UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION,

Petitioner,

v.

IPR2025-00255

X1 DISCOVERY, INC.,

Patent Owner.

_____

REMOTE EXPERT DEPOSITION OF MARTIN P. HAEBERLI

January 8, 2026

10:00 a.m.

REPORTED BY:

Siew G. Ung

CSR No. 13994, RPR, CSR

MICROSOFT EXHIBIT 1098
Microsoft v. X1 Discovery
IPR2025-00254

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THURSDAY, JANUARY 8, 2026, 10:00 A.M.

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THE REPORTER: Please raise your right hand. My name is Siew Ung, CSR Number 13994.

MARTIN P. HAEBERLI,

having been first duly sworn, was examined and testified as follows:

EXAMINATION BY MR. THACKER

Q. Good morning, Mr. Haeberli. I appreciate you taking the time for the depo today.

MR. THACKER: Before we start, I just want to state for the record that this is a consolidated deposition for the IPRs ending in '253, '254, and '255. And all those IPRs start at 2025.

BY MR. THACKER:

Q. Mr. Haeberli, are you okay with taking, like, five- to ten-minute breaks roughly every hour? And you can take a longer break for lunch if you want.

A. Yes, thanks.

Q. Okay. Yeah. And then, if you need to take a break any other time, just let me know. We can -- we can pause.

So where are you located right now?

A. I am located in the Goodwin offices in Redwood City, California.

Q. Okay. So -- so you are with Ms. Daughtrey?
A. Yes.
Q. Okay. And have you been provided with any materials today?
A. I -- I have next to me a binder which is titled "Expert Declarations."
Q. Okay. And those are clean copies of those declarations?
A. That's my understanding.
Q. Great.
How did you -- did you prepare before this deposition for -- for the deposition?
A. Yes.
Q. How did you prepare?
A. I met with counsel in person and by Zoom, to my recollection, about four times.
I also spent time reviewing and rereading my declaration, the deposition transcript of Dr. Terveen, Dr. Terveen's declarations, and cited documents.
Q. You said cited documents.
Do you recall which exhibits specifically you reviewed?
A. I don't recall, unaided, which exhibits specifically I reviewed, but I looked at the exhibits that I had cited in my declaration -- declarations, and

also at exhibits cited in Dr. Terveen's declarations.

Q. Okay. Do you know someone named Ben Bederson? He's a professor at the University of Maryland.

A. Unaided, no.

Q. Okay. Do you understand that this deposition is for all three IPRs, ending in '253, '254, and '255?

A. Yes, that'd my understanding.

Q. Okay. And do you understand that the IPR2025-00253 involves US Patent Number 7,370,035?

A. I'm -- I don't have it in my brain -- unaided associations. But let's all just look at '253 for a moment.

Yes. So '253 for the '035 patent, yes.

Q. Okay. And you're fine if we refer to that as the '035 patent?

A. Yes.

Q. Got it.

Same questions for the '498 and '139. But --

So do you understand that IPR2025-00254 involves US Patent Number 10,552,490?

A. Yes, I do.

Q. And you're okay if we referred to that patent as the '490 patent?

A. Yes.

Q. Okay. And then do you understand that

IPR2025-00255 involves US Patent Number 9,633,139?

A. Yes.

Q. And you're okay if we refer to that as the '139 patent?

A. Yes, I am.

Q. Okay. Do you also agree that, except for the claims, the specifications of these three patents are substantively identical?

A. I have reviewed the specifications of all three patents and compared them, and I would agree that they are substantively identical.

Q. Okay. So then, to avoid me having to repeat my same questions for every single patent, do you agree that, unless we are talking about claim language that is unique to a specific patent, that your answers for one patent would apply equally to the other two patents?

A. Absent any specific discussion of claims, I would agree.

Q. Okay.

A. Sorry. Claims and claim language. I -- yeah.

Q. Right. Right.

So, for example, the '490 patent recites an index data structure that the other two patents do not recite. And so, if I'm asking you questions about the index data structure of the '490, you would agree that

those answers wouldn't apply to the other two patents?

MS. DAUGHTREY: Object to form.

THE WITNESS: If you're asking about claim language. And again, I'd like -- I'd like to ground this in claim language that recites to index -- indexes. And I do recall that -- that one of the patents has claim language that addresses indices and the other two's claim language -- other two patents' claim language does not, then I'm -- I would be happy to agree to that.

In a more general sense, however, obviously, all three specifications have discussion about indices in them, so if we are having -- having broader discussions about indexes and how they work as background, that would apply to all patents, in my opinion -- all three patents here, in my opinion.

MR. THACKER: Okay. Let's focus on IPR -- the IPR ending in '254, and I want to look at your original declaration, which is Exhibit 2001.

(Whereupon, Exhibit 2001 was marked for identification.)

BY MR. THACKER:

Q. I'll give you a second to pull that up.

A. Yes, I have it here.

Q. Okay. And in Paragraph 29, you state -- you

give your definition of a POSITA, correct?

A. Yes.

Q. Okay. And you allege that you were a POSITA in 2002, correct?

A. Yes.

Q. Okay. Would a POSITA in 2002 know what a file is?

A. Yes.

Q. Okay. And is it fair to say that a file is a set of data that a computer can recognize as a discrete unit?

MS. DAUGHTREY: Object to form.

THE WITNESS: That might be one way to describe it, although we can have a long discussion about operating systems and file systems, since even the 1970s -- 1960s and '70s.

To think of as a file in that context, in the historical context, as being something that has likely has a name, that contains a -- a sequence of data. It could be words, characters, bytes, bits, depending on the operating system and the computer architecture.

BY MR. THACKER:

Q. So you said it has -- a file has a name and contains bits of data.

Did I get that right?

A. Contains a sequence of -- of bits of data.
Q. Okay.
The reason that you said it has a name is that the -- the computer operating system has to have some way of uniquely identifying that sequence of bits of data, correct?
MS. DAUGHTREY: Object to form.
THE WITNESS: Colloquial -- colloquially, yes.
BY MR. THACKER:
Q. Okay. A -- a contact record, for example, in an address book that includes the contact's name, their phone number, and/or email address, contains a sequence of bits of data, correct?
Would you agree with that?
A. A contact record must, of necessity, contain the information related to that contact, however it is represented.
Q. Do you agree then that an address book that contains a set of contact records contains a file for each of those contact records?
A. No.
MS. DAUGHTREY: Object to form.
THE WITNESS: Sorry, no.
BY MR. THACKER:
Q. Okay. I want to turn to Exhibit 1001 in the

'254 IPR.

So do you need me to upload that to the chat?

A. Yes, please.

(Whereupon, Exhibit 1001 was marked for identification.)

BY MR. THACKER:

Q. Okay.

All right. I have just uploaded it.

A. Okay. I have it downloaded, and I have it open.

Q. Okay. Can you turn to Column 32. And this is Claim 17.

A. Yes.

Q. Do you see where it says "contacts files"?

A. Yes.

Q. So is it still your opinion that contact records are not files?

MS. DAUGHTREY: Object to form.

THE WITNESS: I think that's a mischaracterization of my answer, by the way.

That -- if you could have your previous question reread, what I was trying to allow for is that there may be many different -- if you'd like to have that reread -- there might be many different ways of structuring contact information.

For example, one way might be to have one file per contact. Another might be to have a set of database records, which themselves might be represented in a single file or a number of different files. Each record might then correspond to a contact -- or might add -- another scenario in which multiple contacts -- one or more contacts are represented in a file and a contact collection or -- or aggregate for a user might then be represented in multiple different files. So those are all potential examples of -- there might be many others.

BY MR. THACKER:

Q. So your -- your testimony, then, is that contact records -- a contact record could be implemented in its -- as its own file or is in -- in a file with other contact records?

A. Or there might be other ways of representing them. For example, I mentioned a database.

Q. Would a POSITA in 2002 have been aware of these various ways of storing or representing a contact record?

A. Yes.

Q. Give me one second.

Okay. We can -- we can return to this line of questioning later. I want to move on for now.

In returning to Paragraph 29 of your '490

declaration, Exhibit 2001, you state that "A POSITA would have an understanding of index search systems," correct?

A. Yes, I do.

Q. So in -- in the context of data retrieval, would a POSITA in 2002 know what an index is?

A. Yes.

Q. Is an index an index data structure?

A. An index is -- at the -- at the 50,000-foot level, an index is a concept.

An index data structure -- one or more index data structures would be ways of representing a given index in a given context.

Q. If an index indicated where a search term was located in a file or which -- in a -- in a file, would that be an index data structure?

MS. DAUGHTREY: Object to form.

THE WITNESS: I would say an -- an index data structure would be a way of representing an index -- the concept of an index in a concrete instance such that one would query the index data structure algorithmically to identify where, in this context, in this example a file, one would look for the data in question.

BY MR. THACKER:

Q. So if a search tool queries the index to

identify where in a file a search term is located, would that index be an index data structure?

MS. DAUGHTREY: Object to form.

THE WITNESS: I would rephrase it as: If a search tool queries the index data structure to locate where in a file a term is located, then it -- it -- that would be use of the index represented in the index data structure.

BY MR. THACKER:

Q. Do you agree that, in 2002, index data structures were colloquially referred to as "indexes"?

MS. DAUGHTREY: Object to form.

THE REPORTER: As what?

MS. DAUGHTREY: Object to form.

THE REPORTER: No. Referred to as -- colloquially referred to as...

MR. THACKER: Indexes.

THE REPORTER: Okay.

THE WITNESS: I would say no. I think it depends on the context how and on the discussion.

I can imagine, in some cases people might, conversationally, use them interchangeably. But I think one of ordinary skill in a professional context would understand that an index is a concept -- an index data structure is a form of rep- -- a way of representing

the con- -- the abstract concept of an index in a more concrete way, and then there would be instances of an index data structure that would have been built -- yeah. So some --

So in some context, I would say people might use those interchangeably and others no. It depends on the conversation and the analysis.

BY MR. THACKER:

Q. Outside of the claims, does the '490 patent ever use the term "index data structure"?

MS. DAUGHTREY: Object to form.

THE WITNESS: I don't recall unaided. I know the word "index" shows up in the spec, but I don't have -- I don't have an eidetic memory, so I can't tell you without searching the document.

BY MR. THACKER:

Q. Okay. Well, I uploaded the '490 patent, and you're free to do a quick search of the document.

So just let me know when you've done that.

A. So outside of the claims, I do not see the phrase "index data structure" appearing as that trigram of words anywhere in the specification.

I do see the word "index data" and "index" -- phrases "index data" and "index data file" showing up in the spec -- or "index database."

Q. In preparing for the deposition today, did you happen to review Exhibit 1054?

A. In your -- I -- without knowing the exhibit name, I don't know.

MR. THACKER: Okay. I will upload the exhibit now.

(Whereupon, Exhibit 1054 was marked for identification.)

MR. THACKER: I just uploaded it to the chat.

THE WITNESS: Thank you. Yes.

BY MR. THACKER:

Q. Can you turn to the -- Figure 2?

A. I'm on Figure 2.

Q. Do you agree that Figure 2 is an index data structure?

MS. DAUGHTREY: Object to form.

THE WITNESS: I would want to review the patent again, thoroughly. However, in the context of just this figure alone, it appears to be a form of an index data structure.

BY MR. THACKER:

Q. Is it fair to say that the reason Figure 2 is an index data structure is because it contains associations between identifiers, in this case keywords, and their locations?

MS. DAUGHTREY: Object to form.

THE WITNESS: Yes.

BY MR. THACKER:

Q. Okay. Now, I want to move from indexes to searches.

In the context of data retrieval again, would a POSITA in 2002 know what a search is?

A. Yes.

Q. Is it fair to say that a search looks to find where specified search group criteria, such as keywords, are located?

A. It's fair to say that a search assays or attempts to find where information matching the search criteria is found.

Q. So then a search returns results that match a query, correct?

A. That would be a -- an idiomatic way of -- of putting it.

Q. Would a POSITA in 2002 know what a user interface is?

A. Yes.

Q. Is it fair to say that a user interface is the means by which a user interacts with a computer?

A. A user interface is the synthesis of what is shown by software to the computer. The computer then

uses -- the user then uses to tell the computer what to do, so it's -- it's what the user sees and how they interact with it to get the task done, whatever task they're working on.

Q. For example, a graphical user interface includes a display that a user interacts with via input devices such as a keyboard and mouse, correct?

MS. DAUGHTREY: Object to form.

THE WITNESS: For example, yes.

BY MR. THACKER:

Q. I understand that you worked on user interfaces in your career.

Is a graphical user interface limited to only one window?

A. No.

MS. DAUGHTREY: Object to form.

THE WITNESS: Sorry. I'm -- no, it's not.

BY MR. THACKER:

Q. So it's your opinion that a -- a user interface can include multiple windows?

MS. DAUGHTREY: Object to form.

THE WITNESS: Yes, although even the notion of a window is not required or requisite or implicit in a user interface. One could imagine a user interface that didn't have any windows, for example.

BY MR. THACKER:

Q. But it encompasses or could possibly include multiple windows?

MS. DAUGHTREY: Object to form.

THE WITNESS: Yes.

BY MR. THACKER:

Q. And now I want to turn to the concept of incremental searching.

Now, I understand in your declaration that you contend that incremental search processes [sic] a plurality of files, you allege was not well known before 2002.

What I'm asking you is, was incremental searching, the concept, generally, well known in 2002?

A. In 2002, incremental search within a single open edit buffer or single file was well known.

Q. If incremental searching within a file is well known, then those systems that implement it, that incremental search tool must have had user interfaces that allowed the user to enter a single search term and that would -- and the computer would automatically or incrementally display results to the user as they typed, correct?

MS. DAUGHTREY: Object to form.

THE WITNESS: A concrete example would have

been Emacs, as also cited by Raskin, where one would have an open-ended buffer, and one would begin typing -- enter a search mode and begin typing a search query, if you will.

And incrementally, as one typed, the Emacs would find the first match -- find and highlight the first match.

BY MR. THACKER:

Q. Do you agree then, that a POSITA in 2002 could implement such a search tool?

MS. DAUGHTREY: Object to form.

THE WITNESS: I certainly agree they would have been aware of it and, in the context of a single file, a POSITA would have been able to implement that as well.

BY MR. THACKER:

Q. They would have been able to implement a user interface that allows for incremental searching and provides incremental search results?

MS. DAUGHTREY: Object to form.

THE WITNESS: They would have been able to, except for the observation that, in Raskin, he points out that, at least using standard interface builders, it would have been hard to do so.

///

BY MR. THACKER:

Q. All right. Let's -- let's talk about that for a second.

So Raskin mentions Visual Basic, correct?

A. Yes.

Q. Okay. And am I right in understanding that Visual Basic makes developing a user interface super easy because all of the user interface elements are sort of prebaked?

A. That's one of the, if you will, selling points or benefits known about Visual Basic at the time.

Q. Correct.

For example, you would have, you know, a menu of selectable interface elements like a text box or a selectable button, correct?

MS. DAUGHTREY: Object to form.

THE WITNESS: Yes.

BY MR. THACKER:

Q. And the user could add that to their user inter- -- or programmer -- sorry. Strike that.

A programmer or developer could add those predefined widgets to their user interface template by simply dragging and dropping them?

A. Yes.

Q. Okay. But if a POSITA wanted to create a

dynamic text box that would tell the computer to perform a command, such as from a search, after any change in text in the character box, your testimony is that a POSITA would have -- at -- in 2002, would have been able to do that?

MS. DAUGHTREY: Object to form.

And I don't think I under- -- I think you broke up a little bit, Sam.

Did you say would or would not have been able to do that?

MR. THACKER: Oh, sorry. Yeah. Thanks.

BY MR. THACKER:

Q. Let me rephrase, Mr. Haeberli.

So in 2002, would a POSITA have reasonably expected to be able to implement a dynamic text box that would cause the computer to execute a command, such as perform a search, in response to any change in the text box?

MS. DAUGHTREY: Object to form.

THE WITNESS: So my understanding, citing also to Raskin, is at least as of the 2000 publication of Raskin's work, that would not have been easy. It would have been difficult to impossible.

BY MR. THACKER:

Q. Well, I'm not -- I'm not asking if it would be

difficult or impossible to modify Visual Basic to do what I just said. I'm asking: If someone was building their own user interface, would they have reasonably expected to be able to implement a dynamic text box?

A. No.

Q. Well, you said earlier that a POSITA would have reason -- would have been able to implement Emacs, correct?

A. Yes.

Q. And Emacs features a dynamic text box, correct?

A. Yes, from an ab initio, basically written in C program that has a much longer history than that.

However, if you were going about implementing it in a standard interface builder like Visual Basic, it would not have been straightforward.

Q. Okay. But again, I'm not asking about Visual Basic.

I'm saying that, if a developer in 2002 was familiar with C+, would they have been able to implement a dynamic text box?

A. If you --

MS. DAUGHTREY: Object to form.

THE WITNESS: You phrased the question in the context of a -- of C+ -- I assume you mean a C++, or

C-native implementation.

BY MR. THACKER:

Q. Correct.

A. And I would say it -- manifestly, yes, because, among other things, it was -- was implemented in Emacs by then.

Q. And do you agree that a POSITA would have been familiar with C+ in 2002?

A. A POSITA would have been familiar with C++ and C in 2002.

Q. Do you agree that "a" is a word? For example, in the phrase "a cat," is a word?

A. Sure. Or -- or let's just say "a cat in" -- a multiword phrase "a can in a hat," I would agree, in that context, the word "a" is a word. I mean, that -- arguably, the letter "A" shows up in the word "cat," so it's a different -- different context.

But hearing your question, if I say the phrase "a cat in a hat," is the word -- the first utterance "a" or "a" [different pronunciation] a word?

Yes, that's a word.

Q. Okay. So similarly, if I said "I am Sam," you would agree that "I" is a word?

A. In that context, yes.

Q. Okay.

THE REPORTER: Hold on a sec.

When you said the phrase, is it "a cat in a hat" or "a cat in the hat"?

THE WITNESS: I believe I said "a cat in a hat," but --

THE REPORTER: Okay.

THE WITNESS: -- I understand your reference to the Dr. Seuss book "The Cat in a Hat." Different...

BY MR. THACKER:

Q. All right. So you -- so you agree that there are certain -- at least two words in the English language that are single-character words?

A. Yes.

Q. Do you agree that there are a plurality of two-character words in the English language?

A. Yes.

Q. Do you agree that at least some whole words can also be partial strings for longer words?

MS. DAUGHTREY: Object to form.

THE WITNESS: Yes.

BY MR. THACKER:

Q. For example, going back to "a" is a partial string for other words such as "an," "and," "Andrew," et cetera.

Would you agree?

A. Yes.

Q. If a system indexes the word "a," do you agree that it inherently indexes a partial string, since "a" is a partial string for many other words?

MS. DAUGHTREY: Object to form.

THE WITNESS: I'm not sure I understand your question, although it's a -- no, my first answer would be no, I don't agree.

BY MR. THACKER:

Q. But you agree that "a" is a partial string for other words?

A. I agree that a -- a string, "a," or the letter, "a," occurs within many other words.

Q. Right.

So if a system indexes the letter "a," it inherently indexes a partial string because "a" is part of -- is a part of other words, correct?

MS. DAUGHTREY: Form.

THE WITNESS: If a system indexes all instances of the letter "a" within a file, then, necessarily, if you ask: Where does "a" occur in the file, the index will tell you, in this hypothetical, all places the letter "a" occurs within that file.

I -- I don't know if I would describe that as indexing a partial string or not. If you are talking

about an individual letter, my statement would hold.

And -- and, oh, by the way, we can get into a complete layered discussion about the distinction computer scientists sometimes like to make between -- in text processing, between words, which can comprise one or more characters, and characters or letters.

BY MR. THACKER:

Q. All right. I'd like to go back to your declaration -- this is actually your supplemental declaration, so Exhibit 2020 in the '254 IPR, so I'll give you a chance to pull that up.

(Whereupon, Exhibit 2020 was marked for identification.)

THE WITNESS: I have it up.

BY MR. THACKER:

Q. Okay. Can you turn to Paragraph 72?

A. Yes.

Q. Okay. I believe, at the bottom of page 32, where you say: "Additionally, Dr. Terveen overlooks a critical aspect of Claim 1: the 'character strings' must correspond to 'partial search strings' [elements 1.8 to 1.13] meaning the index strings themselves must be partial rather than complete."

Do you see that?

A. Yes, I do.

Q. Is that still your opinion today?
A. So my answer is yes, but I would like to read this -- reread this paragraph carefully in the context of the fact that you just asked the question.
Q. Then go for it.
A. Yes, that's still my opinion.
Q. So is it your opinion then that the only way to use an index to locate items that include partial search strings is to index the partial search strings themselves?
MS. DAUGHTREY: Object to form.
THE WITNESS: No.
And, by the way, may -- I don't want to take you off your rhythm, but at an appropriate time, I would like to ask for a break.
BY MR. THACKER:
Q. Oh, for sure. Can I ask just, like, one or two more questions?
A. Sure of course.
Q. Okay. Does the Claim 1 of the '490 patent that's Exhibit 1001 in the '254 IPR, does that claim expressly recite that the index data structure indexes partial search strings?
A. In the context of your question, I'm rereading the claim language.

Could you please repeat or -- the question and/or have it reread?

Q. Yeah, for sure.

Does Claim 1 of the '490 patent expressly recite that the index data structure indexes partial search strings?

A. No.

MR. THACKER: Okay. I think that's a good place to stop for a break, if that works for you, Mr. Haeberli.

THE WITNESS: Thank you, it does.

(Recess taken.)

BY MR. THACKER:

Q. All right. Mr. Haeberli, did you speak with any- -- anyone while we were on break?

A. Yes.

Q. Who did you speak with?

A. I spoke with Ms. Daughtrey, and I also spoke briefly with the receptionist.

Q. Did you discuss the substance of your testimony today at all with anyone while you were on break?

A. No.

Q. Okay. Do you agree that, in 2002, it was known to perform a search across multiple files?

A. Yes.

Q. Do you agree, in 2002, that it was known to perform such a search on multiple search strings entered in a single search field?

A. Yes.

Q. Okay. Let's turn to your first declaration in '490 -- in the '254 IPR that's Exhibit 2001.

Do you have that up?

A. Yes.

Q. Okay. Can you turn to Paragraph 35?

A. Yes.

Q. So is it your testimony that the '490 patent resolved prior inefficient -- alleged prior inefficiencies in part by allowing users to enter multiple strings in a single search field?

A. Just going to reread that paragraph.

So the first sentence of that paragraph in the declaration reads: "The '490 patent resolved these inefficiencies by allowing users to incrementally search multiple strings using just a single search field and use an index data structure comprising associations between files and character strings to further improve searching speed and file accessibility."

Q. Right. And I'm asking you: Is it your testimony today that the '490 patent allegedly improved

on prior systems in part by allowing users to enter multiple search strings in a single search field?

A. So you inserted the word "allegedly." I didn't say anything about allegedly.

Q. No, yeah. I -- I inserted that.

But -- but is it your testimony that -- that the '490 patent improved upon prior art systems in part by allowing the user to enter multiple search strings in a single search field?

A. I didn't say "in part," here, although I think that's accurate.

Q. But that's your testimony today?

A. Yes.

Q. Okay. But you acknowledge that that was known in the art?

A. No.

I acknowledged -- if -- if I understood your previous -- your earlier question correctly, and perhaps I didn't, you asked me: Was it known -- I'm paraphrasing -- to have a single search field contain multiple search strings?

Q. Okay.

A. And I -- I, again, in summary, in the abstract, I answered "yes" to that question.

Q. Okay.

A. But the '490 patent goes beyond that by supporting incremental search with multiple incremental search parameters in the same search field.

Q. All right. Can you turn to Paragraph 36 of your declaration?

A. Yes.

Q. So you say Figure 3G shows an embodiment of the disclosed searching method, correct?

A. Yes.

Q. Does Figure 3G include multiple search fields?

A. I'm going to refer to the original patent, just because it's easier read that in my dec enclosure.

Q. Yeah, go for it.

A. Yes.

Q. Would you agree that having multiple search fields, as in Figure 3G, can help a user more efficiently narrow down search results?

MS. DAUGHTREY: Object to form.

THE WITNESS: In some cases, it -- yes, it can.

BY MR. THACKER:

Q. What are those cases?

A. An -- an example might be, if one is attempting to, in a given separate field, specify different sections of the document structure to look

within.

So, for example, were we talking about emails, there could be a search field for sender and there could be a search field for subject -- content of the subject line.

Q. Is that why in -- I'm looking at the '490 patent that's Exhibit 1001, Column 29.

I'll let you get there.

A. I'm at Column 29.

Q. Okay. So line 39, it says: "Advantageously, the user interface provides target specific attribute search fields, thereby enabling the user to efficiently locate the desired email files, attachments, web pages and the like."

Do you see that?

A. Yes, I see that.

Q. Is that one reason why it may be desirable to have multiple search fields?

MS. DAUGHTREY: Object to form.

THE WITNESS: Yes.

BY MR. THACKER:

Q. Okay. I want to turn to Claim 1 of the '490 patent, right below where you were just reading from.

A. Yes.

Q. Right. So if I'm on a system that practices

Claim 1 and I enter only the character "a", nothing else, does the system of Claim 1 return any search results for this one character?

MS. DAUGHTREY: Object to form.

THE WITNESS: To me, it's sort of a funny question to ask.

Another way of putting this is, the claim language requires a first partial search string and a second partial search -- search string -- sorry, it requires that a first partial search string and a second partial search string be received both in the first search field.

In your hypothetical, so far I only see the presence of one, arguably, potentially partial search string, the letter "a."

BY MR. THACKER:

Q. Right.

A. So -- so then I don't -- I don't see yet the practice of this claim.

I'm not -- I'm not a lawyer. I'm not a patent attorney, so I don't -- I don't know fully, but I'm -- I don't -- it's hard for me to answer the question -- the hypothetical you posed the way I heard it, because you said: Does a system of Claim 1, where I only enter this one letter. And at that point, I don't quite see how I

would make an argument that the claim is being fully practiced in all its limitations.

Q. Yeah. Let me -- let me rephrase the question a little more simply.

A system that -- in which a user just enters a single character, does not practice Claim 1 in the '490 patent, correct?

MS. DAUGHTREY: Object to form.

THE WITNESS: I'm not an attorney, but I don't see -- at least -- I see at least one limitation of Claim 1 not being practiced in this hypothetical.

BY MR. THACKER:

Q. Okay. All right. I'm going to continue with that example.

So I've typed in the character "a," and now I type in the character "n." So I have a two character string, and that's it.

If I'm the system that returns search results for just those two characters, am I practicing Claim 1 of the '490 patent?

MS. DAUGHTREY: Object to form.

THE WITNESS: If I understand your hypothetical, I don't see the presence of a second partial search string, so I would say no, because that limitation is not present.

BY MR. THACKER:

Q. Again, if a system returns results for an entire word that's entered in- -- into the search field, but it's only one word, does that system practice Claim 1?

MS. DAUGHTREY: Object to form.

THE WITNESS: Under my understanding of the hypothetical, the same analysis I just applied is in effect, I don't see a second partial string.

BY MR. THACKER:

Q. All right.

So it isn't until a string separator character is entered and then a second partial search string is entered, that the system of Claim 1 returns search results, correct?

MS. DAUGHTREY: Object to form.

And, Counsel, I'm -- I don't want to interrupt things, but I just want to put on the record that, to the extent you're trying to get it [indiscernible] --

THE REPORTER: Ms. Daughtrey, you're coming in very soft, so I couldn't get the ending of...

MS. DAUGHTREY: Sure. I said: We would object to the extent any of this line of questioning is directed towards issues not relevant to this proceeding, for example, infringement or damages in another case,

and we would move to strike if that -- if the line of questioning is clearly in that direction.

So I just needed to put that on the record.

BY MR. THACKER:

Q. Do you want me to repeat the question, Mr. Haeberli?

A. Yes, please.

Q. It isn't until a string separator character is entered and a second partial search string is entered that the system of Claim 1 returns search results, correct?

MS. DAUGHTREY: Object to form.

THE WITNESS: Again, I -- I find the whole hypothetical structure almost inverted.

If I rephrase your question as: A system -- does a system practice this claim?

I would say: Only a system which had at least two partial strings and returned search results -- I'm paraphrasing the full limitations of the claim -- could be seen as practicing the claim.

If there was only one search string, then again, an assertion that this claim is practiced by such a system when there's only one search string would be, I think, defective because the limitation of the second search string would not be present in that hypothetical.

BY MR. THACKER:

Q. So would entering multiple search strings into the search field, do you agree that the computer must have some way of distinguishing the two search strings?

MS. DAUGHTREY: Object to form.

THE WITNESS: It seems in -- to me, that an analysis of this claim would require that there have -- as we have just talked, the claim requires that there be two search strings, so -- within the same field, so there must, of necessity, be a way of distinguishing the two search strings from each other within that search field.

BY MR. THACKER:

Q. Okay.

A. I'm sorry. I'm paraphrasing a bit further.

I'm saying my analysis of the claim, my understanding of patent law -- and I'm not a lawyer --

Q. Right.

A. -- my understanding of the claim language would require that.

Q. Got it.

And I'm just -- and I'm just asking, not with respect to the claim language anymore, but just a system that allows a user to enter multiple search strings, do you agree that it must have some way of distinguishing

the multiple search strings?

MS. DAUGHTREY: Object to form.

THE WITNESS: There must be some way of distinguishing multiple -- in such a situation, there must be -- if you allow for multiple, how does a computer know the difference between the different strings? If there are multiple in the same field, there must be some way of distinguishing them.

BY MR. THACKER:

Q. All right. And do you agree that, in 2002, the concept of using a single character to separate or distinguish between different search strings was known?

MS. DAUGHTREY: Object to form.

THE WITNESS: I would say in 2002, the use of a single character to separate words or items from each other in a string in general were known, and certainly it was also known for searches.

BY MR. THACKER:

Q. For example, Lotus Notes discloses using a comma to separate search strings, correct?

A. Some Lotus Notes versions and references do disclose that, yes.

Q. And you would agree it was also known to use a space to separate strings?

MS. DAUGHTREY: Object to form.

THE WITNESS: It was known to use a space to separate words in a string from each other or, potentially, to separate search terms from each other.
BY MR. THACKER:
Q. Okay. Let's go back to Claim 1 of the '490 patent.
A. Yes.
Q. Does Claim 1 require indexing every one-character string?
MS. DAUGHTREY: Object to form.
THE WITNESS: So I'm rereading the claim language with that question in mind.
BY MR. THACKER:
Q. Okay. Yeah, take your time.
A. No.
Q. Does Claim 1 of the '490 patent require indexing every two-character string?
MS. DAUGHTREY: Object to form.
THE WITNESS: The claim language reads: "It requires a computer-readable storage medium storing an index data structure comprising associations between each of a plurality of character strings to associated files of a plurality of files in which the character strings are included."
///

BY MR. THACKER:

Q. Okay. I -- I know the -- the claim language says, but are -- is it your opinion that each record in the index data structure includes an association between a plurality of characters and where those characters are located?

Is that your opinion?

MS. DAUGHTREY: Object to form.

THE WITNESS: I --

I don't recall being asked to perform this specific analysis. If you want to point me to something in my declaration that addresses this, I'm happy to review and discuss.

BY MR. THACKER:

Q. Well, the reason I'm asking this is because, in your declaration and earlier in your testimony today, you stated that the claims require indexing partial search strings, although they don't expressly recite that.

And so what I'm trying to understand is how the claims require indexing partial search strings if they don't recite that and you don't know what this limitation about an index data structure, what -- what that limitation means or requires.

So again, I'm going to ask: Does the index

data structure of Claim 1 of the '490 patent require indexing every two-character string?

MS. DAUGHTREY: Object to form.

THE WITNESS: Based on my understanding of this patent's disclosure and the literal claim language, I would say there's not a specific architectural requirement about how or what exactly is indexed except that there be associations between pluralities of character strings to associated files.

You could imagine a scenario in which the index doesn't index all possible combinations and possible substrings, but rather provides hints or accelerators, in some cases; you can imagine a -- an index that is complete, in other instances.

In my view, both of those would be covered by this claim language.

BY MR. THACKER:

Q. Sorry. Were those possible implementations that you just described known in 2002?

MS. DAUGHTREY: Object to form.

THE WITNESS: I -- I need -- I need more context, but I think -- I need more context for that question.

BY MR. THACKER:

Q. Well, you said that -- you gave two examples.

One is that there were hints or acceleration -- accelerators in some cases or that the index is complete.

My question is: Were those two possible implementations of an index known in 2002?

MS. DAUGHTREY: Object to form.

THE WITNESS: I think likely both would have been familiar to a person of ordinary skill at the time.

MR. THACKER: All right. I would like to turn to True, which is Exhibit 1009, so I'm going to upload that to the chat right now.

(Whereupon, Exhibit 1009 was marked for identification.)

BY MR. THACKER:

Q. Okay. I just uploaded it.

A. Yes, I have it open.

Q. Great.

Do you have it open to the first page?

A. Yes.

Q. Okay. Can you read the title of True?

A. "Interactive Searching."

Q. Okay. Do you agree that the abstract of True states: "A user searches searchable information representing underlying information using an interactive user interface"?

A. The abstract begins with that phrase, yes.
Q. Okay. Can you go to Column 1 of True?
A. I'm at Column 1.
Q. Okay. At line 10, it says: "A search engine 3 then searches the file of searchable information 1 for records (e.g., patents) which satisfy the query 2."
Do you see that?
A. Yes.
Q. Do you agree -- sorry.
Okay. And then do you see at -- it goes on to say: "Each record either satisfies or does not satisfy the query. The search engine 3 produces a set of hits 4 representing the records that satisfy the query. The hits 4 may be presented to the user in various ways. One common approach is to present the user with a list of the hits and to allow the user to examine selected hits."
Do you see that?
A. Yes.
Q. Is it re- -- reasonable that a POSITA reading this would understand that the individual patent records are separate files?
MS. DAUGHTREY: Object to form.
THE WITNESS: No.
///

BY MR. THACKER:

Q. Are you familiar with Google Patents?

A. Yes.

Q. Would you understand that Google Patents stores each patent as its own file?

MS. DAUGHTREY: Object to form.

THE WITNESS: No, I might speculate that that would be one approach. And I will -- I will cite the language of Column 1 here.

So Column 1, starting at 6: "Referring to Figure 1a, when a computer user needs to search a file of searchable information 1, such as a file containing the text of issued patents, he typically enters a query 2 containing keywords interconnected by Boolean operators. A search engine 3 then searches the file of searchable information 1 for records (e.g. patents) which satisfy the query 2."

So in this context -- and then it goes on: "Each record either satisfies or does not satisfy the query 2."

In this context, a plain reading of this discussion is that there would be a single file containing the text of issued patents in scope for searching, and -- and each patent in this file would be considered a record and the search would search among

records for those that match.

That -- so that -- that would be one way of reading the plain language of this disclosure.

BY MR. THACKER:

Q. Right. That's one way of reading it.

But it says that the list of hits is presented to the user, correct?

A. "The search engine 3 produces a set of hits 4 representing the records that satisfy the query." Which are then -- which may then be presented to the user.

Q. Right.

So you agree that the set of the -- the hits -- a list of the hits are presented to the user?

A. As discussed here, yes. Or may be presented to the user.

Q. Okay. Do you agree then the search engine must have some way of distinguishing the different records?

MS. DAUGHTREY: Object to form.

THE WITNESS: Yes, of necessity.

BY MR. THACKER:

Q. And each record contains a sequence of bits of data?

MS. DAUGHTREY: Object to form.

THE WITNESS: In this hypothetical, each

record contains a patent represented in some form, logically and most likely a sequence of bits or -- or bytes of data.

BY MR. THACKER:

Q. Can you turn to Column 7 of True?

A. Yes, I'm here at Column 7.

Q. Can you read Column 7, line 60, through Column 8, line 2, and let me know when you are done.

A. Yes.

Q. Do you agree that True discloses that the -- that a text file could be the searchable information?

A. Well, for example, the item you just had me -- had me read: "The underlying information 5 could be a text file containing a transcript of a deposition, in which case the text file would also be the searchable information 1."

Q. Do you agree that True discloses that the confidence levels could all be one?

MS. DAUGHTREY: Object to form.

THE WITNESS: Again, the section you just had me read ends with: "The confidence levels associated with words in the searchable information could all be either zero or one rather than continuous values ranging between zero and one."

///

BY MR. THACKER:

Q. Right. I know what True says. What I'm asking is that: Does that disclosure to you mean that the confidence levels could all be one?

A. Yes.

Q. Does a confidence level of one mean 100 percent accuracy?

A. In the context of True, that's -- would appear to be what that means, although further discussion in Column 8 says it could mean something else, see line 10 of Column 8.

Q. Right. But -- of course, it -- it could be something else, but True does disclose that the -- the con- -- in one embodiment, that the confidence levels correspond to accuracy, correct?

A. Yes.

Q. Okay. So in that embodiment, a confidence level of one would mean 100 percent accuracy.

A. Yes.

MR. THACKER: I'm at a good stopping point right now.

Would -- would you be open to breaking for lunch for maybe like 30 minutes or whatever works for you all?

THE WITNESS: Sure.

MS. DAUGHTREY: Yeah. That's fine with us.

(Recess taken.)

BY MR. THACKER:

Q. Mr. Haeberli, did you talk to anyone on your lunch break?

A. I talked with Ms. Daughtrey.

Q. Did you discuss this --

THE REPORTER: Talked with who?

MR. THACKER: Sorry. Did you need Mr. Haeberli to repeat that answer to the last question?

THE REPORTER: Did you say you talked with Ms. Daughtrey?

THE WITNESS: That's what I said, yes. I spoke with Ms. Daughtrey.

BY MR. THACKER:

Q. And did you two discuss the substance of any of your testimony today?

A. No.

Q. Okay.

So before we went on break, we were discussing the True prior art reference, Exhibit 1009, and all three IPRs. I'd like to go back to discussing that reference for a little bit.

Do you have that reference up, Mr. Haeberli?

A. Yes.

Q. Okay. Great.

Is it your understanding that True discloses breaking up a transcript into what it refers to as transcript windows?

A. It's my understanding that, for the purposes of the analysis that True is meant to perform, the transcript is broken up into time windows that are also described as transcript windows.

Q. Okay. And do you agree that each transcript window contains a sequence of bits of data?

MS. DAUGHTREY: Object to form.

THE WITNESS: The underlying transcript contains a sequence of data that is derived from the under- -- in the straightforward disclosure of True, derived from the underlying -- underlying audio file or audio channel -- maybe extracted from a video, and the transcript windows reflect sections in time as it were mapped onto such a time-stamped transcript.

BY MR. THACKER:

Q. Right. So the -- the transcript for the period of time defined by a given window would contain a sequence of bits of data?

MS. DAUGHTREY: Object to form.

THE WITNESS: Again, as envisioned in -- in the straightforward disclosure of True, it contains a

sequence of voice-recognized auto-transcribed words with confidence annotations and time stamps.

BY MR. THACKER:

Q. Right. So would you agree, though, that the -- a computer would store that information as bits of data?

A. That would be stored, most likely, as binary data, ultimately. But at one level, that would likely be in the form of an annotated text file.

Q. Okay, so an annotated text file.

That annotated text file would be stored, on some level, as a sequence of bits of data, correct?

A. Yes.

Q. Okay. And so, then, the portion of that text file that corresponds to a given window would also contain a sequence of bits of data?

MS. DAUGHTREY: Object to form.

THE WITNESS: Okay.

BY MR. THACKER:

Q. Is that a "yes"?

A. Yes.

Q. Do you agree that True displays the results for specific windows that may contain the search term?

A. True, in the graphical user -- user interface disclosed, would display results related to the search

terms mapped onto time windows.

Q. Right. But so the -- the -- what True discloses is that the computer must have some way of distinguishing the different time windows, correct?

MS. DAUGHTREY: Object to form.

THE WITNESS: Well, I would say that the -- the user has a way of specifying the size of the time windows, and then the computer takes that instruction from the user to define a set of separate time windows.

BY MR. THACKER:

Q. Right. So it -- but it has to be able to identify those different time windows that the user has set, correct?

A. I would say it slightly differently.

The user specifies the time window size, let's say in this example five seconds, and True discloses that the analysis is divided into -- in 5-second time window chunks.

Q. Right. So it has to have some way of distinguishing the first 5-second chunk from, say, the second 5-second chunk, correct?

A. Yes.

Q. Okay. I'd like to now turn back to the '490 patent.

Can --

A. Yes.
Q. -- you pull that up?
Okay. Great.
Now, I know earlier we were talking about whether a system that only returns results for a single word or string practices Claim 1, and then we started talking about what happens if you enter a -- a character for a second string.
And you said: Then Claim 1 would -- would -- that a system practicing Claim 1 would return results.
So I want to -- I want to focus on what happens after a user enters a -- a character for the second string.
So is it your understanding of Claim 1 of the '490 patent, that as soon as the character -- the user enters a character of the second partial search string, that the system locates files containing both search strings?
MS. DAUGHTREY: Objection to form.
THE WITNESS: At a paraphrased level, that sounds about right.
BY MR. THACKER:
Q. Okay. Now, what I want to know is what happens when the user enters a -- another character after they've entered two search strings.

Does the system search only the results that it's already returned or does it re-search all the files and discard the search that it just did?

MS. DAUGHTREY: Objection. Form.

THE WITNESS: I think you're asking me this question in the context of the claim language.

BY MR. THACKER:

Q. Yes.

A. And the context for my answer is the last limitation if Claim 1, which I'll read. "Updating a set of matching files of the plurality of files as each succussive character of the first partial search string and the second partial search string is received respectively in the first search field by identifying any of the plurality -- plurality of files included in both the first one or more of the plurality of files and the second one or more of the plurality of files wherein the first partial search string and the second partial search string are nonadjacent in at least one of the matching files."

So my qualitative read on that is, that when either partial search string is amended, shortened, or lengthened, at least the set of files associated with that string is re-searched or reupdated based on the index.

Q. Yeah. So let's -- let's take an example.

Say I enter two search strings and the system practicing Claim 1 returns results.

You with me so far?

A. Yes.

Q. Okay. Now, let's say that I add one character to one of those strings.

You with me?

A. Yes.

Q. Does the system that practices Claim 1 re-perform the search for that changed search string across all files or only the files that were previously returned?

MS. DAUGHTREY: So, Counsel, again, I'm going to launch an objection, because it sounds like what you are asking about has nothing to do with this proceeding. I've given you a lot of latitude on these questions, but I'm worried that this is really crossing the line. This is not tied to, like, prior art or anything in Mr. Haeberli's declaration --

THE REPORTER: Ms. Daughtrey, you're soft again. Sorry.

MS. DAUGHTREY: Sorry. I don't know how much you got of that.

I said I've allowed you to ask your questions.

I've given you latitude. But I'm worried that we're veering into issues that are completely unrelated to this proceeding, so I would request that you try and tie the questions to issues in this case.

And if not, we might need to meet -- go off the record and meet and confer.

MR. THACKER: Yeah. No. I'm -- I'm planning to get there.

MS. DAUGHTREY: Understood.

THE WITNESS: So please reask the question because, as you can appreciate, it's a complicated question and the context gets dropped when the necessary legal discussions take place.

MR. THACKER: Yeah.

BY MR. THACKER:

Q. Okay. So a system that practices Claim 1 returns results after a user has entered two partial search strings, correct?

A. Yes.

Q. Okay. Now, the user modifies the search query in some way.

My question is: Does the system practicing Claim 1 re-perform the search across all files or only those files that it previously returned?

MS. DAUGHTREY: Same objections.

THE WITNESS: So a way of -- a way that I can possibly answer -- that I can possibly answer this question is that one technical approach would be, if you amend the first or the second search string, let's say you lengthen it, that means the number of files returned in that new partial string is applied is no longer than -- no more than the set that is currently been found, and might be smaller.

If you shorten it, then the set could be larger.

BY MR. THACKER:

Q. Right.

A. That said, an efficient -- kind of a best case design from a performance standpoint would be to say: Oh, you lengthened the string, so the list of files gets shorter. We will start with the current list of files we found, Set -- Set A list, Set B list, Set 1 list or Set 2 list, and narrow it. But you can also imagine an implementation that started that search from scratch.

It seems to me, in my opinion -- and I was not asked to do this analysis, but I'm trying to answer your question as best I can in a hypothetical, both kinds of systems would infringe.

Did that address your question?

Q. Yes, it did. Thank you.

I have two follow-up questions for that.

You mentioned that if the string is being lengthened, then the most efficient approach, or an efficient approach, would be to just narrow the current list of results.

And is that because you're limiting the total volume of searching you have to do? Is that -- is that why?

A. So let me be slightly more precise, if I may.

Q. Yeah. No, for sure.

A. So suppose you have a partial search string for "th," and it also -- assume here we're talking about partials that are anchored in the initial letters of words.

So we don't find "th"s in the middle of the words. We find "the," "then," "there" would all match the "th" search string.

So let's consider just the list of documents that contain at -- at least one word starting with "th."

Now, if I lengthen that search string arbitrarily by adding a letter in the middle, like "tah" -- I don't even know if there's any English words that start that way -- then, in that context, I kind of, obviously, have to start the search over.

But if I lengthen it by going -- by just

adding a letter at the end, all files that contain "th" -- I change it to "the" in this hypothetical -- it's quite possible that there are some files that have no instances of "the" in them but just have "th" and some other -- like "thus", for example, a file containing a "thus," but didn't have the word "the" or "then" in it would now no longer match. So the list, of necessity, would get shorter. It would contain no more than the files in the first search -- the first search instance, all the files containing "th," and would likely contain less.

So there's no reason to search -- in that hypothetical, there's no reason to search the broad scope of all files. One would search, for efficiency's sake, only the files that have already been found, and the list either would stay the same or likely -- might get shorter.

Q. So -- sorry. Were you done?

A. I'm done.

Q. Okay. So just to clarify, make sure I'm hearing you correctly, if your end -- if you're adding a character to the end of a string --

A. Yes.

Q. -- then what would make the most sense, per the -- per the claim language, is to search only the

files that you have already found?

A. I disagree with the qualification "per the claim language," okay?

What would make sense from an efficiency standpoint -- would make the most sense from an efficiency standpoint would be to search only the set of files you've already found.

Q. And the claims cover that situation?

A. In my opinion -- and I was not asked to do this analysis.

Q. Right.

A. But in my opinion, as I sit here, the claims would cover that situation -- sorry, Claim 1 language would cover that situation.

Q. And -- and do you agree that that situation where you're, essentially, keeping track of the results you've previously returned and then narrowing with characters being added to the end of the string, would create some efficiencies if it kept -- if a user backspaces or deletes a character at the end of the string because then you already have the search results?

MS. DAUGHTREY: Objection. Form.

THE WITNESS: I guess I disagree. The reason is -- it sort of depends a little bit on what one does in an implementation sampling. But in a -- in a

straightforward implementation, suppose you started by typing "t." Now, you have a list of -- I'm making this up now -- 101 files that contain words that start with "t."

Now, I type "h." Now I'm down to 56 files that have words that start with "th."

Now, the question is, did I remember what the first list was in my software? I could have done that or I could have not have done that. But one implementation would be you don't remember what was done before, you just throw that away.

So now you have all the files with "th"s.

If I backspace and remove the "h," of necessity, I have to search the whole scope again to go from 56 to 101 files.

BY MR. THACKER:

Q. Right. And in a -- in a specific instance where you don't store previous results in memory?

A. The result lists.

Q. The original list. Sorry.

A. It's one way.

Q. Do you agree that the '035, '490, and '130 patents disclose narrowing a list of search results?

MS. DAUGHTREY: Objection. Form.

THE WITNESS: Of necessity, because what is

discussed and disclosed is incremental searches, it must support narrowing search results as the search constraint gets longer.

BY MR. THACKER:

Q. Right. So I'm looking at Column 15 of the '490 patent, Exhibit 1001 in the '254 IPR.

Do you have that open?

A. I'm now at Column 15.

Q. Okay.

Can you read from line 44 to 52, and let me know when you are done?

A. Yes, I will.

So just 44 through 51?

Q. Through 52, yeah.

A. Through 52.

Yes, I've read that.

Q. Do you understand that disclosure to mean that the list of search results is incrementally narrowed down as the user types in additional characters?

MS. DAUGHTREY: Objection to form.

THE WITNESS: Yes.

MR. THACKER: Can we take a quick five-minute break and then come back? I'm pretty sure I don't have any other questions, but I just want to make sure.

MS. DAUGHTREY: Okay.

(Recess taken.)

MR. THACKER: I have no further questions.

MS. DAUGHTREY: No questions from us.

THE REPORTER: Does anybody need a rough draft?

MS. DAUGHTREY: Sure.

MR. THACKER: Yes.

THE REPORTER: And regular delivery?

MR. THACKER: Yep.

MS. DAUGHTREY: Yep.

(Deposition concluded at 12:50 p.m.
Declaration under penalty of perjury on the following page hereof.)

DEPOSITION OFFICER'S CERTIFICATE

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

That the foregoing proceedings were taken before me at the time and place herein set forth; that any witnesses in the foregoing proceedings, prior to testifying, were duly sworn; that a record of the proceedings was made by me using machine shorthand, which was thereafter transcribed under my direction; that the foregoing transcript is a true record of the testimony given.

Further, that if the foregoing pertains to the original transcript of a deposition in a federal case, before completion of the proceedings, review of the transcript [ ] was [X] was not requested.

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

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

Dated: 1/16/26



Siew Ung, RPR, CSR No. 13994