

Transcript of the Testimony of:

WENKE LEE, PHD

NETSKOPE, INC.

VS.

FORTINET, INC.

May 16, 2024

Volume I



I M A G I N E
R E P O R T I N G

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

NETSKOPE, INC.,	)	
	)	
Petitioner,	)	PTAB Case No. IPR2023-00458
	)	
vs.	)	Patent No. 9,280,678
	)	
FORTINET, INC.,	)	
	)	
Patent Owner.	)	
_____	)	

DEPOSITION OF WENKE LEE, PHD
Sacramento, California
Thursday, May 16, 2024

REPORTED BY: Matthew Sculatti
CSR No. 13558

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3
4

5 NETSKOPE, INC.,)
6 Petitioner,) PTAB Case No. IPR2023-00458
7 vs.) Patent No. 9,280,678
8 FORTINET, INC.,)
9 Patent Owner.)
_____)
10
11

12 Deposition of WENKE LEE, PHD, taken before
13 Matthew Sculatti, a Certified Shorthand Reporter for the
14 State of California, commencing at 10:04 A.M.,
15 Thursday, May 16, 2024. This deposition was reported
16 remotely.
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I N D E X

WITNESS	EXAMINATION	PAGE
WENKE LEE, PHD	By Mr. Lu	5

E X H I B I T S

EXHIBIT	DESCRIPTION	PAGE
Exhibit 1001	United States Patent No. 9,280,678 B2	8
Exhibit 1023	A Layered Naming Architecture for the Internet	27

1 | Sacramento, California; Thursday, May 16, 2024;

2 10:04 A.M.

3

4 WENKE LEE, PHD,
5 having been administered an oath, was examined and
6 testified as follows:

7

8 EXAMINATION

9 BY MR. LU:

10	Q	Good morning, Dr. Lee.
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11         It's nice to see you again.
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12 A Good morning. Same here.

13 Q So you understand today you are here to testify
14 about a supplemental declaration you filed in this case,
15 which is related to the 825 patent?

16	A	I think 678.
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17	Q	Or I'm sorry. 678 patent.
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18	A	Okay.
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19	Q	Let me just re-ask that.
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20 Dr. Lee, you understand today you're here to
21 testify about your supplemental direct -- declaration you
22 submitted in this case, which is related to the 678
23 patent?

24	A	That's correct.
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25 Q And you previously testified in this case;

1 correct?

2 A Yes. I think so, yes.

3 Q All right. And in preparing for today's
4 deposition -- or let me ask it this way: Did you do
5 anything to prepare for today's deposition?

6 MR. YUAN: Objection to the extent it calls for
7 confidential attorney-client privilege.

8 THE WITNESS: Yeah. So I read the -- of course,
9 I reviewed my supplementary declaration again. I, you
10 know, went over the 678 patent. Yeah.

11 BY MR. LU:

12 Q Did you meet with anybody to prepare for this
13 deposition?

14 MR. YUAN: Same objection.

15 THE WITNESS: Yeah. I met with the counsel
16 from -- yeah (unintelligible).

17 BY MR. LU:

18 Q So that was Mr. Yuan and Mr. Tehranchi?

19 A Yeah.

20 Q And when did you meet with them?

21 A Let me see. A couple times this week, I think.
22 Yeah. Yeah.

23 Q How long did you meet with them for both of those
24 times?

25 A I would say couple hours each time, yeah.

1 Q All right. Do you have any physical documents in
2 front of you?

3 A Yeah. I -- I have the supplemental declaration
4 in -- in the kind of clear, clean form --

5 Q Uh-huh.

6 A -- and also, the 678 patent. And -- yeah. So
7 those are the --

8 Q Is it just --

9 A Yeah.

10 Q Okay.

11 A Yeah.

12 Q Do you have access to the rest of the exhibits in
13 this case?

14 A Some of them I think I do in my folder, but
15 there's no guarantee; right?

16 Q Okay. If I -- if -- If I ask about a document
17 and you're missing it, I'll just upload it to the Zoom
18 chat, and then you can download it from there.

19 Does that work?

20 A Yes, yep.

21 Q Okay. And do you have any notes in front of you
22 or -- whether electronic or physical?

23 A No.

24 Q Okay. So why don't we start with the 678
25 patent --

1 A Okay.

2 Q -- since you have a physical copy of that --

3 A Okay.

4 Q -- in front of you.

5 Let me pull it up, as well.

6 (Exhibit 1001 was marked for
7 identification.)

8 MR. LU: Now, Matt, do you want me to upload
9 these exhibits that I'm talking about, or are you okay
10 without me doing that?

11 THE REPORTER: You can just send them to me
12 later.

13 MR. LU: Okay. We'll do that then.

14 BY MR. LU:

15 Q So if you go to the second to last page --

16 A Okay.

17 Q Let me know when you're there.

18 A Second to last page. Okay. Yeah.

19 Q And on the bottom on the left side, you can see
20 where the list of claims begins; right?

21 "What is claimed is: 1. A method comprising:"

22 Do you see that?

23 A Yes, I do.

24 Q Okay. You know, I -- I assume you're pretty
25 familiar with these claims at this point; is that right?

1 A I've went through them a couple times.

2 Q Okay. So I wanted to ask you about -- well, do
3 you understand what a method claim is?

4 A I don't know the legal definition, but I know
5 that it's different from systems claim. Yeah.

6 Q Right. And in a method claim, you have several
7 steps that are recited; correct?

8 MR. YUAN: Objection. Form.

9 THE WITNESS: So again, I don't know the legal
10 definition. I know this claim and the limitations within
11 the claim, yeah.

12 BY MR. LU:

13 Q Right. I mean, well, just looking at this method
14 claim, for example, in Claim 1, you have "a method
15 comprising," and then it lists several steps. The first
16 one being -- starting with the word "assigning" and then
17 you have "encrypting" and then you have "storing" and then
18 "managing."

19 Do you see that?

20 MR. YUAN: Objection. Form.

21 THE WITNESS: Yes. So again, I don't know the
22 legal term, proper terms, to describe the steps of this
23 element, of this limitation. But, yeah, I would just say,
24 you know, whatever is cited here is part of the method.

25

1 BY MR. LU:

2 Q Right. I'm not asking about legal terms. I'm
3 just asking about your understanding as a POSITA. When
4 reading this claim, you understand that -- well -- well,
5 what would you call it? Like, there's assigning to one or
6 more users. What would you call that?

7 A That's one of the things you would do with the
8 method.

9 Q Okay.

10 A Yeah.

11 Q So would it -- do -- would you understand it if I
12 called that a "step" of the method? One of the steps that
13 you perform in the method?

14 A Yeah, you can say a step. Yeah, you can say a
15 step or action, whatever. I mean, so -- yeah.

16 Q Okay. I'm just trying to figure out what
17 language you're comfortable with.

18 A Okay.

19 Q I'm going to call them "steps." And if that
20 doesn't make sense to you, just let me know.

21 So I wanted to ask you about the -- the second
22 step of this claim, which is "encrypting by the gateway
23 device," et cetera, et cetera.

24 Do you see that?

25 A Yes, I see that.

1 Q So let me -- let me read the first part of this
2 step.

3 "Encrypting, by the gateway device, using
4 cryptographic key information defined by the policy,
5 content of the file to produce a searchable encrypted
6 file."

7 Do you see that?

8 A Yes. So you would agree with me that this
9 encrypting step produces a searchable encrypted file;
10 correct?

11 MR. YUAN: Objection. Form.

12 THE WITNESS: No, because it says, Encrypting, by
13 the gateway device, using cryptographic key information
14 defined by policy, content of the file, to produce a
15 searchable encrypted file by.

16 And then listed, you know, the -- the elements
17 that you need to perform in order to create a searchable
18 encrypted file.

19 BY MR. LU:

20 Q Right. And so my question was do you agree that
21 this encrypting step produces a searchable encrypted file?

22 MR. YUAN: Objection. Form.

23 THE WITNESS: I mean, I disagree because that's
24 not how the -- how the -- claim limitation is written.

25 So basically, like I said, encrypting the content

1 of the file to produce searchable encrypted file by -- so
2 then you talk about things you need to do in order to
3 produce a searchable encrypted file. And -- and those are
4 the, you know, additional limitations that we have not
5 talked about yet.

6 BY MR. LU:

7 Q Right. And so you would agree that at least to
8 produce a searchable encrypted file, you need to divide
9 "the file into a plurality of chunks, create namespaces
10 for one or more of the plurality of chunks; and configure
11 the namespaces of the one or more chunks such that content
12 of file is encrypted in a manner that makes it
13 searchable."

14 Do you agree with that?

15 MR. YUAN: Objection. Form.

16 THE WITNESS: So like I said, if I read -- when I
17 read the claim language, the step that we decided, right,
18 dividing file into chunks and creating namespaces and
19 configuring namespaces, so those are the elements that
20 necessary to produce a searchable encrypted file.

21 BY MR. LU:

22 Q Right. And I -- I believe that's an affirmative
23 then.

24 A Hold on. Affirmative of what?

25 (Simultaneously speaking.)

1 MR. YUAN: Objection. Mischaracterization of
2 witness's testimony.

3 (Court reporter clarification.)

4 MR. LU: So how is it a mischaracterization?

5 THE WITNESS: Just to clarify; right? I said --
6 BY MR. LU:

7 Q Well, let me -- let me -- sorry. Let me -- let
8 me ask counsel.

9 A Okay.

10 MR. LU: How is that mischaracterized?

11 MR. YUAN: So, I quote, so you said, "I believe
12 that's an affirmative then."

13 MR. LU: Okay.

14 MR. YUAN: That's a mischaracterization of what
15 Dr. Lee just testified.

16 MR. LU: I agree that's a characterization, but
17 how is it a mischaracterization?

18 MR. YUAN: Well, that's your opinion. We can --
19 we -- we can disagree whether that's a -- your -- your
20 characterization is a mischaracterization or not, but
21 that's my objection.

22 MR. LU: No, I know. I'm just trying to
23 understand what the substance of your objection is.

24 MR. YUAN: Counsel, I -- I don't think we -- we
25 need to waste time on -- on this. We just get the

1 objection on the order and move on.

2 MR. LU: I know. I just -- so -- so the problem
3 is I've got to ask my questions. And if you have
4 objections to them, I want to ask them in a way that you
5 find appropriate. So my question is, to you, in what way
6 was my statement, which wasn't even a question,
7 mischaracterizing --

8 MR. YUAN: I -- I think our discussion just cut
9 off -- cut off what Dr. Lee is going to say because
10 Dr. Lee, just before your -- your -- your -- your raising
11 of the question, Dr. Lee was trying to correct you about
12 your comments about "That's affirmative."

13 MR. LU: Okay. So you -- do -- are you unable to
14 explain why you believe it's a mischaracterization?

15 MR. YUAN: No, no. I'm trying to say -- okay.
16 Let's just say that we disagree the characterization of
17 your statements. Can we just move on? I just don't want
18 to waste time on this.

19 MR. LU: Okay. No, I understand. I -- I
20 definitely disagree with the characterization of your
21 statement.

22 BY MR. LU:

23 Q All right. So there's no currently pending
24 question. But Mr. Lee, if you wanted to say anything, let
25 me know.

1 A No. I -- I wasn't -- I mean, maybe -- maybe it
2 lost in translation. I don't know what you are affirming
3 to; right? Because I was reading these three limitations:
4 Diving the file into chunks --

5 (Court reporter clarification.)

6 THE WITNESS: So I was confused when the -- Mr.
7 Lu said that this affirmative. I think, affirmative to
8 what? I mean, because I forgot was the -- what was the
9 question that he asked. So I just wanted to clarify that
10 all I said was that the three limitations that I -- I
11 read, right, "dividing the file into a plurality of
12 chunks; creating namespaces for one or more of the
13 plurality of chunks; and configuring the namespaces of the
14 one or more chunks." I was saying that these are the
15 limitations that's cited in the patent.

16 These are the necessary elements for creating a
17 searchable encrypted file. That's what I said. And then
18 Mr. Lu said, oh, that's affirmative. I'm thinking, okay,
19 affirmative to what? I mean, I was trying to clarify what
20 he was affirming to. So that's all.

21 BY MR. LU:

22 Q Sure. I mean, let me re-ask my question then.

23 A Yeah.

24 Q Let me see where it was. So to produce -- well,
25 the transcript's a little off, but to produce a searchable

1 encrypted file, you would need to divide the file into a
2 plurality of chunks, create namespaces for one or more of
3 the plurality of chunks, and configure the namespaces of
4 the one or more chunks such that content of the file is
5 encrypted in a manner that makes it searchable.

6 Do you agree?

7 MR. YUAN: Objection. Form.

8 THE WITNESS: So as I said, that's the language
9 written. But the way that I understand it is that
10 dividing files into chunks, creating namespace, and
11 configuring the chunks, so these are the namespaces of
12 the -- sorry. The last one I want to say is configuring
13 the namespaces of the one or more chunks. These are
14 necessary steps or elements for creating searchable
15 encrypted file. So basically, the result is that after
16 you perform these limitations, then, you know -- then the
17 content of the file -- basically, you know, the -- the
18 encrypted content of the file will become searchable.
19 That's how I read it.

20 BY MR. LU:

21 Q All right. But let me ask about this: So at
22 line 62, you still have a step where you -- where the --
23 the language of the step is "encrypting, by the gateway
24 device, using cryptographic key information defined by the
25 policy, content of the file to produce a searchable

1 encrypted file."

2 And then you have the three steps that we've been
3 discussing.

4 So would you agree that at least the searchable
5 encrypted file not only needs to perform the dividing,
6 creating namespaces, and configuring namespaces steps, but
7 it also needs to perform the encrypting content of the
8 file step?

9 MR. YUAN: Objection. Form.

10 THE WITNESS: Yes. I would agree that, you know,
11 for a file to be -- basically to create a searchable
12 encrypted file, you have the content needs to be
13 encrypted, but then, you know, these three elements need
14 to be -- limitations need to be executed. And these --
15 these three elements are dividing the files into chunks
16 and creating namespaces and configuring namespaces.

17 These limitations are independent of the
18 encrypting of the content. That's how I read it.

19 BY MR. LU:

20 Q Sure. No, I understand your position.

21 Just -- just so we have a clean record, let me
22 just ask it this way: So we -- the output of the step is
23 a searchable encrypted file. And the claim says in order
24 to produce that, you need to encrypt content of the file,
25 divide the file into chunks, create namespaces, and then

1 configure namespaces.

2 Would you agree?

3 MR. YUAN: Objection. Form.

4 THE WITNESS: So the way I read this is that --
5 just like the patent says, you need to encrypt the content
6 of the file, and then there are three limitations:
7 Dividing file into chunks, creating namespaces, and
8 configuring the namespaces. Now, it didn't say that these
9 have to be, you know, happening before or after the
10 encrypting content.

11 I mean, that's not -- the claim language doesn't
12 explicitly, you know, the ordering of -- of these elements
13 with respect to encrypting the content. But it's very
14 clear from a POSITA -- a Person of Ordinary Skill in the
15 Art -- point of views, encrypting content of the file is
16 independent of these three elements, meaning dividing the
17 file into chunks, creating namespaces, configuring
18 namespaces. Yeah.

19 BY MR. LU:

20 Q Okay. Putting -- putting aside if there's any
21 particular order, which I would agree I don't think there
22 is, you would agree that to produce a searchable encrypted
23 file, this claim requires encrypting content of the file,
24 dividing the file into a plurality of chunks, creating
25 namespaces for the chunks, and configuring the namespaces

1 in some particular -- in some order. It doesn't have to
2 be in that particular order.

3 Would you agree?

4 MR. YUAN: Objection. Form.

5 THE WITNESS: So like I said, the -- I mean,
6 that's when I read the claim language; right? Encrypting,
7 by the gateway device, using cryptographic information
8 defined by the policy, content of the file; right? So
9 that's one elements that needs to be done.

10 And then in order to produce a searchable
11 encrypted file, meaning that, in addition to encrypting
12 the content, there are other things you need to do, which
13 means dividing the file into chunks, creating namespaces,
14 and configuring the namespaces. Like I said, these three
15 limitations that I just cited, I read it as independent of
16 the encryption of the content of the file and -- and in no
17 particular order with respect to encrypting the content of
18 the file.

19 BY MR. LU:

20 Q Okay. I think we're in agreement.

21 Why don't we look at Claim 16, which is --

22 A Okay.

23 Q -- not a method claims. Column 20, line 48.

24 Do you see that?

25 A Yes.

1 Q And so this is a systems claim, which I believe
2 you mentioned earlier; is that right?

3 A Uh-huh.

4 Q Is that a yes? Sorry.

5 A It looks like it. Yeah.

6 Q All right. So the -- starting at line 59, there
7 is "an encryption module."

8 Do you see that?

9 A Let me see here. 59. Okay. Yeah.

10 Q So "An encrypted module, which, when executed by
11 the one or more processors:

12 "Using cryptographic key information defined by
13 the policy, produces a searchable encrypted file by
14 encrypting content of the file to be stored across one or
15 more cloud platforms;

16 "Divides the file into a plurality of chunks;

17 "Creates namespaces for one or more of the
18 plurality of chunks; and

19 "Configures the namespaces of the one or more
20 chunks such that content of the file is encrypted in a
21 manner that makes it searchable."

22 Did I read that right?

23 A Yes.

24 Q All right. So here we have -- well, let me --
25 let me ask it this way: Would you agree that Claim 16 is

1 similar to Claim 1?

2 MR. YUAN: Objection. Form.

3 MR. LU: Counsel, what's -- sorry.

4 What's -- what's the problem with that question?

5 MR. YUAN: It's ambiguous. What do you mean by
6 "similar"?

7 BY MR. LU:

8 Q Do you -- do you have an understanding of what
9 the word "similar" is, Dr. Lee?

10 A Plain and ordinary meaning.

11 Q Okay. So do you agree that Claim 16 is similar
12 to Claim 1?

13 MR. YUAN: Objection.

14 THE WITNESS: Yeah. Sorry. Go ahead.

15 MR. YUAN: Oh, just objection. Form.

16 THE WITNESS: Okay. I mean, it -- it -- I
17 haven't read it more carefully. But -- but looking at it,
18 it seems to be like the systems claim that, essentially,
19 is one way to -- one -- one possible way of implementing
20 the method claim of, you know, Claim 1 whether legally
21 that means similar or not, I -- I'm not lawyer.

22 But, you know, I -- I -- you know, but my point
23 is that I really understand that's one way they're
24 suggesting to implement the method in Claim 1.

25

1 BY MR. LU:

2 Q All right. I mean, just between you and me, I
3 don't think similar is a legal term either. I was just
4 using it in the plain meaning. So --

5 A Okay.

6 Q Right. And so this encryption module, this also
7 produces -- or I shouldn't say "also."

8 So this encryption produces a searchable
9 encrypted file; correct?

10 A Let me see. It didn't say that the end result
11 execution is a searchable encrypted file. It's basically
12 doing all these steps such that -- such that the file is
13 encrypted in a manner that makes it searchable. So I
14 don't know whether there's any additional steps or mods
15 that need to be -- need to be taken. That's -- you know,
16 I wish the patent claim language written more clearly.
17 But, you know...

18 Q So you -- you may have missed it, but at line 62,
19 it says, "produces a searchable encrypted file."

20 Do you see that?

21 A 62? Let me see.

22 Okay. All right. Let me see.

23 Yeah. So I mean, if -- if that -- that element
24 by itself, using cryptographic key defined by the policy
25 produced a searchable encrypting -- encrypted file by

1 encrypting content of the file to be stored across one or
2 more cloud platform. That element by itself, a POSITA
3 will say that's encrypted content.

4 The -- the -- the action of encrypted content by
5 itself does not produce a searchable encrypted file. I
6 mean, that's a -- any POSITA would agree with me. So I
7 mean, again, the language in the patent claim, the claim
8 language is written in such a way that -- I don't know
9 how -- how to -- how to say this. This is wrong to say "I
10 encrypt a file using the cryptographic key information,
11 and it was always searchable" because encrypted content
12 itself is encrypted content.

13 It transform -- transforming plain text of the
14 file content in deciphered text, that itself does not make
15 the encrypted content searchable (verbatim). There are
16 other things that needs to be done so, which -- talks
17 about; so that's why there's other elements in this claim
18 to say divide files in the chunks and so on and so forth
19 anyway.

20 Q All right. So one of the things that need to be
21 done is on the next page, column 21, line 1. This
22 encryption module "configures the namespaces of the one or
23 more chunks such that content of the file is encrypted in
24 a manner that makes it searchable."

25 Do you see that?

1 (Simultaneously speaking.)

2 THE WITNESS: Sorry. I see that was written.

3 But again, like I said, this no different our -- that
4 this -- this is not different from our discussion of the
5 Claim 1 language. Which means that, you know, dividing
6 files into chunks, creating namespaces, configuring
7 namespaces, these elements -- these limitations or
8 elements, they're completely independent of -- of
9 encrypting the content of the file. So that's -- that's
10 how I read as a POSITA.

11 And, secondly, I'm -- as a POSITA, I am just
12 totally confused. I don't agree with the -- with the
13 claim language that the prior limitations say, "using
14 cryptographic key information defined by policy, produces
15 a searchable encrypted file by encrypting content of the
16 file to be stored across one or more cloud platforms."
17 Like I said, POSITA would be to say -- "encrypted content
18 and storing the encrypted content would make it searchable
19 (verbatim)." Does not make any sense; okay?

20 BY MR. LU:

21 Q So is it your -- is it your position that this
22 limitation on Claim 16, you don't understand the scope of
23 this limitation?

24 MR. YUAN: Objection. Form.

25 THE WITNESS: So what I'm trying to say POSITA

1 would agree with me that the action of encrypted content
2 itself does not make the content -- encrypted content
3 searchable. That's why I have this -- I have problem with
4 this limitation language. To say that -- essentially,
5 saying that using the key to encrypt the -- basically,
6 saying using the "cryptographic key information defined by
7 the policy, produces a searchable encrypted file by
8 encrypting content of the file to be stored across one or
9 more cloud platforms." Like I said, if I read it as
10 POSITA, it seems to suggest that just by encrypting the
11 content of the file and -- and make the encrypted contents
12 to be stored across one or more cloud platforms would, by
13 itself, produce a searchable encrypted file. That does
14 not make any sense the -- the way it's written. So that's
15 why I said a POSITA would agree with me.

16 BY MR. LU:

17 Q So it's your opinion that a POSITA would not
18 understand the scope of this limitation; correct?

19 MR. YUAN: Objection. Form. Mischaracterization
20 of the witness's testimony.

21 THE WITNESS: What I'm trying to say is a POSITA
22 would -- would agree with me that the action of encrypted
23 content itself does not produce searchable encrypted file.
24 In fact, that's why, it -- you know, the whole Claim 16
25 goes on to say, oh, you also need to divide the files into

1 chunks, create namespaces, configuring namespaces.

2 Like I said, when we discussed Claim 1, these
3 three additional limitations, they're independent of the
4 action of encrypting the content of -- of the file and --
5 and the -- the order of their -- you know, the order of
6 taking these actions also independent of the action of
7 encrypting the content of the file. So I mean, I think a
8 POSITA would agree with me. You know, so...

9 BY MR. LU:

10 Q So a POSITA reading this step of using
11 cryptographic key information defined by the policy
12 produces a searchable and encrypted file by encrypting
13 content of the file to be stored across one or more cloud
14 platforms. It's your opinion that a POSITA would not know
15 what that means?

16 MR. YUAN: Objection. Form.

17 THE WITNESS: So like I said, a POSITA reading
18 this would say, "How this done?"

19 (Court reporter clarification.)

20 THE WITNESS: So what I'm trying to say, a POSITA
21 reading this would say, "How this -- this is done?"
22 Unless the 678 patent itself talks about, oh, here's
23 example of encrypted content of the file by itself makes
24 the encrypted file searchable. I mean, there's no such
25 example of that -- that I know in 678. So a POSITA

1 reading this would say, "That's just wrong the way it's
2 written."

3 Unless, like I said, Mr. Lu, you told me -- you
4 showed me, "Hey, here's 678. Here's a -- here's example
5 of that."

6 BY MR. LU:

7 Q Okay. So reading -- reading this part where it
8 says, "produces a searchable encrypted file by encrypting
9 content," it's your opinion that a POSITA doesn't know
10 what that means; correct?

11 MR. YUAN: Objection. Form.

12 THE WITNESS: Like I said, a POSITA would say,
13 "There's something missing here from this statement."

14 Like I said, every POSITA -- POSITA would agree
15 with me that just the action of encrypting the content of
16 a file would not make the encrypted file searchable. You
17 need to do additional steps. So that's, you know, I mean,
18 I wouldn't be -- I'm not a lawyer, but I -- I would -- you
19 know, a POSITA would understand that yes, you need to
20 encrypt the contents, and yes, you need to do all these
21 additional steps. But that's -- unfortunately, that's not
22 how this Claim 16 is written.

23 (Exhibit 1023 was marked for
24 identification.)

25

1 BY MR. LU:

2 Q Okay. All right. Sorry. Give me a second.

3 Dr. Lee, do you have a copy of Exhibit 1023?

4 A 1023? What is that?

5 Q It is a paper called a

6 Layered Naming Architecture For the Internet by

7 Hari Balakrishnan and others.

8 A Not in front of me, no.

9 Q Okay. That's all right. I'm going to upload it
10 to the Zoom chat.

11 A Okay.

12 Q And then you can download it.

13 So let me know when you've downloaded it.

14 A Okay. I've downloaded it, yes.

15 Q Okay. And then let me know when you've opened
16 it.

17 A Yes, opened it.

18 Q Are -- are you familiar with this document?

19 A I know a bunch of these authors, you know; so
20 I -- I may have read them somewhere, you know, in --
21 obviously, in preparing for my declaration. All that
22 about the details have escaped me.

23 Q Okay. But you understand this is an exhibit that
24 you cited in your first declaration? Do you recall that?

25 A Quite possible. But I thought the scope of this

1 deposition is my supplemental declaration; so why are we
2 talking about exhibits that -- that associated with my
3 original declaration? This is out of scope.

4 Q No, it's not. I believe you also cited it in
5 your second declaration, as well, or at least referred to
6 it.

7 A Really? Okay.

8 Q So can you go to page 2 of this paper?

9 A Okay.

10 Q So in the middle, on the left column --

11 A Uh-huh.

12 Q Well, so the second full paragraph, it says --
13 starts with "our principals, naming framework."

14 Do you see that on the left side?

15 A Yes.

16 Q Okay. And then several sentences down,
17 approximately the middle of this paragraph, it says, "From
18 Semantic-Free Referencing (SFR), we borrow the idea that
19 the surface identifier namespace be flat (meaning that the
20 identifiers are unstructured and not overloaded with any
21 semantics about the object being named, e.g., a flat
22 identifier might be a number chosen uniformly at random
23 from [0,2 to the 128 minus 1]), and from HIP and UIP
24 again, we borrow the idea that the endpoint identifiers be
25 flat."

1 Did I read that right?

2 A Yeah.

3 Q Okay. What does it mean for an identifier to be
4 flat?

5 A I mean, I said -- I mean, that the identifiers
6 are unstructured and not overloaded with any semantics
7 about object being named. So, basically, they give
8 example of flat identifier might be a number chosen
9 uniformly at random from 0 to 2 to the 128th minus 1.
10 And -- yeah. So basically, an ID is number. An ID does
11 not have a -- does not give you any insight into the
12 content. That's what it meant for that.

13 Q So -- so why would a random number between 0 and
14 2 to the 128th minus 1 be unstructured and not overloaded
15 with semantics?

16 A Okay. Just imagine if you just secured a
17 number -- I mean, I'm sure there's some -- something about
18 where they got it -- you know, which day he got it, just
19 the meaning of it. So imagine that's not, it's just very
20 similar to that. Just give you a number. Memorize it.
21 We can search you, you know, with the number. Does the
22 number mean anything? No.

23 Again, like I said -- social security may not be
24 the best example because I think there's some -- something
25 about regions. But what about a bank account number? Is

1 there any -- is it flat? I would -- you know, I hope
2 that's the case. So my point is, yeah, you can ID an
3 account. And the ID can be flat. What's wrong with that?
4 Nothing.

5 Q I'm sorry. I missed your -- your -- oh, you can
6 ID an account? Is that what you said?

7 A Yeah. Yeah. You can identify an account with a
8 flat ID.

9 Q So for an ID -- an identifier to be flat -- well,
10 let me -- let me see if I can understand this.

11 So a random number between 0 and 2 to the 128th
12 minus 1, let's say, I was given or -- given an identifier
13 with such a random number. Looking just at that number,
14 you wouldn't be able to say anything about me, about who I
15 am, about what kind of person I am; correct?

16 MR. YUAN: Objection. Form.

17 THE WITNESS: So that's one example. I mean,
18 again, depending on the context. But I think in this
19 paper, talking about "flat" means that -- unstructured and
20 not overloaded with any semantics of the object being
21 named. So it means that by looking at this flat -- flat
22 identifier, you don't know -- yes, that still means that
23 each object has it's own -- has it's unique identifier.
24 But looking at it -- looking at the identifier itself does
25 not tell you anything about the object. That's what they

1 meant.

2 BY MR. LU:

3 Q Okay. So let me see if I understand this
4 correctly. So you -- you have a namespace that defines a
5 set of identifiers; right?

6 MR. YUAN: Objection. Form.

7 THE WITNESS: So a namespace normally tells you
8 the convention -- the naming convention and the range of,
9 you know, values. And the range can be, you know, defined
10 by a mathematical formula. Yeah.

11 BY MR. LU:

12 Q Okay. So in this case, it's -- the naming
13 convention that it's defining is that your objects are
14 going to have a random number -- let me -- let me -- let
15 me withdraw that.

16 So in this case, the naming convention that this
17 namespace is defining is that your objects are going to be
18 named with a random number between 0 to 2 to the 128th
19 minus 1; is that right?

20 A Yeah. It talks about the identifier being chosen
21 uniformly at random from 0 to 2 to the 128th minus 1.

22 Yeah.

23 Q Right. And so for this namespace to get an
24 identifier, I randomly choose a number from 0 to 2 to the
25 128 minus 1; correct?

1 MR. YUAN: Objection. Form.

2 THE WITNESS: So again, I think the key word here
3 is "uniformly random." So normally, there's a math behind
4 it. You can't just, you know -- there's, you know, a
5 mathematical formula and algorithm to do that, to
6 basically -- makes it -- I think from a mathematical point
7 of view, it's random and uniform distributed. There are a
8 lot of, you know -- yeah. So I -- I do -- I wouldn't say
9 that a person manually -- randomly selects something and
10 says, oh, my claim's random uniformly. No. You -- to --
11 to say that way, technically, you -- we have a process, an
12 algorithm, to do this.

13 BY MR. LU:

14 Q Okay. So let me -- let me re-ask my question
15 again.

16 So for this namespace to get an identifier, I --
17 I choose uniformly at random from 0 to 2 to the 128 minus
18 1; correct?

19 MR. YUAN: Objection. Form.

20 THE WITNESS: So I'm not sure what -- what do you
21 mean by, you choose? How do you choose? So like I kept
22 saying is that that normally, we, POSITA, will understand
23 that you use some of these -- you know, the number of
24 algorithms that you can use to, basically, pretty much
25 mathematically give you random -- you know,

1 mathematically, you can -- can randomly select --
2 uniformly select from this range ID. Yeah. There's --
3 there's a way to do it. Like, hashing is one of them.

4 BY MR. LU:

5 Q Okay. So you have an algorithm, like hashing,
6 that gives you an identifier from the namespace.

7 Is that what you're saying?

8 A So what I'm saying is hashing is one example of
9 mapping an object to a identifier within a -- within a --
10 a value range. Let's say, it can be 0 to 2 to the 128
11 minus 1 or 2 to the 55 minus 1, whatever, depending on
12 the -- depending on the hash function you're using.

13 Yeah. So hashing is one -- one way of, you
14 know -- one way of -- one way of generating these flat
15 IDs. Now, again, with hashing, it's guaranteed -- it's
16 mathematically infeasible to have -- so sorry -- it's,
17 basically, make it -- make it practically infeasible to
18 have two different objects mapped to the same ID.

19 Let's put it that way.

20 Q Well, that's the idea of it. And that's
21 modern -- modern hashing algorithms, I assume, meet that
22 idea; correct?

23 A Yeah.

24 Q But that's not necessarily the case; right?

25 A The what?

1 MR. YUAN: Objection. Form.

2 BY MR. LU:

3 Q Is -- is that necessarily the case? That a
4 hashing algorithm would always produce -- or, you know, it
5 would be mathematically infeasible to produce the same
6 identifier from a hashing algorithm?

7 A You want to go --

8 MR. YUAN: Objection.

9 THE WITNESS: Yeah. Sorry. If you go -- you
10 want to go to the -- the weeds, I mean, it's not
11 mathematically zero, but -- but the probability is very,
12 very low. Let's say 1 over 2 to the 256. You know, if --
13 if the -- if the hash length is 2 -- is 512, then the
14 probably of two objects having the same hash value, no --
15 normally, we can estimate it's 1 over 2 to the 256, which
16 is practically zero from a math point of view; right?

17 It's not absolutely zero, but just like, hey,
18 maybe there's a still smaller chance for you winning the
19 lottery kind of thing. But anyway, so...

20 BY MR. LU:

21 Q Okay. So it says -- looking -- looking back at
22 this document, it says, "We borrow the idea that the
23 service identifier namespace be flat."

24 So what -- what does that mean for the namespace
25 to be flat?

1 A Well, like I said, the way that they explain --
2 first of all, I don't -- I mean, first of all, it's
3 talking about IDs being, you know -- they're talking
4 about, essentially, the IDs within the namespace are flat.
5 But the namespace itself flat, I need to read further the
6 paper to -- to -- to recall the details. But it really
7 explains; right?

8 They borrowed the -- borrowed the idea that
9 service identifier namespaces be flat, meaning -- they
10 actually explain the meaning of that, meaning that the
11 identifiers are unstructured and not overloaded with
12 semantics about the object being named, e.g., an
13 unidentified -- e.g, a flat identifier might a number
14 chosen uniformly at random from 0 to 2, 128 minus 1 and so
15 on.

16 Now -- so they really talk about IDs being not
17 structured and overloaded with any semantics of the
18 object; right? So that's what they mean by "flat."

19 Q Okay. So I -- I guess I'm just trying to
20 understand the relationship between a flat namespace and
21 flat identifiers. So is it saying that for a namespace to
22 be flat, the namespace is defining a range of values for
23 your identifiers that result in flat identifiers?

24 MR. YUAN: Objection. Form.

25 THE WITNESS: So I mean, I think they already

1 explain what they mean, what they mean as a -- you know,
2 what they mean by saying that the service identifier
3 namespace be flat. They already talk about the identifier
4 themselves being unstructured and overloaded with any
5 semantics of the objects being named. They didn't talk
6 about it after you have all these numbers.

7 How do you put them in a table? Do you have a
8 hierarchy of tables? All that, they didn't talk about
9 that. And that's -- they also going to -- what they meant
10 by flat was not flat, meaning, again, they explained what
11 they meant by flat namespace is really focusing on the IDs
12 themselves are not structured and do not -- and are not
13 overloaded with any semantics of the objects.

14 BY MR. LU:

15 Q Okay. So in a flat namespace, it defines a set
16 of flat identifiers? Is that what it says?

17 A So again, I don't recall. There's a, you know,
18 textbook definition of what a flat namespace means. I
19 don't recall that. You know, a namespace can mean
20 different things in different contexts, but they explain
21 what they meant by a flat service identifier namespace.
22 They really -- the explanation focusing on what they meant
23 is that the identifiers are unstructured and are not
24 overloaded with any semantics of the objects being named.
25 And that's all.

1 Q Okay. Maybe -- maybe my -- maybe my
2 misunderstanding is, I guess, I'm confused about what --
3 let me -- let me -- let me withdraw that question.

4 So what is the relationship between a namespace
5 and an identifier?

6 MR. YUAN: Objection. Form.

7 THE WITNESS: So with a namespace, basically,
8 each objects has a unique identifier within the scope of
9 the -- within the scope of context of namespace.

10 That's all.

11 BY MR. LU:

12 Q I see. Okay.

13 So I wanted to ask you about hashing algorithms
14 that we were discussing earlier.

15 A Okay.

16 Q Do hashing algorithms result in identifiers that
17 are chosen uniformly at random?

18 MR. YUAN: Objection. Form.

19 THE WITNESS: That's what these are, objective of
20 hashing function, I would say.

21 BY MR. LU:

22 Q So the objective of a hashing function is to
23 distribute, uniformly at random, numbers within a certain
24 range; is that right?

25 A Hold on. I wouldn't say at random. Basically,

1 hashing function takes an input and output a -- the output
2 is the hash value of the input; right? So the mapping's
3 not completely random from input to output, meaning that
4 the same input would guarantee you the same output; okay?
5 That's deterministic.

6 The point is the output looks random and
7 uniformly chosen from this range. So that, by looking at
8 the hash, meaning the output of the hashing function, you
9 cannot figure out what the input is.

10 Q Okay. And -- and for, like, a hashing function
11 like -- or let me ask this first: Is -- SHA2, is that a
12 hashing function?

13 A Yeah. SHA2 stands for -- SHA, S-H-A, stands for
14 Secure Hashing Algorithm.

15 Q And is there a range of values that the SHA2
16 algorithm outputs?

17 A Yeah. I believe so, yeah. I think it's 512, if
18 I remember right, but, you know, I could be wrong. But it
19 doesn't really matter. Yeah.

20 Q By 512, you mean the ranges from 0 to 2 to the
21 512 minus 1?

22 A Yeah.

23 Q 512 being the number of bits in the identifier
24 that it outputs?

25 A Yes.

1 Q Okay. And 2 to the 512 minus 1, that's a --
2 that's a very large number; right?

3 A Yeah. I think it's either 512 or 256, but in any
4 case, huge number. Like I said, you know, for you
5 define -- if you're able to find or guess correct input
6 that had produced the output or find another different
7 input that happened to create a same output, I think the
8 chance would be -- the chance would be probably smaller
9 than, you know, you winning -- winning the lottery kind of
10 thing. So nobody...

11 Q I definitely think it's less than -- less than
12 you winning the lottery.

13 A Yeah. Nobody -- nobody should try that. Yeah.
14 Anyway, yeah.

15 Q All right. So -- so SHA2, you give it an input,
16 and then it outputs a number in this range. And in terms
17 of the -- the ideal for SHA2 is that the numbers it
18 outputs are uniform; right?

19 MR. YUAN: Objection. Form.

20 THE WITNESS: So like I said, the SHA2, the --
21 the main objective is that the output looks random enough
22 that it's very hard for you to guess what the input is and
23 then also very hard for you to, you know, come up with a
24 separate -- separate -- just even if you know the input --
25 say -- suppose you say, "I want to change the input --

1 modify the input in such a way that it would produce the
2 same output," that's super, super hard, nearly impossible,
3 because the way that hash value is computered makes it
4 random enough. Yeah.

5 BY MR. LU:

6 Q Yeah. I mean, if you could do that, you --
7 you've basically broken the hash, and now it's useless;
8 right?

9 A Yeah. I mean --

10 MR. YUAN: Object to form.

11 THE WITNESS: Yeah. I just -- yeah. I mean, I
12 don't think any -- any of these algorithms have been
13 officially broken, no.

14 BY MR. LU:

15 Q Yeah. They haven't been broken because -- well,
16 we don't need to get into that.

17 A Right.

18 Q So I actually just probably asked you this:
19 What -- what does it mean to be chosen uniformly at
20 random?

21 A So you're basically -- so depending on which
22 algorithm you use, let's say hashing, there's basically --
23 they try to -- you basically -- any input that you give,
24 like, for example, you said, input zero. You don't
25 want -- you don't want to be so easy guess, oh, that must

1 be zero. So they, basically, preceded a lot of junk, a
2 lot of noise. Basically, whatever input you -- you give,
3 it all amass a ton of junks, like, basically randomly
4 chosen from this range. It's, basically, you know, on top
5 of your input. And then the algorithm does a lot of crazy
6 stuff, shifting, you know -- you know, whatever,
7 expanding, whatever things. It basically, essentially,
8 makes the correlation between the input and -- and output
9 super harder to -- to -- to track. I mean, that's --
10 that's the same idea of this paper that was just
11 described. I mean, that the hash value looks so randomly
12 and uniformly chosen and has no structure and does not
13 tell you anything about the input. That's -- that's same
14 objective as what this paper talk about.

15 Q Okay.

16 MR. LU: I pass the witness.

17 THE WITNESS: Okay. All right. Thank you.

18 MR. YUAN: I -- I don't have any questions or
19 redirect.

20 THE WITNESS: Okay. Okay. All right. Thank
21 you.

22 (Simultaneously speaking.)

23 THE REPORTER: We're still on the record.

24 Did we want to close out?

25 MR. LU: Yeah. We can close out.

1 THE WITNESS: Okay. Thank you.

2 Mr. Lu, thank you.

3 THE REPORTER: Okay. Guys, I just have a --

4 THE WITNESS: Thank you, Matthew.

5 THE REPORTER: Thanks, Doctor.

6 (Court reporter clarification.)

7 THE REPORTER: Let's see.

8 This one is expedited. You're both getting
9 copies. Anything else I'm missing?

10 Oh, roughs. Would you guys need roughs?

11 MR. LU: Yeah. I'd -- I'd like a rough. Could I
12 do one, like, today hopefully or, you know, tomorrow?

13 THE REPORTER: Oh, yeah. You'll get it in like
14 10 minutes.

15 MR. YUAN: And can I have a rough, as well?

16 THE REPORTER: Sure. You guys got it.

17

18 (Whereupon, the deposition concluded at 11:00 A.M.)

19

20 (DECLARATION UNDER PENALTY OF PERJURY ON THE FOLLOWING
21 PAGE HEREOF.)

22

23

24

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3
4 I, WENKE LEE, PHD, do solemnly declare under
5 penalty of perjury that the foregoing is my deposition
6 under oath; that these are the questions asked of me and
7 my answers thereto; that I have read same and have made
8 the necessary corrections, additions, or changes to my
9 answers that I deem necessary.

10 In witness thereof, I hereby subscribe my name
11 this day of _____, 2024.
12
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18 _____
19 WITNESS SIGNATURE
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CERTIFICATION
OF
CERTIFIED SHORTHAND REPORTER

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 placed under oath; that a verbatim record
of the proceedings was made by me using machine shorthand
which was thereafter transcribed under my direction;
further, that the foregoing is an accurate transcription
thereof.

I further certify that I am neither financially
interested in the action nor a relative or employee of any
attorney of any of the parties.

IN WITNESS WHEREOF, I have this date

subscribed my name



Matthew Sculatti, CSR No. 13558

Dated: May 16, 2024

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