel
12 for Samsung. Correct?

13 A. I think that's right.

14 Q. And you understand that Samsung is the
15 petitioner in this IPR proceeding, right?

16 A. Yes.

17 Q. You're being compensated for your work, right?

18 A. I am.

19 Q. You have been compensated before for your
20 prior work involving the same patent family; is that
21 right?

22 MR. TAMBURIO: Object to the form.

23 THE WITNESS: I think that's right. I have
24 been compensated for my work regarding a different
25 patent in the same patent family.

1 BY MS. PREMRAJ:

2 Q. Specifically, you provided opinions regarding
3 the '394 Patent. Do you recall that?

4 A. I have provided opinions regarding the
5 '394 Patent.

6 Q. That '394 Patent is in the same family as the
7 '091 Patent at issue here. Correct?

8 A. Yes, it is.

9 Q. In that prior matter, you relied on a
10 reference Phillips as prior art. Correct?

11 A. Are you referring to the declaration I
12 provided for an IPR on the '394 Patent?

13 Q. That would be correct, yes.

14 A. I believe I did. I don't have that material
15 in front of me.

16 Q. In that prior matter, you also relied on a
17 reference Wallace as prior art; is that right?

18 A. Again, I don't have that material in front of
19 me, but I think I probably did.

20 Q. And what about a reference Uchida, if I'm
21 saying that correctly, did you rely on that one as well
22 in the '394 matter?

23 A. I would have to check. I think I may have.

24 Q. Those three references I just mentioned, you
25 relied on them in this proceeding also. Correct?

1 A. I would have to double-check to make sure they
2 are exactly the same documents, but I certainly do rely
3 on three references in this matter, and I refer to them
4 as Phillips, Wallace, and Ucheta.

5 Q. In preparing your declaration for this
6 proceeding, you reviewed the '091 Patent, right?

7 A. I did.

8 Q. Did you review it from cover sheet to the end
9 where the claims are?

10 A. Yes, I did.

11 Q. Did you review the file history for the
12 '091 Patent?

13 A. Are you asking specifically about preparation
14 for this deposition or in the preparation for my
15 declaration?

16 Q. For your declaration. I apologize.

17 A. Yes, I did.

18 Q. The entire file history; is that correct?

19 A. I did review the entire file history, yes.

20 Q. Okay. I would like to go to page [sic] 53 of
21 your declaration. In that paragraph, you provide a
22 definition of a person of ordinary skill in the art,
23 POSITA. I'll let you flip to that, but could you just
24 confirm that?

25 MR. TAMBURRO: You said paragraph 53?

1 MS. PREMRAJ: Yeah.

2 THE WITNESS: Okay. I'm at paragraph 53.

3 BY MS. PREMRAJ:

4 Q. So this paragraph you provided a definition of
5 a POSITA; is that right?

6 A. I did.

7 Q. Under your definition, that person has a
8 bachelor's degree in computer science, electrical or
9 computer engineering, or a comparable field of study; is
10 that right?

11 A. That is part of what I described.

12 Q. And the other part is approximately one or two
13 years of professional experience with user interface
14 design for mobile devices or other relevant industry
15 experience; is that right?

16 A. That is also part of what I described.

17 Q. You wrote mobile device there. Do you mean
18 things like phones and PDAs?

19 A. I think those would be -- typically be
20 considered to be examples of mobile devices.

21 Q. This definition here on page 53, it does not
22 mention television systems. Correct?

23 A. That is right. It does not specifically call
24 out television systems.

25 Q. And, again, this definition on paragraph 53,

1 it does not mention set-top boxes, right?

2 A. That is right. It does not specifically call
3 out set-top boxes.

4 Q. That definition, it does not mention video
5 on-demand systems. Correct?

6 A. That is right. It does not specifically call
7 out video on-demand systems.

8 Q. It does not mention broadcast architectures.
9 Correct?

10 A. That is right. It does not specifically call
11 out broadcast architectures.

12 Q. It does not mention any server-client
13 architectures. Correct?

14 A. That is right. It does not specifically call
15 out server-client architectures.

16 Q. Throughout the deposition, I may use a term
17 UI. Is it also your understanding that UI refers to
18 user interface? Is that okay if I use that term?

19 A. That is fine.

20 Q. Okay. Now, a mobile device UI designer with
21 one-year experience, they typically would be designing
22 things like menus, icons, and navigation flows for
23 mobile devices like a phone, right?

24 A. I think those are certainly some of the things
25 that such a person would be familiar with. And since

1 they would have -- also had a bachelor's degree in
2 computer science, electrical or computer engineering, or
3 comparable field of study, they also would be familiar
4 with a wide range of other things, including all kinds
5 of communication protocols and client-server
6 architectures, and media delivery, and structures of all
7 kinds. So it's certainly not limited to the things that
8 you said.

9 Q. Your POSITA definition, that is limited to the
10 time of the '091 Patent, right, August 30 of 2005?

11 A. Yes, it is.

12 Q. Back in 2005, there were systems where the
13 device itself, you know, the mobile device, decided what
14 to display based on local logic; is that right?

15 MR. TAMBURRO: Object to form.

16 THE WITNESS: I don't think that is something
17 I specifically provided an opinion about.

18 BY MS. PREMRAJ:

19 Q. Do you have an opinion on that?

20 A. Again, it's not something I analyzed
21 specifically that question. I think I did talk in my
22 report about issues regarding local and server-based
23 access. So I would be happy to review and explain what
24 my opinions are regarding those answers.

25 Q. But your definition of a POSITA is based on

1 systems that existed in 2005, right?

2 A. That is right.

3 Q. So in 2005, those systems, did those include
4 devices that decided what to display based on local
5 logic?

6 MR. TAMBURRO: Object to form.

7 THE WITNESS: As I mentioned, I addressed some
8 issues about whether devices can access information
9 locally or from a server in my declaration. So,
10 for example, in the section of my declaration
11 responding to Claim Limitation 1E, starting at
12 paragraph 98, I discuss -- describe some of
13 Phillips' disclosures, which are things that a
14 person of skill in the art would have been familiar
15 with. And in paragraph 103, I explained how
16 Phillips discloses access to information from an
17 outside server.

18 So I think it's certainly the case that a
19 person of skill of the art would have understood
20 that that information could have come from an
21 outside server. I think a POSITA would have also
22 recognized that information could have also come
23 from a local device.

24 BY MS. PREMRAJ:

25 Q. Just so I understand, in 2005, my question

1 was, were there systems that decided themselves to
2 display what -- that decided what to display based on
3 local logic. And is my understanding correct that
4 you're saying yes based on your declaration?

5 MR. TAMBURRO: Object to form.

6 THE WITNESS: What I said is that based on my
7 declaration, a POSITA would have been clear that it
8 can decide about how to access information from a
9 server. I don't think I specifically -- was not
10 recalling right now specifically offering opinion
11 about whether such a decision could have been made
12 locally on the device. But sitting here today, I
13 imagine the answer would probably be yes.

14 BY MS. PREMRAJ:

15 Q. All right. And I think you already answered
16 this, but also in 2005, there were also systems where a
17 server delivered instructions on what to display, right?

18 A. As I said, when I was describing Phillips,
19 that was known to a POSITA before 2005 and that explains
20 making choices about what to display based on
21 information from a server. So I think the answer to
22 that would be yes.

23 Q. So those two things that I asked about, those
24 are different architecture approaches, right?

25 MR. TAMBURRO: Object to form.

1 THE WITNESS: I'm not sure what you mean by
2 different architectural approaches, but I would
3 agree that accessing something -- or making a
4 decision to access something from a server is not
5 the same as making a decision to access something
6 locally. Although as I explained clearly, making a
7 choice to access information from a server was well
8 known by 2005.

9 BY MS. PREMRAJ:

10 Q. Those different approaches, they require
11 different design skills, right?

12 A. For the reasons I explained, a POSITA would be
13 familiar with and have the skills to make a choice about
14 accessing information from a server. I think a person
15 of skill in the art would certainly also have skills to
16 make a choice to access information from a local device.
17 I don't see any reason why they wouldn't.

18 Q. But those are different skills. Correct?

19 A. I agree those are different ways to access
20 information, and those are well within the skill level
21 of a POSITA, but they are different ways of doing
22 things.

23 Q. Dr. Bederson, in paragraph 15 of your
24 declaration, you talk a little bit about your work with
25 Hillcrest Labs. You have experience working with

1 interactive television systems from your time at
2 Hillcrest Labs. Correct?

3 A. I do.

4 Q. You've also studied the systems as part of
5 your academic research. Correct?

6 A. I've studied which systems?

7 Q. Interactive television systems.

8 A. I think it's fair to say, yes, I studied
9 interactive television systems as part of my academic
10 research.

11 Q. Interactive television systems, they include a
12 component called a set-top box; is that correct?

13 A. Sometimes they can.

14 Q. That set-top box, it can display content on
15 the user's screen on the television; is that right?

16 A. I think set-top boxes can be used in many
17 ways. It depends on the particular set-top box. But I
18 think it is the case as it was at the time of the
19 patent, it was possible for them to control the display
20 of information on the device.

21 Q. When a set-top box displays something on a
22 screen, things like a tool bar or a menu, something has
23 to tell the set-top box to display it, right?

24 A. I think generally when there is a computing
25 system that is displaying something on a screen, there

1 is a code and information that is executed and accessed
2 that results in the decision to display information on
3 the screen.

4 Q. Are there different things that can -- oh,
5 sorry.

6 A. No.

7 Q. Are there different -- I'm so sorry. I think
8 there is a lag issue. Please finish.

9 A. I was just going to add that that general
10 description of computing I think would also apply to a
11 set-top box.

12 Q. There are different kinds of things that can
13 trigger what kind of things are displayed using a
14 set-top box, right?

15 MR. TAMBURRO: Object to form.

16 THE WITNESS: As I just said, when a computing
17 system executes code and uses data to display
18 something on a screen, then there are different
19 factors that can come into play, such as what the
20 code is and what the data is. That would typically
21 apply to a set-top box as well.

22 BY MS. PREMRAJ:

23 Q. -- trigger a display change using a set-top
24 box, that would be a user pressing a button on the
25 remote, right?

1 A. The beginning of your question was cut off.
2 Would you mind repeating it?

3 Q. Sure. One kind of thing that could trigger a
4 display change using a set-top box, could that be a user
5 pressing a button on the remote?

6 A. I'm not sure I fully understand the scenario
7 you're describing. But I would say that in general,
8 when a computer system is executing code and considering
9 data to decide what to display, that can also consider
10 inputs such as user inputs. I think that would also
11 apply to a set-top box where user inputs might come from
12 a remote control device. This is just general
13 understanding. This is not based on a particular
14 analysis of a particular set-top box. So I think it
15 would completely depend on the details of the scenario.

16 Q. For example, if a user presses Guide, a
17 program guide can appear on the screen, right?

18 A. I'm not sure what kind of guide button you are
19 talking about or what kind of set-top box you are
20 talking about, so I don't know how to answer that
21 question.

22 Q. Have you seen a situation where you press
23 Guide on a TV remote and a guide overlay appears on the
24 TV?

25 A. I may have. I don't specifically recall what

1 the label on a remote control button might have been.

2 Q. Another trigger could be something like a
3 timer, right, like an overlay that disappears after a
4 certain number of seconds?

5 MR. TAMBURRO: Object to the form.

6 THE WITNESS: So in my declaration regarding
7 Claim Limitation 1F, like Frank, starting at
8 paragraph 107, I refer to some of the disclosures
9 of Phillips that explains, for example, in
10 paragraph 109, that both flip display and browse
11 display may be removed automatically from the
12 display screen, e.g., after a few seconds or a
13 minute or two, after which time the interactive
14 operation buttons are no longer displayed.

15 So I think a POSITA clearly would be familiar
16 with the idea of automatically changing the display
17 after some time has elapsed.

18 BY MS. PREMRAJ:

19 Q. And another trigger, that could be information
20 received from a server, right?

21 MR. TAMBURRO: Object to form.

22 THE WITNESS: So in the next paragraph,
23 paragraph 110, I described how Phillips discloses
24 that time-related information from a server can
25 also be used to -- or not also be used -- that

1 time-related information can come from a server,
2 which is -- can be used to control removing a
3 graphical element from a display after a period of
4 time.

5 BY MS. PREMRAJ:

6 Q. You described that in a separate paragraph, so
7 I'm just trying to understand all the different
8 mechanisms that could trigger the display change. So I
9 discussed pressing a button. I pressed it to trigger
10 like a timer. I also discussed -- or I asked you about
11 information you get from a server.

12 Are these all -- could these be different
13 mechanisms?

14 A. Again, I'm not sure what you mean by different
15 mechanisms. A computer system makes decisions based on
16 many kinds of aspects of the system, based on --
17 including the instructions. I mentioned data. Can
18 certainly also include data that comes from external
19 locations, such as a user input on a user input device.
20 Can come from a server, can come from a network, from a
21 timer. Those are some of the things that I'm thinking
22 about right now, but I think these are all just sort of
23 general characteristics of computer systems.

24 In this section of my declaration, I
25 specifically described how some of those decision points

1 can be based on user input on timers and information
2 that comes from a server.

3 Q. I would like to ask about each one just so I
4 understand clearly. When a user presses a button and a
5 display changes the set-top box, that is responding to
6 the local input. Correct?

7 MR. TAMBURO: Object to the form.

8 THE WITNESS: So my analysis in this section
9 of my report is specifically about Phillips, and I
10 do explain how a user can use user interface
11 elements, such as the flip tuning or browsing
12 feature, which is controlled both by the user, for
13 example, by pressing buttons on the remote control,
14 as well as time information, which comes from the
15 server, as well --

16 BY MS. PREMRAJ:

17 Q. Dr. Bederson -- yeah.

18 A. -- as well as other network information that
19 comes from the server.

20 Q. I wasn't asking you about Phillips. I'm just
21 asking you as a POSITA, when a user presses a button on
22 the remote control and a display changes on the TV, the
23 set-top box at that moment is responding to that local
24 input, right?

25 A. I don't have an opinion about how all possible

1 set-top boxes involve possible remote control devices
2 and all possible communications with servers and local
3 elements might work.

4 My opinion in this declaration is about how a
5 person of skill in the art would understand the art that
6 I described, and I explained how Phillips works and how
7 a person of skill in the art would understand Phillips.

8 So my answer to your question is maybe, but I
9 don't have a specific analysis of a particular system in
10 order to give you an answer to that question in mind.

11 Q. You consider yourself a POSITA, though,
12 according to your definition in this declaration, right?

13 A. At least a POSITA, yes.

14 Q. So sitting here as a POSITA, is it your
15 testimony that you cannot tell me that when a user
16 presses a button on their remote control and the display
17 changes, the set-top box isn't responding to that local
18 input, yes or no? You are not able to give me an answer
19 to that?

20 A. I don't understand the details of your
21 hypothetical scenario. I don't know what the
22 architecture of that system is. I don't know if that
23 remote control is communicating directly with the
24 set-top box. If, perhaps, the remote control is
25 communicating with some other computer or the remote

1 control is first communicating with the server. I just
2 don't know anything about the hypothetical scenario you
3 are describing. So, no, I cannot answer that question
4 with the limited information that you have given me.

5 Q. Okay. But the logic for responding to that
6 button press, it can be stored locally on a set-top box,
7 right? That's possible?

8 A. Sitting here today, I would imagine that could
9 be possible. As I've said, I think it's also clear that
10 Phillips works by including information, such as time
11 information, and that comes from the server.

12 Q. When a timer causes something to disappear
13 from the screen, can that timer run on the set-top box?

14 MR. TAMBURO: Object to form.

15 THE WITNESS: Again, I don't have the -- I
16 don't understand the hypothetical scenario you are
17 describing, so I don't know how the specific -- any
18 specific system you might be thinking about is
19 working. But I think, generally, a timer could run
20 on a set-top box.

21 BY MS. PREMRAJ:

22 Q. Do set-top boxes have their own clocks?

23 A. Again, I don't have -- I don't know what
24 specific set-top box you might be referring to. Many
25 set-top boxes get a lot of information from servers, but

1 I think it's -- sitting here today, I think it is the
2 case that many set-top boxes would have their own timers
3 or clocks.

4 Q. You said that many set-top boxes receive
5 information from servers, but a set-top box does not
6 need to contact a server to know that ten seconds has
7 passed, right?

8 A. Again, I have not analyzed any specific
9 set-top boxes for that specific question. I think it's
10 certainly the case that set-top boxes do get information
11 from servers, including the one in Phillips, including
12 time information. But I think it is probably also the
13 case, sitting here today, that a set-top box could have
14 a timer so that it could determine if ten seconds have
15 passed locally.

16 Q. And that timer value -- you know, for example,
17 ten seconds -- one way that you can implement that is by
18 hard coding it into the set-top box's software, right?

19 A. I think a POSITA has many choices about how to
20 design software, including using the design described in
21 Phillips where the length of time that is used to
22 determine when a flip or a browsing feature would be
23 removed from the screen could come from a server. But
24 sitting here today, I think it is probably possible that
25 a POSITA would understand you could choose to hard code

1 into a software how long a particular item could be
2 displayed.

3 Q. So I wasn't asking specifically about
4 Phillips, just it is an option, right? It is an option
5 to a POSITA?

6 A. Well, my opinion in my declaration in this
7 section is about Phillips, so that is what -- that's why
8 I'm describing my opinion. But sitting here today, I
9 think it is generally the case that a POSITA would
10 understand that you could also choose to or have the
11 ability to hard code timing information into a local
12 device.

13 Q. Another option, it could be to have it as a
14 configureable system setting from the television.
15 Correct? That the user could configure it?

16 MR. TAMBURRO: Object to form.

17 THE WITNESS: In paragraph 113 of my
18 declaration, I did explain that a POSITA would have
19 known that one of the simplest ways to ensure
20 consistency of such settings, such as timer
21 settings, is to have them configured centrally, for
22 example, through a content or a service provider.

23 I think such configuration could be done by
24 the system. I think it is also the case that a
25 POSITA would understand that a user could do those

1 configurations. Or --

2 BY MS. PREMRAJ:

3 Q. And another option -- sorry.

4 A. I'm not saying -- that's fine. I think it is
5 fair to say that a user could perform such configuration
6 typically.

7 Q. So a user could perform such configuration,
8 but another option would be that the server, like you
9 were saying, could send out a timeout value to the
10 television; is that right?

11 A. So to be clear, my opinion is that Phillips
12 discloses that the server provides a timeout information
13 or timer information. But sitting here today, I would
14 agree that a POSITA would understand that that's
15 something that a user could also configure.

16 Q. Those three things we talked about, the
17 set-top box having its own hard-coded value,
18 configureable -- that the user configureable system, and
19 the server-provided timeout, those are three different
20 design choices, right? They are not the same thing?

21 A. Again, I don't fully understand your
22 hypothetical scenario, so I would have to analyze
23 specific systems to be able to understand how these --
24 how the system works. A user might do something locally
25 that resulted in configuration applying to a server, and

1 then the server could send time information back to the
2 device. So I think systems could work differently, so I
3 just don't fully understand your scenario you are
4 talking about.

5 Q. So my question is just this: Where a timer
6 could either be hard coded into a set-top box, set by a
7 user, or set from a server, those are three different
8 design choices, right?

9 MR. TAMBURO: Object to form.

10 THE WITNESS: Again, I just don't fully
11 understand the scenario you are describing because
12 I don't have the specific system to analyze. But I
13 think the -- I hear what you are saying, that there
14 are three characteristics. I think how they work
15 together could be interrelated. So I don't know if
16 they are precisely three separate design choices.

17 BY MS. PREMRAJ:

18 Q. So my question is not if they are always
19 separately implemented or if they could be combined.
20 I'm just asking, those are three different designs,
21 right? Like, a POSITA would not understand a hard-coded
22 set-top box to be the same as a timeout that is received
23 from a server; is that right?

24 A. Again, I think it just depends on the system.
25 It might have a default value that is hard coded that

1 gets overwritten by information that is received from
2 the server. So I just don't have enough information to
3 answer that hypothetical.

4 Q. Sure. But even in the example that you just
5 provided, that hard-coded value is not the same as the
6 server information that later supersedes it, right?

7 MR. TAMBURRO: Object to form.

8 THE WITNESS: Well, the information might be
9 the same. The server might send information which
10 is the same value that was in the original
11 hard-coded value.

12 BY MS. PREMRAJ:

13 Q. But they are not implemented in the same way,
14 right?

15 MR. TAMBURRO: Object to the form.

16 THE WITNESS: Again, I just don't fully
17 understand your scenario because you could have a
18 system where there is a hard-coded value and
19 information that comes from the server. So those
20 are two characteristics of the system. They both
21 occur in one implementation.

22 BY MS. PREMRAJ:

23 Q. So in the same way that you say that a POSITA
24 could choose to implement both of those in the same
25 device, would a POSITA also choose to implement one or

1 the other in the same device?

2 A. Again, my opinion in my declaration is what --
3 in this section is what Phillips actually discloses and
4 how a POSITA would understand that. But sitting here
5 today, while having to analyze the hypothetical scenario
6 you are explaining, and as I said, I don't fully
7 understand it, but I would agree that a POSITA typically
8 could make a range of choices in how to implement their
9 software.

10 Q. Let's start with the first thing we talked
11 about, that hard-coded timeout. That is the simplest
12 thing to implement, right? You just hard code it into
13 the set-top box?

14 A. I don't have an opinion about whether that is
15 the simplest solution or not. That actually adds all
16 kinds of complexities. For example, it might be very
17 hard to update that software, so that might add extra
18 complexity. So I don't know if that would be simpler
19 overall or not simpler overall.

20 Q. So compared to a system where the setting
21 could be changed by a user or a system where the setting
22 is received by a server, is it your opinion that you
23 could -- you are not able to tell me if a simple
24 hard-coded timeout is the simplest of those three
25 options?

1 A. Again, I think that a POSITA would have to
2 consider the entirety of the system, including
3 characteristics such as reliability and maintenance and
4 update ability. I just haven't done that kind of
5 analysis on this scenario you are describing, so I just
6 don't have an opinion sitting here today about whether
7 the overall system would be more or less simpler to
8 implement with one particular design choice or another.
9 Just depends on many factors.

10 Q. So I'd just like to learn about, you know,
11 this understanding of a POSITA. So a POSITA sees a TV
12 and they'd like to hard code the set-top box to include
13 a timer. What does that entail?

14 A. I think it would depend on the innumerable
15 aspects about the engineering of the system.

16 Q. If all they wanted to do was hard code a timer
17 that tells you that after a certain amount of time, a
18 certain overlay disappears, would that include any
19 additional hardware?

20 A. I just don't know. I don't understand what
21 system we are talking about. For example, I don't know
22 how much local memory and processing is available.
23 Maybe it's a thin client and it really does not do any
24 processing beyond just displaying information that comes
25 from a server. There are just so many possible

1 characteristics of a system, that I just can't give you
2 a definitive answer about how a user would implement
3 something without knowing much more detail about what we
4 are talking about.

5 Q. Sure. In a hard-coded timeout situation, is a
6 server required to hard code the set-top box?

7 A. It might be, if the set-top box is designed so
8 that all display choices come from the server. Well,
9 then I'd imagine that that system might require a server
10 to even hard code a timing decision because that timing
11 decision might be made on the server. So it just
12 depends.

13 Q. I understand you are saying that it depends.
14 But is that required for every single hard coding of the
15 set-top box for that timer?

16 A. I'm sorry. I don't think I understand your
17 question.

18 Q. Sure. I can rephrase. Can you as a POSITA
19 think of a situation, any situation, where a set-top box
20 can be hard coded without a server?

21 A. Well, all set-top boxes that I'm familiar with
22 get information from a server. So I think how that
23 programming of the set-top box works would depend on
24 what its reliance is on the server. Maybe. I just
25 don't have a definitive opinion without knowing what we

1 are talking about.

2 Q. My -- my question is far more general. My
3 question is, is it possible -- no. Is it required every
4 time you hard code a set-top box to include a service,
5 is that required -- is the server required?

6 MR. TAMBUR0: Object to form.

7 THE WITNESS: I have not performed that
8 analysis. I don't know. I think what I just said
9 is that the set-top boxes that I'm familiar with
10 get information from servers, for example, to
11 display media information. But I have not thought
12 about the answer to that specific question before.

13 BY MS. PREMRAJ:

14 Q. Okay. So just so I understand, as a POSITA,
15 is it your opinion that a set-top box can never be hard
16 coded without a server?

17 MR. TAMBUR0: Object to the form.

18 THE WITNESS: I just don't really understand
19 your question. A set-top box might require a
20 server to perform some of its booting or start-up
21 operation, so maybe it would not function without
22 the server. So I just don't know because I don't
23 understand what technology you are talking about
24 here in your question.

25 BY MS. PREMRAJ:

1 Q. Right. But I'm not asking if it always
2 requires a server. You keep saying might. I'm asking
3 is it the case that it never requires a server?

4 MR. TAMBURIO: Object to form.

5 THE WITNESS: Sorry. I did not understand
6 your question. Is it the case that a set-top box
7 never requires a server?

8 BY MS. PREMRAJ:

9 Q. Yeah. Is that your opinion?

10 A. I think what I said was that in my experience,
11 every set-top box that I have seen does work with a
12 server.

13 Q. So that wasn't my question. My question was,
14 as a POSITA, is it your understanding that a set-top
15 box -- that hard coding a set-top box never requires a
16 server?

17 MR. TAMBURIO: Object to form.

18 THE WITNESS: I'm just -- sorry. I'm getting
19 lost. I'm just not understanding your question.

20 BY MS. PREMRAJ:

21 Q. Okay.

22 A. Set-top box -- hard coding, I think I have
23 agreed that computers can have some information that is
24 hard coded. And I've also explained that in my
25 experience, set-top box is, in practice, the ones I have

1 seen, all do communicate with the server.

2 Q. So I understand that they communicate with a
3 server, but would you agree that those are two separate
4 scenarios, a set-top box communicating with a server and
5 a set-top box being hard coded to do something?

6 A. I'm not sure what you mean by two separate
7 scenarios. They could be highly related.

8 Q. Can -- is it possible at all for a set-top box
9 to be hard coded to have a timer without communicating
10 with a server?

11 A. Again, my opinion in this matter is, in this
12 case, of what Phillips discloses, and Phillips does
13 disclose timer information coming from a server. But is
14 it possible that a set-top box could have local
15 programming that executes a timer without communicating
16 with a server? Maybe, probably.

17 Q. I would like to talk about the server scenario
18 now. So when the server delivers that information, in
19 that scenario the server would need to include the
20 timeout value in the information that it sends to the
21 set-top box; is that right?

22 A. I must have misunderstood your question.
23 Because what I heard was, if the server sends the
24 timeout information, then does the server send the
25 timeout information.

1 Q. Well, it would need to send some sort of
2 value, right? It would need to send a value to the
3 set-top box, right?

4 A. If the server is sending the timeout
5 information -- I guess your question is, does the
6 timeout information include a value? If it is sending
7 the timeout information, then yes, I think a POSITA
8 would understand the timeout information is a value.

9 Q. After the set-top box receives that
10 information, it would need to read that value. Correct?

11 A. I would think that receiving the information
12 on the set-top box from a server is a form of reading
13 that value.

14 Q. That set-top box, it would need to use that
15 value instead of any default value that it had.
16 Correct?

17 MR. TAMBURRO: Object to form.

18 THE WITNESS: I think the way that Phillips
19 describes how it works, a person of skill would
20 understand that it does use the time information
21 that is received from the server.

22 BY MS. PREMRAJ:

23 Q. Now, that requires the set-top box to be
24 designed to expect that information from the server,
25 right?

1 A. Phillips describes that it is designed to use
2 information received from a server, as I explained in
3 paragraph 110 where Phillips says, quote, Program guide
4 application functions and the functions of other
5 interactive television applications may be supported
6 using Server 36 and other servers connected to
7 Communications Network 34, such as Server 36.

8 Q. Sure. We can move to Phillips later. But now
9 I'm asking about a general scenario where a set-top box
10 receives timing information from a server.

11 In that situation, the server needs to be
12 designed to send that information, right?

13 A. I think, generally, if a server sends
14 information, a POSITA would generally think of that
15 server being designed to send that information.

16 Q. I would like to return to the hard-coded
17 timeout that we talked about earlier. A hard-coded
18 timeout, let's say ten seconds, would that be the same
19 for every piece of content if you only have a hard-coded
20 timeout?

21 MR. TAMBURRO: Object to form.

22 THE WITNESS: Again, that is not something
23 I've analyzed. I think it would just depend.

24 BY MS. PREMRAJ:

25 Q. As a POSITA, do you understand if a hard-coded

1 timeout, and only a hard-coded timeout, works the same
2 for every piece of content?

3 A. I think it would depend on the specific
4 system.

5 Q. So if there was a hard-coded timeout telling
6 you that a menu, all menus, are displayed for ten
7 seconds, would that be the same if a movie was playing
8 or if a live TV show was playing?

9 A. Again, I just don't understand your
10 hypothetical scenario. I think it would depend on the
11 implementation of the particular system.

12 Q. What do you understand a hard-coded timeout to
13 mean?

14 A. That's your language, so I'm doing my best to
15 understand it.

16 Q. Sure, sure. So as a POSITA, you are familiar
17 with a situation where a set-top box has a timer
18 associated with a menu disappearing. Correct?

19 A. Generally, yes. And that is something that
20 Phillips discloses an example of.

21 Q. What would you call that? I have been calling
22 it a hard-coded timeout, but what would you call it as a
23 POSITA?

24 A. Well, Phillips describes that it can remove a
25 graphical user interface item, such as a flip or a

1 browse feature, after a few seconds or a minute or two,
2 and then it explains how all of that information can
3 come from a server.

4 Q. What you just read from Phillips, is any of
5 that related to a hard-coded timeout?

6 MR. TAMBURRO: Object to form.

7 THE WITNESS: Well, I'm explaining my opinion
8 from my declaration, which is what Phillips
9 discloses and how a person of skill in the art
10 would understand it.

11 BY MS. PREMRAJ:

12 Q. Okay. So a person of skill in the art
13 understands different ways that content can time out.
14 Correct?

15 A. I think that is fair.

16 Q. So when a person of ordinary skill in the art
17 reads a passage about a menu that disappears after ten
18 seconds if no remote control button is pushed, how does
19 a person of ordinary skill in the art understand that?

20 A. Well, the only information I have in this
21 scenario is what you just told me, so I think they would
22 understand what you just told me, which is that that
23 menu would disappear after ten seconds.

24 Q. Is there a difference between enabling a user
25 input and displaying something on a screen?

1 MR. TAMBURRO: Object to form.

2 THE WITNESS: I discussed some of my opinions
3 about deciding whether to display an operation
4 panel on the screen in my opinions regarding
5 Limitation 1G starting in paragraph 114.

6 And in this section, I explained how Wallace
7 discloses a number of attributes that a person of
8 skill in the art would combine with Phillips'
9 display of operation panels to choose whether or
10 not to display those operation panels in different
11 circumstances.

12 BY MS. PREMRAJ:

13 Q. I'm happy to get into Phillips later. My
14 question was simple. Is there a difference between
15 enabling a user input and displaying something on a
16 screen?

17 MR. TAMBURRO: Object to the form.

18 THE WITNESS: I think a person of skill in the
19 art would understand that one way of enabling user
20 input is to display something on the screen so that
21 the user could interact with that element on the
22 screen through their user input.

23 BY MS. PREMRAJ:

24 Q. Have you ever seen a fast-forward button on a
25 TV remote?

1 A. I have.

2 Q. Now, when a user presses that button, if the
3 TV system decides to ignore that button press, is that
4 related to enabling a user input or displaying something
5 on the screen?

6 MR. TAMBURRO: Object to form.

7 THE WITNESS: I would have to look at a
8 specific system to have an opinion about what was
9 enabled at what time and what was displayed on the
10 screen in what scenario.

11 BY MS. PREMRAJ:

12 Q. But the system can make the decision of
13 whether to ignore the button press without changing
14 anything on the screen, right?

15 A. Well, my opinions in this matter are what is
16 actually disclosed in this case from Phillips and
17 Wallace and others. But in your hypothetical question,
18 which I don't fully understand, but I think generally it
19 is the case that a designer or a POSITA could choose to
20 ignore user input with or without what is visible on the
21 screen.

22 Q. So the screen can look exactly the same
23 whether the fast-forward button is enabled or disabled,
24 right?

25 A. Again, my opinions in this matter are about

1 what Phillips and Wallace actually disclosed. But in
2 the abstract, I think it is true that generally a person
3 of -- a POSITA could design a system so that how the
4 screen changes in response to user input is up to the
5 designer of the system.

6 Q. Could a POSITA design a system that enables
7 fast-forward without showing a fast-forward button on
8 the screen?

9 A. Well, my opinion regarding that kind of input
10 in Phillips is that it actually does disclose that there
11 is a fast-forward button displayed on the screen when
12 there is linear content. But outside of the context of
13 Phillips, generally speaking, yeah, I think it is
14 probably possible that you could build a system to have
15 a fast-forward -- physical fast-forward button on a
16 remote control that can control fast-forward without
17 changing what is displayed on the screen as far as the
18 user interface goes.

19 Q. And a POSITA could also design a system that
20 could show a fast-forward button on the screen, like an
21 icon, without actually enabling a fast-forward
22 functionality?

23 A. Again, my opinion is about what Phillips
24 actually does disclose, but I think a POSITA could
25 choose to implement systems in many different ways,

1 including having graphical user interface elements on a
2 screen that don't respond to user input.

3 Q. So if a POSITA wanted to link those two
4 elements to say when fast-forward is enabled, you show
5 the fast-forward icon, and when it is disabled, you hide
6 it, that would be a design decision for the POSITA,
7 right?

8 A. I think, generally, a POSITA can make design
9 choices about what is visible when and how they work --
10 how the user interface elements work.

11 Q. And after they make that decision, the
12 architect needs to build that link into the system,
13 right?

14 A. I think there are many ways that software
15 systems get built on many different ways of
16 communication and who does what, so I don't have a
17 specific way to answer that question in general.

18 Q. Just because a fast-forward input is enabled,
19 it does not mean that a fast-forward icon shows up on
20 the screen, right?

21 A. Well, my analysis in this declaration for this
22 matter is about what Phillips actually discloses, and
23 I've explained that. But I've also said outside of my
24 analysis here and outside of what Phillips discloses, I
25 think a POSITA would understand, as I just said, that

1 they could design a system with a wide range of
2 characteristics, such as what is displayed when and how
3 the interface elements work.

4 Q. My specific question was, just because you
5 have fast-forward enabled, right, like that input
6 enabled, it does not mean that there is a
7 fast-forward -- that a fast-forward icon has to be on
8 the screen. Correct? That is an option?

9 A. Again, my opinion was about what Phillips
10 actually discloses. But sitting here today, as I just
11 said, I think a person skilled in the art would
12 understand there's a wide range of ways they could
13 design the user interface, including having remote
14 control buttons that interact or control content without
15 displacing user interface elements.

16 Q. We are about at the hour mark. Is now a good
17 time for a break for you, Dr. Bederson?

18 A. Yes. Thank you.

19 Q. Could we come back -- it's 10:03 for me right
20 now. Do you want to come back at 10:10? Is that okay?

21 A. About ten minutes?

22 Q. It is actually less than ten minutes, but if
23 you need a full ten minutes, let me know.

24 A. Let's say ten minutes.

25 Q. So come back at 10:13?

1 A. Yep.

2 Q. Okay. Thank you.

3 (Break 10:03 a.m. until 10:13 a.m.)

4 BY MS. PREMRAJ:

5 Q. Dr. Bederson, starting in paragraph 111 of
6 your declaration, you discuss something called the Eight
7 Golden Rules of Interface Design. Do you see that?

8 A. I do.

9 Q. Those are Shneiderman's Eight Golden Rules,
10 right?

11 A. Yes, that is right.

12 Q. Would you consider these Golden Rules
13 engineering specifications?

14 A. I would probably use the term more like design
15 guidelines. I would have to look to see how Shneiderman
16 himself specifically described them. But I think of
17 these as fundamental guidelines that the user interface
18 designer would consider in the design of a wide variety
19 of systems. They are general principles.

20 Q. One of those principles, one of the Golden
21 Rules, that is consistency, right? You cite that in
22 your declaration?

23 A. Yes.

24 Q. Does Shneiderman's consistency rule tell you
25 what information a system needs to achieve the

1 consistency?

2 MR. TAMBURRO: Object to form.

3 THE WITNESS: In paragraph 112, I give some
4 examples that Shneiderman provides that the
5 consistency rule applies to, but it is not limited
6 to those. But, for example, he describes
7 consistent color layout, capitalization fonts and
8 so on should be employed throughout.

9 BY MS. PREMRAJ:

10 Q. Does Shneiderman's consistency rule, does it
11 tell you where that information should be stored?

12 A. I don't recall.

13 Q. Does it tell you whether the information
14 should be stored on the device or on the server?

15 A. I don't recall. I don't think so.

16 Q. Does it tell you whether the information
17 should be hard coded or received dynamically?

18 A. I don't recall it.

19 Q. Does it tell you whether that information
20 should be delivered to the device?

21 A. Sorry. I missed a word. Could you repeat
22 your question?

23 Q. Sure. Does it tell you when the information
24 should be delivered to the device?

25 A. I don't recall.

1 Q. Let's talk about this consistency principle.
2 Let's say a designer wants to achieve consistency in how
3 long an overlay remains on a screen. One way to do that
4 is to hard code a single timeout value into the device
5 one way, right? One way?

6 A. Well, if one device had a hard-coded time,
7 then that might not be consistent with other devices.

8 Q. So my question was, suppose the designer wants
9 to achieve consistency in how long an overlay remains on
10 a screen. So for that goal, one way to do that is to
11 hard code a single timeout value into the device, right?

12 A. Well, what I'm saying is, that would not
13 achieve consistency across multiple devices necessarily.

14 Q. My question was not about whether it would
15 achieve consistency. I'm just asking, is that one way
16 that you could do it?

17 MR. TAMBURRO: Object to form.

18 THE WITNESS: Well, the answer is no, it would
19 not result in consistency across devices.

20 BY MS. PREMRAJ:

21 Q. But it would resolve consistency across
22 content, right?

23 A. It would not result in consistency across
24 content across multiple devices if the different devices
25 had different hard-coded timeout values.

1 Q. But would it result in consistency across
2 content in that device?

3 A. It might for that one device, but that would
4 still not meet the design guidelines of being consistent
5 even for a single user which might have multiple
6 devices.

7 Q. But the design guidelines don't say anything
8 about multiple devices, right? They just say
9 consistency?

10 A. The design guidelines as I quoted does
11 describe that consistency should be employed throughout,
12 which I think a POSITA would understand means throughout
13 the system, and that system could include multiple
14 devices.

15 Q. Sure. I think you got a little ahead of me
16 there, so now I'll go to that instance.

17 So one way that a POSITA could achieve
18 consistency across multiple devices is, like, through a
19 server, right? Delivering a timeout value through a
20 server that is the same for all the content, right?

21 A. Yes.

22 Q. And that would be consistent?

23 A. If a server provided the same timeout value
24 across all the devices, then that same value was used
25 across all the devices, so it implemented that same

1 timeout value, then, yes, that would have a consistent
2 timeout value across those devices.

3 Q. And across those devices, if the same timeout
4 value was used for different content, that would also be
5 consistent, right?

6 A. If the same timeout value was used for
7 different kinds of content across multiple devices, then
8 the user would find that the timeout value was the same
9 in that scenario, so that would be consistent.

10 Q. Now, suppose a designer wanted to achieve
11 consistency in which kind of an operation panel was
12 displayed. One way to do that would be to show the same
13 panel for all content, right? That would be consistent?

14 A. It sounds like that would consistently display
15 the same panel in those scenarios.

16 MS. PREMRAJ: Dr. Bederson, I'm just going to
17 review my notes for a second. Could we take
18 another quick five-minute break and I'll get back
19 to you?

20 THE WITNESS: Okay.

21 MS. PREMRAJ: Thanks so much. We'll be back
22 at 10:27. Thanks so much.

23 (Break 10:22 a.m. until 10:26 a.m.)

24 MS. PREMRAJ: Thank you, Dr. Bederson, for
25 allowing me that time. I think those are all the

1 questions I have for you today. Thank you so much.

2 MR. TAMBURRO: Thank you. I'm going to ask a
3 couple of follow-up questions.

4 CROSS-EXAMINATION

5 BY MR. TAMBURRO:

6 Q. Dr. Bederson, can you please turn to
7 paragraph 52 in your report?

8 You were asked about level of ordinary skill
9 in the art earlier. Correct?

10 A. Yes.

11 Q. Do you see in paragraph 52 where you say,
12 After reviewing the '091 Patent, the relevant portions
13 of the prosecution history of the '091 Patent, and cited
14 references, it is my opinion that the relevant art of
15 the '091 Patent is in the field of visual interfaces for
16 content or interaction? You see that?

17 A. I do.

18 Q. What do you mean by the relevant art is in the
19 field of visual interfaces for content selection or
20 interaction? What do you mean by that?

21 A. Well, I use that language because it is broad
22 language to describe a wide variety of visual interfaces
23 that can work on many different kinds of systems for
24 many different kinds of content, including their
25 selection or interaction. So it is a broad description

1 that certainly includes the media election described in
2 the '091 Patent.

3 Q. Are there any examples you can provide of
4 visual interfaces for content selection or interaction?
5 Any types of examples?

6 A. Sure. I think those include graphical user
7 interfaces with menus and including content, such as
8 video or audio, as well as interactive content where a
9 user can interact with content to control what is then
10 displayed afterwards. And the selection or interaction
11 aspect describes how a user would interact with those
12 graphical user interfaces on that content.

13 Q. Would relevant products include set-top boxes?

14 A. Yes.

15 MS. PREMRAJ: Objection; form.

16 BY MR. TAMBURRO:

17 Q. Any other examples of devices that would fall
18 into that category?

19 A. It would include video on-demand systems, DVD,
20 DVRs, and other kinds of systems for interacting with
21 digital content and video.

22 Q. Okay. Thank you.

23 And if you turn to page -- I'm sorry --
24 paragraph 53 of your declaration, right underneath where
25 you were just reading.

1 Do you see where you say, A POSITA at the time
2 of the alleged invention of the '091 Patent, August 30,
3 2005, would have had a bachelor's degree in computer
4 science, electrical or computer engineering, or a
5 comparable field of study, plus approximately one or two
6 years of professional experience with user interface
7 design for mobile drives or other relevant industry
8 experience? Do you see that?

9 A. I do.

10 Q. What are you referring to when you say or
11 other relevant industry experience?

12 A. Well, as I think I had explained in my earlier
13 answers today regarding this, a person with a bachelor's
14 degree in computer science, electrical or computer
15 engineering, or a comparable field of study would
16 include a study of a wide range of computing systems,
17 including not only client-server architectures but also
18 embedded devices such as set-top boxes. And by other
19 relevant industry experience, I was referring to working
20 with those kinds of systems in industry.

21 So a person whether because -- through, for
22 example, an internship while they were getting their
23 degree or in their industrial experience after they got
24 the degree, would have experience working with all of
25 those kinds of devices and architectures.

1 Q. Okay. Thank you.

2 MR. TAMBUR0: I have no further questions.

3 MS. PREMRAJ: No follow-up for me either.

4 (Proceedings concluded at 10:32 a.m.)

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I, MICHELLE PULIDO STUBBEN, RPR, FPR-C Court Reporter and Notary Public, certify that I was authorized to and did stenographically report the foregoing deposition of BENJAMIN BEDERSON, PH.D.; that a review of the transcript was requested; and that the transcript, Pages 4 through 55, is a true record of my stenographic notes.

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6 I, MICHELLE PULIDO STUBBEN, RPR, FPR-C,
7 Court Reporter and Notary Public, State of Florida,
8 certify that BENJAMIN BEDERSON, PH.D. personally
9 appeared before me by videoconference and was duly sworn
10 on May 22, 2026.

11

12 WITNESS my hand and official seal this
13 22nd day of May, 2026.

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3 DEPOSITION OF: BENJAMIN BEDERSON, PH.D.

4 TAKEN: May 22, 2026
5 JOB NO. 7122451

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1 WITNESS NOTIFICATION LETTER

2 May 29, 2026
3 BENJAMIN BEDERSON, PH.D.
4 C/O: SAL TAMBURRO, ESQ.
5 DLA PIPER, LLP
6 33 Arch Street #26
7 Boston, MA 02110

8 In Re: SAMSUNG ELECTRONICS CO., LTD. vs. MAXELL, LTD.
9 Deposition, taken May 22, 2026
10 Job No. 7122451

11 The transcript of the above-referenced proceeding has
12 been prepared and is being provided to your office for
13 review by the witness.

14 We respectfully request that the witness complete their
15 review within 30 days and return the errata sheet to our
16 office address or via e-mail:

17 Sincerely,

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MICHELLE PULIDO STUBBEN, RPR, FPR-C

0	1F 18:7	able 21:18 25:23 28:23	allowing 47:25
091 6:6 7:7 8:6, 12 11:10 48:12,13,15 49:2 50:2	1G 38:5	abstract 40:2	amount 29:17
1	2	academic 15:5,9	analysis 17:14 20:8 21:9 29:5 31:8 41:21, 24
103 12:15	2005 11:10,12 12:1,3,25 13:16,19 14:8 50:3	access 11:23 12:8, 16 13:8 14:4,5,7,16, 19	analyze 25:22 26:12 28:5
107 18:8	3	accessed 16:1	analyzed 11:20 23:8 35:23
109 18:10	30 11:10 50:2	accessing 14:3,14	answer 5:1,8 13:13, 21 17:20
10:03 42:19 43:3	34 35:7	achieve 43:25 45:2, 9,13,15 46:17 47:10	21:8,10,18 22:3 27:3 30:2 31:12 41:17 45:18
10:10 42:20	36 35:6,7	across 45:13,19,21, 23,24 46:1, 18,24,25 47:2,3,7	answered 13:15
10:13 42:25 43:3	394 7:3,5,6,12, 22	add 16:9 28:17	answers 11:24 50:13
10:22 47:23	5	additional 29:19	anyone 5:21
10:26 47:23	52 48:7,11	addressed 12:7	apologize 8:16
10:27 47:22	53 8:20,25 9:2, 21,25 49:24	adds 28:15	appears 17:23
10:32 51:4	9	affirm 4:4	application 35:4
110 18:23 35:3	98 12:12	afterwards 49:10	applications 35:5
111 43:5	A	agree 14:3,19 25:14 28:7 33:3	applies 44:5
112 44:3	a.m. 43:3 47:23 51:4	agreed 32:23	apply 16:10,21 17:11
113 24:17	ability 24:11 29:4	ahead 46:15	applying 25:25
114 38:5		alleged 50:2	approaches 13:24 14:2, 10
15 14:23			
1E 12:11			

approximately 9:12 50:5 architect 41:12 architectural 14:2 architecture 13:24 21:22 architectures 10:8,11,13, 15 11:6 50:17,25 art 6:7 7:10,17 8:22 12:14, 19 14:15 21:5,7 37:9, 12,16,19 38:8,19 42:11 48:9, 14,18 asked 13:23 19:10 48:8 asking 8:13 20:20, 21 24:3 26:20 32:1,2 35:9 45:15 aspect 49:11 aspects 19:16 29:15 associated 36:18 attributes 38:7 audio 49:8 August 11:10 50:2 automatically 18:11,16 available 29:22	B bachelor's 9:8 11:1 50:3,13 back 11:12 26:1 42:19,20,25 47:18,21 bar 15:22 based 11:14,25 12:4 13:2,4, 6,20 17:13 19:15,16 20:1 Bederson 4:9,15,20 14:23 20:17 42:17 43:5 47:16,24 48:6 beginning 17:1 believe 7:14 Benjamin 4:9,20 best 36:14 bit 14:24 booting 31:20 box 15:12,14,17, 21,23 16:11, 14,21,24 17:4,11,14, 19 20:5,23 21:17,24 22:6,13,20, 24 23:5,13 25:17 26:6, 22 28:13	29:12 30:6, 7,15,19,23 31:4,15,19 32:6,11,15, 22,25 33:4, 5,8,14,21 34:3,9,12, 14,23 35:9 36:17 box's 23:18 boxes 10:1,3 15:16 21:1 22:22, 25 23:2,4,9, 10 30:21 31:9 49:13 50:18 break 5:6,8 42:17 43:3 47:18, 23 breaks 5:5 broad 48:21,25 broadcast 10:8,11 browse 18:10 37:1 browsing 20:11 23:22 build 40:14 41:12 built 41:15 button 16:24 17:5, 18 18:1 19:9 20:4,21 21:16 22:6 37:18 38:24 39:2,3,13,23 40:7,11,15, 20 buttons 18:14 20:13	42:14 C call 9:23 10:2,6, 10,14 36:21, 22 called 4:10 15:12 43:6 calling 36:21 capitalization 44:7 case 12:18 15:18 23:2,10,13 24:9,24 32:3,6 33:12 39:16,19 category 49:18 centrally 24:21 certain 18:4 29:17, 18 certainly 8:2 10:24 11:7 12:18 14:15 19:18 23:10 49:1 change 16:23 17:4 19:8 changed 28:21 changes 20:5,22 21:17 40:4 changing 18:16 39:13 40:17
---	---	---	--

characteristics 19:23 26:14 27:20 29:3 30:1 42:2 check 7:23 choice 14:7, 13, 16 29:8 choices 13:20 23:19 25:20 26:8, 16 28:8 30:8 41:9 choose 23:25 24:10 27:24, 25 38:9 39:19 40:25 circumstances 38:11 cite 43:21 cited 48:13 Claim 12:11 18:7 claims 8:9 clear 13:7 22:9 25:11 clearly 14:6 18:15 20:4 client 29:23 client-server 11:5 50:17 clocks 22:22 23:3 code 16:1, 17, 20 17:8 23:25 24:11 28:12 29:12, 16	30:6, 10 31:4 45:4, 11 coded 26:6, 25 30:20 31:16 32:24 33:5, 9 44:17 coding 23:18 30:14 32:15, 22 color 44:7 combine 38:8 combined 26:19 come 12:20, 22 16:19 17:11 19:1, 20 23:23 30:8 37:3 42:19, 20, 25 comes 19:18 20:2, 14, 19 22:11 27:19 29:24 communicate 33:1, 2 communicating 21:23, 25 22:1 33:4, 9, 15 communication 11:5 41:16 communication s 21:2 35:7 comparable 9:9 11:3 50:5, 15 compared 28:20 compensated 6:17, 19, 24 completely 17:15	complexities 28:16 complexity 28:18 component 15:12 computer 9:8, 9 11:2 17:8 19:15, 23 21:25 50:3, 4, 14 computers 32:23 computing 15:24 16:10, 16 50:16 concluded 51:4 configuration 24:23 25:5, 7, 25 configuration s 25:1 configure 24:15 25:15 configureable 24:14 25:18 configured 24:21 confirm 8:24 connected 35:6 consider 17:9 21:11 29:2 43:12, 18 considered 9:20 considering 17:8 consistency 24:20 43:21, 24 44:1, 5, 10 45:1, 2, 9, 13, 15, 19, 21, 23	46:1, 9, 11, 18 47:11 consistent 44:7 45:7 46:4, 22 47:1, 5, 9, 13 consistently 47:14 contact 23:6 content 15:14 24:22 35:19 36:2 37:13 40:12 42:14 45:22, 24 46:2, 20 47:4, 7, 13 48:16, 19, 24 49:4, 7, 8, 9, 12, 21 context 40:12 control 15:19 17:12 18:1 19:2 20:13, 22 21:1, 16, 23, 24 22:1 37:18 40:16 42:14 49:9 controlled 20:12 correct 6:12 7:7, 10, 13, 25 8:18 9:22 10:5, 9, 13 13:3 14:18 15:2, 5, 12 20:6 24:15 34:10, 16 36:18 37:14 42:8 48:9 correctly 4:16 7:21 counsel 6:11
---	--	--	--

couple 48:3	default 26:25 34:15	49:11	13, 19, 24
cover 8:8	definition 8:22 9:4, 7, 21, 25 10:4	describing 13:18 17:7 22:3, 17 24:8 26:11 29:5	46:6, 8, 14, 18, 24, 25 47:2, 3, 7 49:17 50:18, 25
CROSS- EXAMINATION 48:4	11:9, 25 21:12	description 16:10 48:25	difference 37:24 38:14
cut 17:1	definitive 30:2, 25	design 9:14 14:11 23:20 25:20 26:8, 16 29:8 40:3, 6, 19 41:6, 8 42:1, 13 43:7, 14, 18 46:4, 7, 10 50:7	different 6:24 13:24 14:2, 10, 11, 18, 19, 21 16:4, 7, 12, 18 19:7, 12, 14 25:19 26:7, 20 37:13 38:10 40:25 41:15 45:24, 25 47:4, 7 48:23, 24
D	degree 9:8 11:1 50:3, 14, 23, 24	designed 30:7 34:24 35:1, 12, 15	differently 26:2
D.C. 5:14	delivered 13:17 44:20, 24	designer 10:20 39:19 40:5 43:18 45:2, 8 47:10	digital 49:21
data 16:17, 20 17:9 19:17, 18	Delivering 46:19	designing 10:21	DIRECT 4:13
decide 13:8 17:9	delivers 33:18	designs 26:20	directly 21:23
decided 11:13 12:4 13:1, 2	delivery 11:6	detail 30:3	disabled 39:23 41:5
decides 39:3	depend 17:15 29:14 30:23 35:23 36:3, 10	details 17:15 21:20	disappear 22:12 37:23
deciding 38:3	depends 15:17 26:24 29:9 30:12, 13	determine 23:14, 22	disappearing 36:18
decision 13:11 14:4, 5 16:2 19:25 30:10, 11 39:12 41:6, 11	deposed 4:21	device 9:17 10:20 11:13 12:23 13:12 14:16 15:20 17:12 19:19 24:12 26:2 27:25 28:1 44:14, 20, 24 45:4, 6, 11 46:2, 3	disappears 18:3 29:18 37:17
decisions 19:15	deposition 4:25 8:14 10:16	devices 5:23 9:14, 20 10:23 12:4, 8 21:1 45:7,	disclose 33:13 40:10, 24
declaration 6:6 7:11 8:5, 15, 16, 21 12:9, 10 13:4, 7 14:24 18:6 19:24 21:4, 12 24:6, 18 28:2 37:8 41:21 43:6, 22 49:24	describe 12:12 46:11 48:22		disclosed 39:16 40:1
	described 9:11, 16 18:23 19:6, 25 21:6 23:20 43:16 49:1		discloses 12:16 18:23 25:12 28:3 33:12 36:20 37:9 38:7
	describes 34:19 35:1 36:24 44:6		

41:22, 24 42:10 disclosures 12:13 18:8 discuss 12:12 43:6 discussed 19:9,10 38:2 displacing 42:15 display 11:14 12:4 13:2,17,20 15:14,19,23 16:2,17,23 17:4,9 18:10,11,12, 16 19:3,8 20:5,22 21:16 30:8 31:11 38:3, 9,10,20 47:14 displayed 16:13 18:14 24:2 36:6 39:9 40:11, 17 42:2 47:12 49:10 displaying 15:25 29:24 37:25 38:15 39:4 displays 15:21 DLA 5:14 documents 6:8 8:2 doing 14:21 36:14 double-check 8:1 drives 50:7 duly 4:10	DVD 49:19 DVRS 49:20 dynamically 44:17 E e.g. 18:12 earlier 35:17 48:9 50:12 Eight 43:6,9 either 26:6 51:3 elapsed 18:17 election 49:1 electrical 9:8 11:2 50:4,14 element 19:3 38:21 elements 20:11 21:3 41:1,4,10 42:3,15 embedded 50:18 employed 44:8 46:11 enabled 39:9,23 41:4,18 42:5,6 enables 40:6 enabling 37:24 38:15, 19 39:4 40:21 end 8:8	engineering 9:9 11:2 29:15 43:13 50:4,15 ensure 24:19 entail 29:13 entire 8:18,19 entirety 29:2 exactly 8:2 39:22 EXAMINATION 4:13 examples 9:20 44:4 49:3,5,17 executed 16:1 executes 16:17 33:15 executing 17:8 existed 12:1 expect 34:24 experience 9:13,15 10:21 14:25 32:10,25 50:6,8,11, 19,23,24 explain 11:23 20:10 24:18 explained 12:15 14:6, 12 21:6 32:24 35:2 38:6 41:23 50:12 explaining 28:6 37:7	explains 13:19 18:9 37:2 external 19:18 extra 28:17 F factor 5:5 factors 16:19 29:9 fair 15:8 25:5 37:15 fall 49:17 familiar 10:25 11:3 12:14 14:13 18:15 30:21 31:9 36:16 family 6:20,25 7:6 far 31:2 40:17 fast-forward 38:24 39:23 40:7,11,15, 16,20,21 41:4,5,18,19 42:5,7 feature 20:12 23:22 37:1 field 9:9 11:3 48:15,19 50:5,15 Fildes 5:20 file 8:11,18,19 find 47:8
--	---	--	--

fine 5:10 10:19 25:4 finish 5:8 16:8 first 4:10 22:1 28:10 five-minute 47:18 flip 8:23 18:10 20:11 23:22 36:25 flows 10:22 follow-up 48:3 51:3 follows 4:11 fonts 44:7 form 6:22 11:15 12:6 13:5, 25 16:15 18:5, 21 20:7 22:14 24:16 26:9 27:7, 15 31:6, 17 32:4, 17 34:12, 17 35:21 37:6 38:1, 17 39:6 44:2 45:17 49:15 Frank 18:7 front 6:2, 5 7:15, 18 full 4:18 42:23 fully 17:6 25:21 26:3, 10 27:16 28:6	39:18 function 31:21 functionality 40:22 functions 35:4 fundamental 43:17 G general 16:9 17:7, 12 19:23 31:2 35:9 41:17 43:19 generally 15:24 22:19 24:9 35:13, 14 36:19 39:18 40:2, 13 41:8 getting 32:18 50:22 give 4:5 5:1 21:10, 18 30:1 44:3 given 22:4 goal 45:10 God 4:7 goes 40:18 going 5:4 16:9 47:16 48:2 Golden 43:7, 9, 12, 20 good 4:15 42:16 graphical 19:3 36:25 41:1 49:6, 12	Great 5:11 ground 4:23 guess 34:5 guide 17:16, 17, 18, 23 35:3 guidelines 43:15, 17 46:4, 7, 10 H hand 4:2 happy 11:23 38:13 hard 23:18, 25 24:11 26:6, 25 28:12, 17 29:12, 16 30:6, 10, 14, 20 31:4, 15 32:15, 22, 24 33:5, 9 44:17 45:4, 11 hard-coded 25:17 26:21 27:5, 11, 18 28:11, 24 30:5 35:16, 17, 19, 25 36:1, 5, 12, 22 37:5 45:6, 25 hardware 29:19 head 5:1 hear 26:13 heard 33:23 help 4:6	hide 41:5 highly 33:7 Hillcrest 14:25 15:2 history 8:11, 18, 19 48:13 hour 5:5 42:16 hypothetical 21:21 22:2, 16 25:22 27:3 28:5 36:10 39:17 I icon 40:21 41:5, 19 42:7 icons 10:22 idea 18:16 ignore 39:3, 13, 20 imagine 5:4 13:13 22:8 30:9 implement 23:17 27:24, 25 28:8, 12 29:8 30:2 40:25 implementatio n 27:21 36:11 implemented 26:19 27:13 46:25 include 12:3 15:11 19:18 29:12, 18 31:4 33:19 34:6
--	---	---	---

46:13 49:6, 13,19 50:16 includes 49:1 including 11:4 19:17 22:10 23:11, 20 29:2 41:1 42:13 48:24 49:7 50:17 industrial 50:23 industry 9:14 50:7, 11,19,20 information 12:8,16,20, 22 13:8,21 14:7,14,16, 20 15:20 16:1,2 18:19,24 19:1,11 20:1,14,18 22:4,10,11, 25 23:5,10, 12 24:11 25:12,13 26:1 27:1,2, 6,8,9,19 29:24 30:22 31:10,11 32:23 33:13, 18,20,24,25 34:5,6,7,8, 10,11,20,24 35:2,10,12, 14,15 37:2, 20 43:25 44:11,13,16, 19,23 innumerable 29:14 input 19:19 20:1, 6,24 21:18 37:25 38:15, 20,22 39:4,	20 40:4,9 41:2,18 42:5 inputs 17:10,11 instance 46:16 instructions 13:17 19:17 interact 38:21 42:14 49:9,11 interacting 49:20 interaction 48:16,20,25 49:4,10 interactive 15:1,7,9,11 18:13 35:5 49:8 interface 9:13 10:18 20:10 36:25 40:18 41:1, 10 42:3,13, 15 43:7,17 50:6 interfaces 48:15,19,22 49:4,7,12 internship 50:22 interrelated 26:15 invention 50:2 involve 21:1 involving 6:20 IPR 6:15 7:12 issue 7:7 16:8 issues 11:22 12:8	item 24:1 36:25 K keep 32:2 kind 16:13 17:3, 18,19 29:4 40:9 47:11 kinds 11:4,7 16:12 19:16 28:16 47:7 48:23, 24 49:20 50:20,25 know 5:6 11:13 17:20 21:21, 22 22:2,17, 23 23:6,16 26:15 28:18 29:10,20,21 31:8,22 42:23 knowing 30:3,25 known 13:19 14:8 24:19 L label 18:1 Labs 14:25 15:2 lag 16:8 language 36:14 48:21, 22 laptop 5:24 layout 44:7	learn 29:10 length 23:21 level 14:20 48:8 Limitation 12:11 18:7 38:5 limited 11:7,9 22:4 44:5 linear 40:12 link 41:3,12 little 14:24 46:15 live 36:8 local 11:14,22 12:4,23 13:3 14:16 20:6, 23 21:2,17 24:11 29:22 33:14 locally 12:9 13:12 14:6 22:6 23:15 25:24 locations 19:19 logic 11:14 12:5 13:3 22:5 long 5:4 24:1 45:3,9 longer 18:14 look 39:7,22 43:15 lost 32:19
--	---	---	---

lot 22:25	8,12 mentioned 7:24 12:7 19:17	necessarily 45:13	okay 5:11,14,17 6:10 8:20 9:2 10:18,20 22:5 31:14 32:21 37:12 42:20 43:2 47:20 49:22 51:1
M	menu 15:22 36:6, 18 37:17,23	need 5:6 23:6 33:19 34:1, 2,10,14 42:23	on-demand 10:5,7 49:19
made 13:11 30:11	menus 10:22 36:6 49:7	needs 35:11 41:12 43:25	one 7:21 9:12 17:3 20:3 23:11,17 24:19 27:21, 25 29:8 38:19 43:20 45:3,5,6,10, 15 46:3,17 47:12 50:5
maintenance 29:3	mind 17:2 21:10	network 19:20 20:18 35:7	one-year 10:21
make 8:1 14:13,16 28:8 39:12 41:8,11	minute 18:13 37:1	never 31:15 32:3, 7,15	ones 32:25
makes 19:15	minutes 42:21,22,23, 24	notes 6:8 47:17	operation 18:14 31:21 38:3,9,10 47:11
making 13:20 14:3, 5,6	missed 44:21	number 18:4 38:7	opinion 11:17,19 13:10 20:25 21:4 24:6,8 25:11 28:2, 14,22 29:6 30:25 31:15 32:9 33:11 37:7 39:8 40:9,23 42:9 48:14
mark 42:16	misunderstood 33:22	o	opinions 7:2,4 11:24 38:2,4 39:15,25
material 7:14,18	mobile 9:14,17,20 10:20,23 11:13 50:7	Object 6:22 11:15 12:6 13:5,25 16:15 18:5, 21 20:7 22:14 24:16 26:9 27:7,15 31:6,17 32:4,17 34:17 35:21 37:6 38:1,17 39:6 44:2 45:17	option 24:4,13 25:3,8 42:8
matter 4:5 6:7,11 7:9,16,22 8:3 33:11 39:15,25 41:22	mode 6:1	Objection 49:15	
mean 9:17 14:1 19:14 33:6 36:13 41:19 42:6 48:18, 20	moment 20:23	obviously 5:6	
means 46:12	morning 4:15	occur 27:21	
mechanisms 19:8,13,15	move 35:8	offering 13:10	
media 11:6 31:11 49:1	movie 36:7	office 5:14	
meet 46:4	N		
memory 29:22	multiple 45:13,24 46:5,8,13,18 47:7		
mention 9:22 10:1,4,	name 4:16,18		
	navigation 10:22		

options 28:25	29:8 36:11	3, 8 36:20, 24	50:1
order 21:10	passage 37:17	37:4, 8 38:13	possible 15:19 20:25
ordinary 8:22 37:16, 19 48:8	passed 23:7, 15	39:16 40:1, 10, 13, 23	21:1, 2 22:7, 9 23:24
original 27:10	patent 6:20, 25 7:3, 5, 6, 7, 12	41:22, 24	29:25 31:3
outside 12:17, 21	8:6, 12 11:10	42:9	33:8, 14
40:12 41:23, 24	15:19 48:12, 13, 15 49:2	Phillips' 12:13 38:8	40:14
overlay 17:23 18:3	50:2	phone 5:25 10:23	practice 32:25
29:18 45:3, 9	Patents 6:6	phones 9:18	precisely 26:16
overwritten 27:1	PDAS 9:18	physical 40:15	PREMJAJ 4:14 7:1
	perform 25:5, 7 31:20	piece 35:19 36:2	9:1, 3 11:18
	performed 31:7	play 16:19	12:24 13:14
	period 19:3	playing 36:7, 8	14:9 16:22
	person 8:22 9:7	please 4:2, 18 16:8	18:18 19:5
	10:25 12:14, 19 14:14	48:6	20:16 22:21
	21:5, 7 34:19	points 19:25	25:2 26:17
	37:9, 12, 16, 19 38:7, 18	portions 48:12	27:12, 22
	40:2 42:11	POSITA 8:23 9:5	31:13, 25
	50:13, 21	11:9, 25	32:8, 20
	personal 5:25	12:21 13:7, 19 14:12, 21	34:22 35:24
	petitioner 6:15	18:15 20:21	37:11 38:12, 23 39:11
	PH.D. 4:9	21:11, 13, 14	43:4 44:9
	Phillips 7:10 8:4	23:19, 25	45:20 47:16, 21, 24 49:15
	12:16 13:18	24:5, 9, 18, 25	51:3
	18:9, 23	25:14 26:21	preparation 8:13, 14
	20:9, 20	27:23, 25	preparing 8:5
	21:6, 7 22:10	28:4, 7 29:1, 11 30:18	press 17:22 22:6
	23:11, 21	31:14 32:14	39:3, 13
	24:4, 7 25:11	34:7 35:14, 25 36:16, 23	pressed 19:9
	28:3 33:12	39:19 40:3, 6, 19, 24	presses 17:16 20:4, 21 21:16
	34:18 35:1,	41:3, 6, 8, 25	39:2
		46:12, 17	pressing 16:24 17:5
			19:9 20:13
			principle

45:1 principles 43:19, 20 prior 6:7, 20 7:9, 10, 16, 17 probably 7:19 13:13 23:12, 24 33:16 40:14 43:14 proceeding 6:15 7:25 8:6 proceedings 51:4 processing 29:22, 24 products 49:13 professional 9:13 50:6 program 17:17 35:3 programming 30:23 33:15 prosecution 48:13 protocols 11:5 provide 8:21 49:3 provided 7:2, 4, 12 9:4 11:17 27:5 46:23 provider 24:22 provides 25:12 44:4 pushed 37:18	5:7 11:21 12:25 17:1, 21 21:8, 10 22:3 23:9 26:5, 18 30:17 31:2, 3, 12, 19, 24 32:6, 13, 19 33:22 34:5 38:14 39:17 41:17 42:4 44:22 45:8, 14 questions 4:25 48:1, 3 51:2 quick 47:18 quote 35:3 quoted 46:10	receive 23:4 received 18:20 26:22 27:1 28:22 34:21 35:2 44:17 receives 34:9 35:10 receiving 34:11 recognized 12:22 record 4:19 refer 8:3 18:8 reference 7:10, 17, 20 referenced 6:7 references 7:24 8:3 48:14 referring 7:11 22:24 50:10, 19 refers 10:17 regarding 6:24 7:2, 4 11:22, 24 18:6 38:4 40:9 50:13 related 33:7 37:5 39:4 relevant 9:14 48:12, 14, 18 49:13 50:7, 11, 19 reliability 29:3 reliance 30:24 relied 7:9, 16, 25	rely 7:21 8:2 remains 45:3, 9 remote 16:25 17:5, 12, 23 18:1 20:13, 22 21:1, 16, 23, 24, 25 37:18 38:25 40:16 42:13 remove 36:24 removed 18:11 23:23 removing 19:2 repeat 44:21 repeating 17:2 rephrase 30:18 report 11:22 20:9 48:7 REPORTER 4:2 require 14:10 30:9 31:19 required 30:6, 14 31:3, 5 requires 32:2, 3, 7, 15 34:23 research 15:5, 10 resolve 45:21 respond 41:2 responding 12:11 20:5, 23 21:17
	R		
	raise 4:2 range 11:4 28:8 42:1, 12 50:16 read 34:10 37:4 reading 34:12 49:25 reads 37:17 reason 5:11 14:17 reasons 14:12 recall 7:3 17:25 44:12, 15, 18, 25 recalling 13:10		
Q			
question			

22:5 response 40:4 result 45:19, 23 46:1 resulted 25:25 results 16:2 retained 6:11 return 35:16 review 8:8, 11, 19 11:23 47:17 reviewed 8:6 reviewing 48:12 right 4:2 5:9, 14, 18 6:13, 15, 17, 21, 23 7:17 8:6 9:5, 10, 15, 23 10:1, 2, 6, 10, 14, 23 11:10, 14 12:1, 2 13:10, 15, 17, 24 14:11 15:15, 23 16:14, 25 17:17 18:3, 20 19:22 20:24 21:12 22:7 23:7, 18 24:4 25:10, 20 26:8, 21, 23 27:6, 14 28:12 32:1 33:21 34:2, 3, 25 35:12 39:14, 24 41:7, 13, 20 42:5, 19 43:10, 11, 21	45:5, 11, 22 46:8, 19, 20 47:5, 13 49:24 room 5:17, 19, 21, 25 rule 43:24 44:5, 10 rules 4:23 43:7, 9, 12, 21 run 22:13, 19 S Samsung 6:12, 14 saying 4:15 7:21 13:4 25:4, 9 26:13 30:13 32:2 45:12 says 35:3 scenario 17:6, 15 21:21 22:2, 16 25:22 26:3, 11 27:17 28:5 29:5 33:17, 19 35:9 36:10 37:21 39:10 47:9 scenarios 33:4, 7 47:15 science 9:8 11:2 50:4, 14 screen 15:15, 22, 25 16:3, 18 17:17 18:12 22:13 23:23	37:25 38:4, 16, 20, 22 39:5, 10, 14, 21, 22 40:4, 8, 11, 17, 20 41:2, 20 42:8 45:3, 10 second 47:17 seconds 18:4, 12 23:6, 14, 17 35:18 36:7 37:1, 18, 23 section 12:10 19:24 20:8 24:7 28:3 38:6 see 14:17 43:7, 15 48:11, 16 50:1, 8 sees 29:11 selection 48:19, 25 49:4, 10 send 25:9 26:1 27:9 33:24 34:1, 2 35:12, 15 sending 34:4, 6 sends 33:20, 23 35:13 separate 19:6 26:16 33:3, 6 separately 26:19 server 12:9, 17, 21 13:9, 17, 21 14:4, 7, 14 18:20, 24	19:1, 11, 20 20:2, 15, 19 22:1, 11 23:6, 23 25:8, 12, 25 26:1, 7, 23 27:2, 6, 9, 19 28:22 29:25 30:6, 8, 9, 11, 20, 22, 24 31:5, 16, 20, 22 32:2, 3, 7, 12, 16 33:1, 3, 4, 10, 13, 16, 17, 18, 19, 23, 24 34:4, 12, 21, 24 35:2, 6, 7, 10, 11, 13, 15 37:3 44:14 46:19, 20, 23 server-based 11:22 server-client 10:12, 15 server- provided 25:19 servers 21:2 22:25 23:5, 11 31:10 35:6 service 24:22 31:4 set 26:6, 7 set-top 10:1, 3 15:12, 14, 16, 17, 21, 23 16:11, 14, 21, 23 17:4, 11, 14, 19 20:5, 23 21:1, 17, 24 22:6, 13, 20, 22, 24, 25 23:2, 4, 5, 9, 10, 13, 18
--	--	--	---

25:17 26:6, 22 28:13 29:12 30:6, 7, 15, 19, 21, 23 31:4, 9, 15, 19 32:6, 11, 14, 15, 22, 25 33:4, 5, 8, 14, 21 34:3, 9, 12, 14, 23 35:9 36:17 49:13 50:18 setting 24:14 28:20, 21 settings 24:20, 21 shaking 5:1 sheet 8:8 Shneiderman 43:15 44:4 Shneiderman's 43:9, 24 44:10 show 36:8 40:20 41:4 47:12 showing 40:7 shows 41:19 sic 8:20 silent 6:1 simple 28:23 38:14 simpler 28:18, 19 29:7 simplest 24:19 28:11, 15, 24 single 30:14 45:4,	11 46:5 sitting 13:12 21:14 22:8 23:1, 13, 24 24:8 25:13 28:4 29:6 42:10 situation 17:22 30:5, 19 35:11 36:17 skill 8:22 12:14, 19 14:15, 20 21:5, 7 34:19 37:9, 12, 16, 19 38:8, 18 48:8 skilled 42:11 skills 14:11, 13, 15, 18 software 23:18, 20 24:1 28:9, 17 41:14 solution 28:15 sort 19:22 34:1 sounds 47:14 speaking 5:24 40:13 specific 21:9 22:17, 18, 24 23:8, 9 25:23 26:12 31:12 36:3 39:8 41:17 42:4 specifically 7:2 8:13 9:23 10:2, 6, 10, 14 11:17, 21 13:9, 10	17:25 19:25 20:9 24:3 43:16 specification s 43:13 start 28:10 start-up 31:20 started 5:7 starting 12:11 18:7 38:5 43:5 state 4:18 stored 22:6 44:11, 14 structures 11:6 studied 15:4, 6, 8 study 9:9 11:3 50:5, 15, 16 supersedes 27:6 supported 35:5 suppose 45:8 47:10 sure 8:1 14:1 17:3, 6, 18 19:14 27:4 30:5, 18 33:6 35:8 36:16 44:23 46:15 49:6 swear 4:4 sworn 4:3, 11 system 15:25 16:17	17:8 19:15, 16 21:9, 22 22:18 24:14, 24 25:18, 24 26:12, 24 27:18, 20 28:20, 21 29:2, 7, 15, 21 30:1, 9 36:4, 11 39:3, 8, 12 40:3, 5, 6, 14, 19 41:12 42:1 43:25 46:13 systems 9:22, 24 10:5, 7 11:12 12:1, 3 13:1, 16 15:1, 4, 6, 7, 9, 11 19:23 25:23 26:2 40:25 41:15 43:19 48:23 49:19, 20 50:16, 20
T			
take 47:17 talk 11:21 14:24 33:17 45:1 talked 25:16 28:10 35:17 talking 17:19, 20 26:4 29:21 30:4 31:1, 23 Tamburo 5:17 6:22 8:25 11:15 12:6 13:5, 25 16:15 18:5, 21 20:7 22:14 24:16 26:9 27:7, 15			

31:6,17 32:4,17 34:17 35:21 37:6 38:1,17 39:6 44:2 45:17 48:2,5 49:16 51:2 technology 31:23 television 9:22,24 15:1,7,9,11, 15 24:14 25:10 35:5 tell 15:23 21:15 28:23 43:24 44:11,13,16, 19,23 telling 36:5 tells 29:17 ten 23:6,14,17 35:18 36:6 37:17,23 42:21,22,23, 24 term 10:16,18 43:14 testified 4:11 testify 5:12 testimony 4:4 21:15 Thank 4:17 6:10 42:18 43:2 47:24 48:1,2 49:22 51:1 Thanks 47:21,22 thin 29:23	thing 17:3 25:20 28:10,12 things 9:18 10:22, 24 11:4,7 12:13 13:23 14:22 15:22 16:4,12,13 19:21 25:16 think 6:13,23 7:19,23 9:19 10:24 11:16, 21 12:18,21 13:9,15,21 14:14 15:8, 16,18,24 16:7,10 17:10,14 18:15 19:22 22:9,19 23:1,9,12, 19,24 24:9, 23,24 25:4 26:2,13,14, 24 29:1,14 30:16,19,22 31:8 32:10, 22 34:7,11, 18 35:13,14, 23 36:3,10 37:15,21 38:18 39:18 40:2,13,24 41:8,14,25 42:11 43:16 44:15 46:12, 15 47:25 49:6 50:12 thinking 19:21 22:18 thought 31:11 three 7:24 8:3 25:16,19 26:7,14,16,	20 28:24 time 5:4 11:10 15:1,18 18:13,17 19:4 20:14 22:10 23:12, 21 26:1 29:17 31:4 34:20 37:13 39:9 42:17 45:6 47:25 50:1 time-related 18:24 19:1 timeout 25:9,12,19 26:22 28:11, 24 30:5 33:20,24,25 34:4,6,7,8 35:17,18,20 36:1,5,12,22 37:5 45:4, 11,25 46:19, 23 47:1,2,3, 6,8 timer 18:3 19:10, 21 22:12,13, 19 23:14,16 24:20 25:13 26:5 29:13, 16 30:15 33:9,13,15 36:17 timers 20:1 23:2 timing 24:11 30:10 35:10 today 5:12 13:12 22:8 23:1, 13,24 24:8 25:13 28:5 29:6 42:10 48:1 50:13	told 37:21,22 tool 15:22 trigger 16:13,23 17:3 18:2,19 19:8,9 true 40:2 truth 4:5,6 truthfully 5:12 try 5:5 trying 19:7 tuning 20:11 turn 48:6 49:23 TV 17:23,24 20:22 29:11 36:8 38:25 39:3 two 9:12 13:23 18:13 27:20 33:3,6 37:1 41:3 50:5 types 49:5 typically 9:19 10:21 16:20 25:6 28:7
U			
Ucheta 8:4 Uchida 7:20 UI 10:17,20			

underneath 49:24 understand 6:14 12:25 17:6 19:7 20:4 21:5, 7, 20 22:16 23:25 24:10, 25 25:14, 21, 23 26:3, 11, 21 27:17 28:4, 7 29:20 30:13, 16 31:14, 18, 23 32:5 33:2 34:8, 20 35:25 36:9, 12, 15 37:10, 19, 22 38:19 39:18 41:25 42:12 46:12 understanding 10:17 13:3 17:13 29:11 32:14, 19 understands 37:13 understood 12:19 update 28:17 29:4 user 9:13 10:18 16:24 17:4, 10, 11, 16 19:19 20:1, 4, 10, 12, 21 21:15 24:15, 25 25:5, 7, 15, 18, 24 26:7 28:21 30:2 36:25 37:24 38:15, 19, 21, 22 39:2, 4, 20 40:4, 18 41:1, 2, 10 42:13, 15	43:17 46:5 47:8 49:6, 9, 11, 12 50:6 user's 15:15 v value 23:16 25:9, 17 26:25 27:5, 10, 11, 18 33:20 34:2, 6, 8, 10, 13, 15 45:4, 11 46:19, 23, 24 47:1, 2, 4, 6, 8 values 45:25 variety 43:18 48:22 various 4:24 verbal 5:1 video 10:4, 7 49:8, 19, 21 visible 39:20 41:9 visual 48:15, 19, 22 49:4 w Wallace 7:17 8:4 38:6 39:17 40:1 want 42:20 wanted 29:16 41:3 47:10	way 23:17 27:13, 23 34:18 38:19 41:17 45:3, 5, 10, 15 46:17 47:12 ways 14:19, 21 15:17 24:19 37:13 40:25 41:14, 15 42:12 wide 11:4 42:1, 12 43:18 48:22 50:16 witness 4:10, 12 6:23 9:2 11:16 12:7 13:6 14:1 16:16 18:6, 22 20:8 22:15 24:17 26:10 27:8, 16 31:7, 18 32:5, 18 34:18 35:22 37:7 38:2, 18 39:7 44:3 45:18 47:20 word 44:21 work 5:2 6:17, 20, 24 14:24 21:3 26:2, 14 32:11 41:9, 10 42:3 48:23 working 14:25 22:19 50:19, 24 works 21:6 22:10 25:24 30:23 34:19 36:1 wrote 9:17	y yeah 9:1 20:17 32:9 40:13 years 9:13 50:6
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