

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3

Case IPR2024-00752 and IPR2024-00753
4 Patent 8,849,652

5 -----X

6 GOOGLE, LLC,

7 Petitioner,

8 -against-

DIALECT, LLC,

9 Patent Owner.

-----X

10
11
12
13 June 20, 2025

14 12:00 p.m.
15

16 DEPOSITION of CHRISTOPHER SCHMANDT,
17 Petitioner's Declarant herein, taken by the
18 Patent Owner, pursuant to Notice, held via
19 Zoom, before Lisa H. MacDonald, RPR, and Notary
20 Public of the State of New York.
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A P P E A R A N C E S : (Remote)

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1 C. Schmandt

2 C H R I S T O P H E R S C H M A N D T , after
3 having first been duly sworn by a Notary Public
4 of the State of New York, was examined and
5 testified as follows:

6 EXAMINATION BY

7 MR. WILSON:

8 Q. Please state your name for
9 the record.

10 A. Christopher Schmandt.

11 Q. What is your present home
12 address?

13 A 4 Longfellow Road,
14 Winchester, Massachusetts 01890.

15 Q Good afternoon,
16 Mr. Schmandt. We are here today to talk
17 about your reply declarations in the 752
18 and 753 proceedings. Do you have those
19 available?

20 A 75 -- I know them -- I know
21 them by patent number. Yes, I do.

22 Q And the exhibit for the 752
23 proceeding is Exhibit 1017; is that
24 right?

25 A I'm not sure what you're

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asking.

Q The exhibit number that you have on your papers, it's labeled Exhibit 1017; is that right?

A Yes, it is.

Q And it's 26 pages?

A Indeed.

Q And 35 paragraphs?

A Yes.

Q And that's your signature?

A Yes, it is.

Q And then the 753 proceeding, it's Exhibit 1016; is that right?

A Yes, it is.

Q And it's 28 pages?

A Yes.

Q And 47 paragraphs?

A Yes.

Q And is that your signature at the bottom?

A Yes.

Q Are the opinions in Exhibits 1017 and 1016 your opinions?

A Yes, they are.

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2 Q And do you have any other
3 opinions regarding this case that aren't
4 expressed in your prior declarations and
5 in these reply declarations?

6 A No, I don't.

7 Q Is there any reason today
8 you can't give true and accurate
9 testimony?

10 A No reason.

11 Q I'd like to first start with
12 Exhibit 1005, which is the Ross
13 reference. Do you have that available?

14 A Yes. I have it now.

15 Q What does Ross do after its
16 speech center recognizes the phrase print
17 it?

18 MR. MACE: Object to form.

19 A Well, I think I actually
20 discuss this in my declaration, so I'd
21 like to go there first. Is this the 160
22 patent or the --

23 Q It's the 753 proceeding.

24 A Okay. Can we refer to them
25 by patent number because those proceeding

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2 numbers mean nothing to me?

3 Q Certainly. It is the --

4 A That's all right. It's 160.

5 Q 160 patent, yes.

6 A Right. So I think I mention
7 this in my declaration. To save time,
8 can you direct me to some location or do
9 you think it's not there?

10 Q I was hoping to get your
11 understanding of Ross.

12 A Well, if I have talked about
13 it in my declaration, then I would like
14 to start there so I will find it, look
15 and see if I can find it.

16 MR. WILSON: Madam Reporter,
17 have we lost Mr. Schmandt? I don't
18 see his video.

19 MS. REPORTER: I think he
20 turned off his camera.

21 THE WITNESS: I'm sorry. I
22 must have just hit a key with my
23 document. I didn't know I could do
24 that. I thought I had to use the
25 mouse. Not intentional, sorry.

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2 A Okay. I don't see any
3 explicit reference to it in my
4 declaration, so I'll take a look at
5 the -- you used the example print it,
6 correct?

7 Q Correct.

8 A Okay. So that is discussed
9 in paragraph 53 of Ross. If the sentence
10 is print it, however both grammars are
11 capable of accepting the utterance, the
12 context manager therefore has to make a
13 choice by referring to the context list
14 on applications in order of recency of
15 access. The context manager 50 tests the
16 utterance against these grammars
17 indicated by the context 70 in the
18 context link 62 in priority order and
19 passes the commands on to the first
20 application 26 that has a grammar that
21 will accept the phrase.

22 Is that sufficient?

23 Q So when the system in Ross
24 recognizes print it, it immediately goes
25 to the priority order in the context

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2 list; is that fair?

3 A Well, first it has to --
4 first it has to make a determination of
5 which of the contexts will, as Ross says,
6 is capable of accepting the utterance.
7 So it has to look at the contexts to see
8 which is capable of accepting the
9 utterance, i.e. the user's utterance
10 matches the grammar in the context for
11 that application and upon finding that
12 there are multiple matches, then it is
13 going to use recency order.

14 Q So there's two phases of
15 this recognition to your understanding.
16 The first phase is to take the phrase,
17 print it and compare it to all of the
18 grammars for all of the applications; is
19 that fair?

20 A I'm not sure Ross says,
21 (inaudible), but these are the operations
22 that are performed, but I don't
23 (inaudible) --

24 MS. REPORTER: You
25 completely cut out. I don't know if

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it's because you're holding the paper
in front of you or it's because of
your microphone, but you completely
faded at the end and it was muffled.

(The requested portion was
read back by the Court Reporter.)

THE WITNESS: Okay. Why
don't you read me my response and
I'll continue from what you have
recorded?

MS. REPORTER: I just read
it. I'll read it again.

(The requested portion was
read back by the Court Reporter.)

A Well, let's just say I am
not -- it's not clear to me that Ross
necessarily specifies the temporal order
that your question asked because these
could be done as part of the same process
in parallel.

Q So what do you mean by the
same process in parallel when you need to
determine, as I understand your theory,
first whether multiple applications match

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2 the grammar?

3 A So one way to do that is to
4 look at the context for an application
5 and see whether that application will
6 accept the grammar. In that case you add
7 the application number or the stack frame
8 or something to a list of candidate
9 contexts and you do that and if these
10 contexts are -- let's say they're in
11 numerical order, then you can do that and
12 if you find other matches, you would put
13 them in that list, too and then you would
14 take the one with the smallest number.
15 That would be the most recent one.

16 Now, you could -- but you
17 could also simply when you found the
18 first match you could stop, but elsewhere
19 Ross says that you don't just stop at the
20 first one, that you look for other ones
21 that may be a better fit. Now, that's
22 only in the case of a partial match and
23 Ross does give us a grammar.

24 So in this case, yes,
25 print -- print it is a perfect match for

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2 that grammar, for the calendar grammar
3 and for the mail grammar.

4 Q Where in Ross is there a
5 partial match?

6 A Okay. I misspoke. I don't
7 see reference to a partial match.

8 Q In your process or your
9 understanding of Ross, does Ross iterate
10 through all of the applications once it
11 receives the phrase print it?

12 A Well, Ross -- okay. So what
13 I said earlier, I said partial match, I
14 want to backtrack on that because that's
15 explained in the paragraph before.

16 The question is whether a
17 match is unique to a particular grammar
18 or whether it could be resolved by
19 multiple grammars, right. So as it says
20 in previous met -- in previous paragraph
21 52, if the speech center hears a phrase
22 such as print the first message or print
23 the first appointment, the context
24 manager can readily figure out the
25 intended application, only one grammar

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2 will accept the phrase and that's the one
3 to be targeted.

4 Okay. So the print it, the
5 issue there is that multiple grammars
6 will accept the phrase. So if multiple
7 grammars will accept the phrase, in order
8 to determine that we have to test against
9 the multiple grammars. Presumably this
10 can be done in different ways. One could
11 be -- one way to do it is to label --
12 label the grammars whether they're unique
13 or confusable and then when you see a
14 match against a grammar phrase that you
15 know is confusable because you know the
16 grammars in advance, then you know you
17 can't stop there, okay.

18 Another way to do it is to
19 continue looking down the context list to
20 see if any other grammars match.

21 Q And what way do you think
22 Ross teaches?

23 A I don't think Ross -- Ross
24 is not limited to one or the other.

25 Q So this initial process of

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2 resolving whether more than one
3 application can process the grammar
4 doesn't involve Ross' context list; is
5 that fair?

6 MR. MACE: Object to form.

7 A I'm sorry, I -- perhaps I
8 didn't understand the question. Could
9 you ask it again?

10 Q Sure. In this initial
11 process of determining whether more than
12 one grammar would accept a phrase, is
13 Ross' context list used?

14 A Yes. I believe the grammars
15 are stored in the context list.

16 Q So it would be your
17 understanding that upon receiving a
18 phrase, Ross would iterate through the
19 entire context list or examine the entire
20 context list; is that fair?

21 A First I want to note that
22 the obvious argument here is not Ross in
23 isolation. It's Ross in combination with
24 Kennewick. Kennewick gives us more
25 information about what's stored in the

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2 context stack.

3 Whether Ross would feel the
4 necessity of to reversing the entire
5 context list is implementation dependent.
6 A lot of times when we are doing this, we
7 use a technique called pruning where even
8 though there are more things we could
9 search, we decide that anything further
10 down this list is highly unlikely.

11 So, for example, let's say
12 that I talked about my calendar and then
13 I went off and I did some work with
14 spreadsheets, maybe I looked at news from
15 the web or my Facebook page or -- and
16 then I go to my e-mail and I'm reading my
17 e-mail and then I see print it, okay, so
18 print it in this case would match the
19 calendar application and it would match
20 the e-mail application.

21 The calendar application --
22 I mean, sorry, the e-mail application is
23 at the top of this stack because I've
24 used it very recently, but the calendar
25 application is pretty far down, okay and

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2 must postulate further that we keep
3 timestamp, which is typical of these
4 kinds of system.

5 All right. So at some point
6 I look at the e-mail context and I can
7 say okay, print it will work here. Let's
8 just assume that print it doesn't work
9 for the browser page and the Facebook
10 page and the spreadsheet pages for the
11 sake of argument, right. Well, if I
12 haven't -- if I have -- if I start at the
13 top and look at those other contexts and
14 I see oh, well, you know, I was looking
15 at the browser 10 minutes ago, I don't
16 have to look any further back in the
17 past, so it could be a reasonable
18 implementation to say well, okay, I'm
19 going to just stop here. I don't have to
20 look any further because it doesn't make
21 any sense for somebody to say print it
22 referring to something they did 15
23 minutes ago.

24 You can say that if they're
25 going to refer to something that they did

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2 15 minutes ago, they should use a
3 complete utterance like print the
4 calendar entry. That's a possible
5 implementation. Ross is agnostic as to
6 exactly how that happens.

7 Q Well, let's look at figure 5
8 of Ross then in context with your print
9 it example. Do you have that?

10 A Yes. I'm there.

11 Q The top step 100 is a
12 decision block that's determining whether
13 it's a recognition message or a focus
14 message. Do you see that?

15 A Yes.

16 Q And if it's a recognition
17 message, then you move to step 106; is
18 that right?

19 A Yes.

20 Q And then it says that in
21 step 106 you go to the context list;
22 correct?

23 A Yes.

24 Q And then you start at the
25 top?

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2 A I'm sorry, was that a
3 question?

4 Q Yes. Do you start at the
5 top of the context list?

6 A Yes, you do.

7 Q And then you determine the
8 highest priority context that can process
9 the speech representation, do you see
10 that?

11 A Yes.

12 Q So in our example of print
13 it, according to figure 5, you would go
14 to the context list and determine the
15 highest priority context that can process
16 print it; is that right?

17 A Yes, yes.

18 Q And then you've pruned off
19 any of the other contexts that could
20 possibly also match print it in Ross'
21 system; correct?

22 A If you did a pruning
23 technique such as I discussed.

24 Q And such as disclosed
25 expressly in Ross; correct?

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2 A I don't believe Ross
3 explicitly discloses the pruning
4 technique that I described. That was my
5 interpretation as a possible
6 implementation of Ross.

7 Q And does Ross have any other
8 technique that doesn't go to the top of
9 the context stack and then stop as soon
10 as it reaches the highest priority
11 context?

12 MR. MACE: Object to form.

13 A If Ross -- starting at the
14 top of the context list, if Ross detects,
15 recognizes an utterance that it knows is
16 unambiguous, i.e. unique to that
17 application, then it needn't go any
18 farther.

19 So if it -- if the user
20 said, to use the example of this grammar,
21 if the user said print -- print the fifth
22 message, which would be an utterance
23 according to that grammar, Ross doesn't
24 need to look at anything else because
25 it's unique.

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2 Now, the question is how
3 does Ross know that it is unique? One
4 way of knowing it is unique to the mail
5 application is to look at every other --
6 every other context and find that nothing
7 matches it. That's one way of doing it.

8 Another is that when you
9 load the grammar, you could determine
10 that once and then you wouldn't have to
11 look at all the other context entries.
12 So the grammar could be marked as being
13 unique to that application.

14 Is it reasonable to say that
15 if the user says, you know, from a human
16 point of view is a user -- is it
17 reasonable to say that the -- if the user
18 says print the fifth message that that's
19 unambiguous? That's reasonable if it's
20 only one application that deals with
21 messages. If it's multiple applications
22 that deal with messages like instant
23 messages and e-mail messages, text
24 messages, then it wouldn't be unique.

25 Q So in those situations where

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2 it's not unique, it is ambiguous, doesn't
3 Ross tell you how to solve the ambiguity
4 by stopping at the highest priority
5 context that can process the speech
6 representation?

7 A It would know -- it would
8 only know to stop there if you use the
9 technique that I just described of
10 marking which grammatical phrases are
11 unique to that application. If it knew
12 that, then it wouldn't have to look at
13 the others.

14 If it didn't have the
15 grammar marked that way and Ross is
16 silent one way or another on that, if it
17 didn't have the grammar marked that way,
18 then it would have to keep going down and
19 ask -- basically look at the other
20 applications and see if the grammar for
21 the other applications would recognize
22 that -- that utterance.

23 Possibly looking at all of
24 them, possibly stopping at some point
25 because it's getting fruitless to look at

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2 the stack from the past.

3 Q Well, it seems to me that
4 doesn't make much sense to keep going
5 down the stack if Ross already knows it's
6 going to stop and use the highest
7 priority context. Why would it look at
8 lower priority contexts if it's already
9 received a match that fits?

10 A So Ross in isolation
11 wouldn't necessarily do this, you're
12 correct. But Ross in combination with
13 Kennewick may well do it because
14 Kennewick stores a lot more information
15 in the context stack than what Ross
16 stores or at least what Ross discusses
17 here.

18 What Ross discusses here is
19 simply having a grammar, okay. What
20 Kennewick discusses is having other
21 information, synonyms, history, things
22 such as that which can influence making a
23 more sophisticated decision.

24 Q In Ross, the grammars are
25 associated on a one-to-one basis with the

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2 applications; is that right?

3 A Mostly that is true. There
4 may be some universal grammar. Let's
5 see. So it also supports dictation
6 modality, which is not really talked
7 about in here, but it's a little
8 confusing. I mean in that case you're
9 using a -- you're not really using a
10 grammar, but I think we can ignore that.

11 No. The most I see is that
12 the grammar can change between whether
13 it's foreground or background
14 (inaudible). In these kind of
15 applications that (inaudible) --

16 MS. REPORTER: You
17 completely cut out. It's muffled.

18 (The requested portion was
19 read back by the Court Reporter.)

20 A In these kinds of
21 applications, it's -- it's often the case
22 that there will be some universal grammar
23 supporting terms like log out and things
24 like that that are not directed to a
25 specific application to the system, but

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2 Ross doesn't discuss those, so those are
3 off the table.

4 So that's -- so it is
5 basically, to get back to your question,
6 all the grammars are stored on the
7 context stack in Ross alone.

8 Q Now if you could turn to
9 figure 4 of Ross.

10 A Okay. I'm there.

11 Q Do you see there's a list of
12 context 70-1, 70-2, 70-3?

13 A Yes.

14 Q And those correspond to a
15 grammar for an application as we've been
16 discussing; right?

17 MR. MACE: Object to form.

18 A There is a grammar for the
19 application in the context associated
20 with that application. Each of those
21 contexts is associated with an
22 application and it includes a grammar.

23 Q If I were to want to update
24 the grammar for the context 70-3, how
25 would I achieve that?

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2 A I presume there would be a
3 mechanism whereby the application could
4 change the grammar and so inform the
5 system. We would call these dynamic
6 grammars and they are well known. I was
7 using dynamic grammars in the '80s.

8 When an application wants to
9 change grammar, it has to inform whoever
10 or whatever is going to use the grammar,
11 so it would certainly have to have some
12 way of communicating it to the context.
13 It may also need a way of communicating
14 it to the speech recognition hardware
15 because another aspect of this is that
16 the speech recognition hardware typically
17 has its own grammar in that it knows what
18 words it should listen to. So if I'm
19 talking about reading e-mail, I can't
20 order a pizza unless I have a pizza
21 application.

22 So presumably the change in
23 grammar could go both to the context --
24 to the context associated with that
25 application, as well as to the speech

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2 recognition and this is also consistent
3 with the idea that the grammar changes in
4 what Ross calls the foreground and
5 background mode.

6 Q If one were to update the
7 grammar in say 70-3, would that change
8 the order of where the grammar appears on
9 the context list?

10 MR. MACE: Objection.

11 Outside the scope.

12 A It may. It may not.

13 Q So it would be --

14 A I think --

15 Q Sorry, I cut you off.

16 A I think that's beyond --

17 that's beyond what Ross discloses.

18 Q It would be possible from an
19 engineering standpoint though to change
20 the context either without changing the
21 order or with changing the order; is that
22 fair?

23 A Yes. However, then we have
24 to go back to the question of why the
25 application would want to change, why the

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2 application would want to change the
3 grammar and the most likely reason to
4 want to change the grammar would be
5 because of something the user just said,
6 in which case the application was already
7 at or near the top of the stack.

8 I suppose it could also be
9 possible that the application might want
10 to change the grammar in response to some
11 external event in the e-mail or the
12 arriving of a phone call or something
13 like that. I don't know.

14 Q Let's talk a little bit more
15 about context stacks kind of generally
16 and if I had a context stack that had
17 entries ABCD and I had another context
18 stack that was entries DCAB, would a
19 POSITA consider that those two context
20 stacks are synchronized?

21 MR. MACE: Object to form.

22 A That would depend on how the
23 POSITA understood synchronized, which is
24 nuanced by what the application is
25 (inaudible) and what the context is. In

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2 some cases (inaudible) --

3 MR. WILSON: Madam Reporter,
4 are you --

5 A They are --

6 MS. REPORTER: Your audio is
7 terrible. You kept cutting out in
8 that whole answer.

9 THE WITNESS: Well, I can
10 exit the meeting and rejoin if you'd
11 like.

12 MR. WILSON: Let's go off
13 the record.

14 (A short recess was taken.)

15 Q Sorry for those technical
16 glitches.

17 A No. It was on my end, I
18 apologize, but --

19 Q I think we were in the
20 middle of you discussing how
21 synchronizing can be nuanced.

22 A Right. Whether or not --
23 whether or not order is a requirement for
24 synchronization depends on what the
25 stacks are being used for. Certainly I

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2 wouldn't say -- I would say that a stack
3 without different -- I would say a stack
4 with different ordering is not identical,
5 but that doesn't mean it is synchronized
6 and depending on what's going on with the
7 way in which the stack is being used,
8 synchronization may or may not require --
9 be required to be absolutely perfect.

10 Q So in your mind, a stack
11 that has entries ABCD could be
12 synchronized with a stack that is DCAB?

13 A Yes, if the synchronization
14 is at the level of the contents of each
15 of those stack entries.

16 Q In Ross where there is a
17 highest priority context and then lower
18 priority contexts in the stack, could
19 those two stacks be synchronized if the
20 two stacks have the different order, ABCD
21 and DCAB?

22 MR. MACE: Object to form,
23 outside the scope and complete
24 hypothetical.

25 A To the best of my

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2 understanding, Ross discloses only one
3 stack.

4 Q And if you assume Ross --
5 that there's two Ross systems each having
6 their own stack, would synchronization of
7 those stacks involve keeping the order
8 the same?

9 MR. MACE: Same objections.

10 A The Ross system runs on one
11 computer for one user. There would be no
12 reason to have two Ross systems on one
13 computer. If there were two Ross systems
14 on two different computers with two
15 different users, there would be no reason
16 to synchronize them.

17 What happens on one is
18 dependent on what the user does on one
19 and what happens on the other depends on
20 what the other user does on theirs.

21 Q So would there ever be a
22 situation where there are two computers
23 that are using Ross systems where a
24 POSITA would see a need to keep those two
25 context stacks synchronized?

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2 MR. MACE: Object to form,
3 incomplete hypothetical, outside the
4 scope.

5 A I don't know what you mean
6 two computers using a single Ross system.
7 As I said, a Ross system runs on a
8 particular computer and for a particular
9 user, so I can't appreciate why there
10 would be some other computer running
11 another Ross system with a different
12 stack that needs to be synchronized.
13 Sorry.

14 Q Well, let me try to clarify
15 what I'm thinking and then we can go from
16 there. I'm thinking you have one
17 computer that's running a Ross system and
18 then you have a separate computer that's
19 running a different Ross system. Would a
20 POSITA ever find it possible to keep
21 those two context stacks synchronized?

22 MR. MACE: Same objections.

23 A In this hypothetical, I
24 can't imagine a situation in which
25 anybody would ever want to keep them

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2 synchronized.

3 Q Now, if one were to keep
4 them synchronized, would the order of the
5 stack be important to maintain for those
6 two systems?

7 MR. MACE: Object to form,
8 outside the scope, incomplete
9 hypothetical.

10 A I don't think I can imagine
11 where that would be necessary or not
12 because I can't imagine how -- how it
13 would work or what the motivation would
14 be to run a system like you're
15 describing, so I think the question is
16 unanswerable.

17 Q In Ross, is the order of the
18 stack as important as the context of the
19 stack?

20 MR. MACE: Object to form.

21 A I'm not sure I understood
22 the question. Are you asking is it as
23 important? Is it as important?

24 Q Sorry, let me rephrase it.
25 In Ross, it's important to

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2 both have the content of the stack for
3 each entry and the order of the stack?

4 A I assume that was the
5 question?

6 Q Yes. That's the question.

7 A And the answer is yes.

8 Q And is the order in Ross
9 context information to your
10 understanding?

11 MR. MACE: Object to form.

12 A Well, the order -- the order
13 is the order in which the different
14 application's specific contexts appear on
15 the stack, so it is the order of the
16 contexts that is significant.

17 I'm not sure whether I've
18 answered the question or not.

19 Q Right. So the context
20 information in Ross is the order of the
21 context or at least one piece of context
22 information for that stack?

23 MR. MACE: Object to form.

24 A I'm not sure I would
25 characterize it that way. Certainly each

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2 of the -- each of the entries in the
3 context stack is context information,
4 grammar associated with an application
5 for example or in the case of combination
6 with Kennewick other information that's
7 also associated with the application.

8 But I don't think that the
9 application, itself, knows or has any
10 awareness of where it is in the stack.
11 That is information that's maintained by
12 the system, so it's the system, not the
13 application, not any application which is
14 changing or maintaining the order of the
15 stack. So that's not information really
16 about a specific context, but it is -- I
17 would say it's contextual information.
18 It's information that the system uses.

19 I don't think I would
20 necessarily call it context information.
21 You know, the context here is actually --
22 in the context of this patent, which is a
23 fairly ill defined concept that's fairly
24 broad and includes a lot of different
25 pieces of information.

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2 I don't -- I can't envision
3 a scenario. So the context is specific
4 to an application and I can't envision a
5 scenario which the application is going
6 to behave differently depending on
7 whether it's the first or the fifth on
8 the stack. The system decides if that
9 information is important for the system
10 because the system is deciding which
11 application is going to be activated, but
12 I can't imagine a situation where an
13 application would say oh, gee, I'm too
14 low on the totem pole, I don't think I
15 should be getting this. That's not its
16 purview.

17 Q So the system has the
18 information that is relating to order, is
19 that what you're saying?

20 A Yes. The system maintains
21 the context deck. The context deck is
22 outside any individual application.

23 Q And then the individual
24 entries in the context stack don't have
25 order information themselves in them; is

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2 that right?

3 A I'm saying I don't think
4 they have -- so the individual entries in
5 the context stack can't have historical
6 information. They may well and Kennewick
7 discloses that they do keep track of the
8 interaction that the user has with that
9 application, right and that's how you
10 resolve print it because you could look
11 back and see with the it, so you can see
12 the referent which is going to be earlier
13 in the conversation.

14 So an individual context
15 stack frame can have temporal and
16 historical information in it, but I don't
17 think it's going to change its behavior
18 depending on where it is in the order
19 of -- in the order of the stack that the
20 system has assigned it to or even how
21 long it has been there. I don't know
22 that -- I don't see anything in which the
23 application would know or have need to
24 know that information.

25 Q And the context stack has

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2 the order --

3 MR. MACE: Object to form.

4 Q -- correct?

5 A The context stack? A stack
6 is an order -- the stack is a data
7 structure which has -- which has an
8 ordering in which the entries in the data
9 structure are ordered.

10 So there's typically we talk
11 about recency and top of the stack, we
12 just use that metaphor, but the stack
13 it's built in -- the concept of order is
14 inherent in the stack.

15 Q In Ross' context stack, can
16 an application grammar appear more than
17 once? Like for one application, could
18 there be two grammars in the stack?

19 A Are you asking me if there
20 could be two distinct stack entries?

21 Q Yes.

22 A That's not something Ross
23 discloses. Is it possible? I don't
24 know. I can't see why an application
25 would have multiple entries in the

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context stack, but I haven't really
thought about it.

Q Well, we've been going about
an hour. Why don't we take a short
break?

A All right. Well, it's
probably lunchtime.

Q Oh.

A Why don't we take like a
half hour, 45 minutes for lunch?

Q That's fine.

A I presume you have more than
another 15 minutes or 20 minutes of
questions, right, so --

Q I can't make any promises.

A All right. So let's just do
a break. Say 40 minutes, okay?

Q Okay. 1:40 or 1:30? 1:30?

A Sure.

Q 1:30?

A Sounds good.

MR. WILSON: All right.

Thanks. Let's go off the record.

(Time noted: 1:05 p.m.)

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2 (A lunch recess was taken.)

3 (Time noted: 1:32 p.m.)

4 Q Mr. Schmandt, earlier we
5 talked about there being some nuance in
6 the term synchronizing two context
7 stacks. Could you explain what that
8 nuance is?

9 A Sure. You know, I would say
10 synchronizing is in the eye of the
11 beholder. It's a question of what level
12 of granularity things need to be
13 synchronized and that is really a
14 function of what applications or systems
15 are co-dependent on some piece of data,
16 right.

17 So synchronization may be
18 required to be perfect. If
19 synchronization is perfect, then
20 everything about two pieces of data or in
21 what we've been talking about context
22 stacks would be identical, but that might
23 be -- that might be unusual.

24 Let's say, for example, that
25 every time there is a change in the

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2 context stack in the frame of the context
3 stack, let's say we put a timestamp on
4 it, that's common in systems that, you
5 know, have a history or multi media
6 especially, so you want to put a
7 timestamp on it. Well, let's say your
8 computer sends to my computer some new
9 information to put in the context stack,
10 well, your computer is not telling the
11 same time as my computer. Eh, they're
12 close, but it's not really -- it's not
13 really the same time, but that probably
14 doesn't matter. It doesn't matter if
15 it's off by a minute, 30 seconds, 150
16 microseconds.

17 There are systems, you know,
18 transaction -- transaction style systems,
19 for example stock exchanges and things
20 like that, banks, financial transactions
21 in which time has to be incredibly
22 highly -- incredibly high resolution and
23 in fact most of these systems unbeknownst
24 to a lot of people, a lot of these
25 systems rely on GPS. GPS not only tells

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2 you your position, but it also tells you
3 the time because the GPS satellites have
4 atomic clocks in our computers. So if I
5 wanted to get perfect synchronization, I
6 wouldn't note -- if I wanted to note when
7 some change happened, I would consult the
8 GPS and then I could have complete
9 perfect synchronization with respect to
10 time.

11 So it's sort of a question
12 of -- there's sort of two aspects of it.
13 One aspect is what is the data and how
14 carefully does the data need to match
15 between two different structures
16 presumably at two different computers,
17 but on the other side another aspect of
18 it is how is the data -- how is the data
19 created, right.

20 So take your example we were
21 talking about earlier, we were talking
22 about a situation in which there were two
23 systems running a Ross like system and
24 their stacks were in different order, you
25 know, but I would raise the question how

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2 could those stacks get out of order?

3 If one process is deciding
4 what is on a stack, then every time that
5 process adds to the stack, adds a new
6 context to the stack in this example, it
7 could tell the other process add
8 something, add this to the stack or if it
9 deletes something from the stack, then it
10 could tell the other process delete this
11 from the stack. So the only way in that
12 case you could get a lack of
13 synchronization of order would be if
14 multiple processes were putting things on
15 and off the stack and not paying
16 attention to what other processes were
17 telling them, right.

18 So it's the issue, the
19 nuance is how precise is the data being
20 represented and how precise does it need
21 to be represented and what is the
22 mechanism whereby order is being -- order
23 or contents of the interior of a stack,
24 what's actually the content of it, which
25 system is changing that and how is that

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2 getting propograted.

3 Q So in these systems I think
4 we can agree, especially based on Ross,
5 that order of a context stack could be
6 important; right?

7 MR. MACE: Object. Object
8 to form.

9 A Oh, I would certainly agree
10 that it could be. I would not say it has
11 to be, but it could be.

12 Q And you knew when you
13 prepared your report, even going back
14 with your initial report, that a POSITA
15 seeing a phrase synchronizing two context
16 stacks wouldn't be sure what level of
17 synchronization would be needed; is that
18 fair?

19 MR. MACE: Object to form.

20 A Well, I would disagree with
21 that because a POSITA wouldn't be seeing
22 that in isolation. They would be seeing
23 that in the context of the kinds of
24 context of our systems that we are
25 discussing today.

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2 Q But just generally, a POSITA
3 would know that order could be important
4 when synchronizing context stacks; is
5 that fair?

6 MR. MACE: Object to form.

7 A A POSITA could believe that
8 order was important. A POSITA could
9 believe that order wasn't important. A
10 POSITA could believe that every element
11 in the stack had to be identical. A
12 POSITA could believe that only some of
13 the elements in the stack need to be
14 identical. It's really context, context
15 dependent and I don't mean to be making a
16 pun here.

17 Q I fall into that same frame.
18 So when you prepared your
19 reports initially in this case, you knew
20 of that uncertainty on how synchronizing
21 a context stack could be understood by a
22 POSITA; is that fair?

23 MR. MACE: Object to form.

24 A Well, I was not trying to,
25 to be clear, I wasn't trying to construe

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2 the term synchronize. I wasn't in any
3 way trying to establish its full metes
4 and bounds as would be required by claim
5 construction. I was looking at how one
6 would understand synchronize in the
7 context of the patent in which -- of the
8 claim in which the word synchronize
9 appeared and I was not -- I was not
10 troubled by the disclosure in Kaufman
11 enough to worry about it because it
12 seemed obvious to me that Kaufman met the
13 definition of synchronize as required by
14 the claim.

15 Q So it's fair that none of
16 your reports include a section construing
17 the term synchronize the first context
18 stack with a second context stack; is
19 that fair?

20 A That is correct.

21 Q All right. If you could
22 turn to the 652 report, which should
23 be -- I get these patents messed up.
24 It's the 753 proceeding.

25 A 7 -- 753 is patent 160.

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2 Q Yes.

3 A Okay. That's the one I have
4 out. Okay.

5 Q And if we turn to paragraph
6 14 of that report, which should be on
7 page 9, do you see the second sentence
8 from the end that begins "Other context"?

9 A Give me a second. Yes.

10 Q Where did you get that idea?

11 A I don't know. I made it up.
12 I don't understand the question.

13 Q Well, I'm wondering did you
14 see that in the industry where there are
15 two different context stacks on a single
16 device?

17 MR. MACE: Object to form,
18 outside the scope, irrelevant.

19 A I haven't. Most of what
20 I've seen -- well, I'll correct that.
21 There's a lot of literature about using
22 context stacks, it's an old concept and
23 in this sentence I'm simply reflecting my
24 understanding of what -- my understanding
25 of the claim and in particular there's a

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2 discussion as to whether the expected
3 contexts have to be a subset of all the
4 contexts.

5 So, no, I'm not looking
6 at -- I'm not looking at some system.
7 I'm not pointing out some system in which
8 contexts are stored someplace other than
9 the context stack, but I'm saying that
10 it's not impossible.

11 Q So this is just a
12 hypothetical, something that you created
13 for the purposes of this report; is that
14 fair?

15 A I think that belittles it
16 excessively. I think that we are looking
17 at the question is -- the question is
18 what does the claim require, right and
19 there's nothing -- there's nothing here
20 that requires that all contexts are on a
21 particular stack or only expected
22 contexts are on a context stack or that
23 there's even only one context stack.

24 We -- a context stack
25 reflects applications that are active in

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2 some sense, but there can be other --
3 there can be other applications that
4 aren't active and therefore don't appear
5 on the context stack, but they have --
6 they have context and if they're
7 activated then they're certainly going to
8 suddenly appear on the context stack.
9 Sometimes they are on, sometimes they are
10 not, but any application is context in
11 the way context is being used here.

12 Q And we discussed the Ross
13 reference. In part of our discussion I
14 mentioned that there might be two context
15 stacks in Ross and I think you dismissed
16 that, so why would there not be two
17 context stacks in Ross, but there would
18 be, as you say here, expected contexts in
19 one context stack and then something else
20 in a different context stack?

21 A Because Ross doesn't have
22 any -- Ross just doesn't have any space
23 for that. Ross is a fairly -- an example
24 of a fairly simple system and given the
25 way Ross operates, there's really only

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one use of the context stack. It reflects the current state of a discourse with a person on a computer, so there would be no reason to have more than one context stack.

There might be contexts in Ross that aren't on the stack. Ross doesn't really tell us much about that, but Ross does say that you can activate other applications. So the first time an application is activated, it might suddenly appear on the context stack, but before it was activated it may not appear on the context stack, but that doesn't mean it doesn't have a context of its own because the context includes entities such as grammars which are baked into the application at least in part.

Q And once again you don't have any evidence that shows an expected context stack and a context stack that's not expected; is that fair?

A No. I haven't saw any evidence to that effect.

1 C. Schmandt

2 Q So if you could turn to
3 paragraph 27 of that same report, which
4 is in the 753 case, Exhibit 1216.

5 A I'm sorry, what was the
6 paragraph number?

7 Q 27.

8 A Okay. I'm there.

9 Q Near the end, it's kind of a
10 long sentence, but I believe it's the
11 final sentence beginning with
12 "Mr. Occhiogrosso claims that," do you
13 see that?

14 A Yes.

15 Q What was your basis as a
16 technical expert for saying that
17 Mr. Occhiogrosso's argument was
18 irrelevant?

19 A Conversations with counsel.

20 Q So that's not a technical
21 opinion that you provided yourself?

22 A Well, I don't have the legal
23 chops to opine on exactly what is
24 embodied and what is not. I have come
25 across this in previous -- previous work

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2 that I've done, but, no, that is not a
3 technical opinion.

4 Q So did you consider at all
5 that the 160 patent added a new
6 embodiment to the earlier Kennewick
7 application?

8 A Yes. The 160 does add a new
9 embodiment and from my recollection the
10 significant part of that new embodiment
11 is what they call semantic broadening in
12 the case of trying to resolve ambiguity
13 in a context.

14 Q And that's involving the
15 expected context that we've discussed?

16 A No, it's not. Semantic
17 broadening is when I'm trying -- when I
18 have an utterance that sort of might
19 appear, I have an utterance and I'm
20 having trouble figuring out which context
21 it applies, I try to get to the meaning
22 of semantics, the meaning of the
23 utterance and see how that conforms to
24 the meaning of other utterances that are
25 defined in the grammar for the

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2 application and I think perhaps the
3 example was temperature, that if I ask a
4 question that has the word temperature
5 and temperature is recognized, the
6 semantic -- but it's not in the grammar,
7 the semantic broadening might say well,
8 temperature, temperature is a measure of
9 heat and this is commonly used in talking
10 about weather. Like now we had a very
11 hot day yesterday and I might say what's
12 the temperature going to be next week?
13 It's going to be another hot day here as
14 in a lot of the country.

15 Another example might be
16 temperature might apply to cooking,
17 right. So an utterance in asking about
18 temperature, the semantic broadening
19 might say temperature's an attribute of
20 weather systems and therefore they might
21 be talking about -- they might be asking
22 about a weather forecast.

23 We also might say
24 temperature is an attribute of a recipe
25 and so the user might be talking about --

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2 talking to -- making an utterance
3 directed to a cooking application.

4 That's my understanding of
5 semantic broadening as disclosed.

6 Q And your understanding of
7 the semantic broadening that was added
8 did not include Kennewick's or, I
9 apologize, the 160 patent's discussion of
10 expected context; is that right?

11 A I don't see that there's a
12 particular -- I don't see that there is
13 adequate discussion of what expected
14 context may or may not be, other than the
15 surface meaning of the term. In the
16 discussion of the semantic broadening
17 embodiment, I believe the patent uses the
18 term embodiment.

19 Q And it doesn't --

20 A To me -- to me what makes
21 the embodiment, I mean one embodiment has
22 to be different from another embodiment,
23 although some patents every paragraph
24 says in another embodiment, but my
25 understanding is that there's a

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2 difference between embodiments and the
3 difference between embodiments here is
4 not expected versus unexpected is the
5 semantic broadening when you're having
6 trouble resolving what the user is
7 talking about.

8 Q And the expected context
9 statement in the 160 patent is part of
10 the paragraph that's discussing semantic
11 broadening; correct?

12 A I'd have to check that.

13 Q It's on column 13 beginning
14 on line 60.

15 MR. MACE: Object to form.

16 A I'm going to pull up an
17 online version because it's sitting right
18 here underneath the screen if you don't
19 mind, it will be faster.

20 I'm sorry, what column?
21 What column and line?

22 Q 13, 60.

23 A Thank you.

24 Yes. It does appear in
25 that -- in that paragraph. I don't

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recall if it appears elsewhere in the
specification.

MR. WILSON: All right. If
we can go off the record for about 10
minutes, I need to discuss something
with Mr. Helge. We may be wrapping
up.

THE WITNESS: Okay.
(Time noted: 1:54 p.m.)
(A short recess was taken.)
(Time noted: 2:04 p.m.)
MR. WILSON: All right.
Mr. Mace, I will pass the witness.
(Continued on the next page
to include the jurat)

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C. Schmandt
MR. MACE: All right.
Great. I don't have any questions,
so I guess we are done for today.
Mr. Schmandt reserves the
right to review and sign.
We can go off the record.
MR. WILSON: Sounds good.
Thank you.
(Time noted: 2:04 p.m.)

CHRISTOPHER SCHMANDT

Subscribed and sworn to
before me on this _____day
of _____, 2025.

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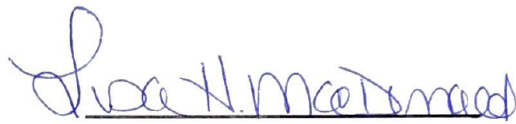
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C E R T I F I C A T I O N

I, LISA H. MACDONALD, a Registered Professional Reporter and a Notary Public, do hereby certify that the foregoing witness, CHRISTOPHER SCHMANDT, was duly sworn on the date indicated, and that the foregoing is a true and accurate transcription of my stenographic notes.

I further certify that I am not employed by nor related to any party to this action.

Dated: June 21, 2025



LISA H. MACDONALD, RPR

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CHRISTOPHER SCHMANDT

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[statement - think]

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

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

(A) to review the transcript or recording; and

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

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

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

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