UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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WIZ, INC.,

Petitioner,

v.

ORCA SECURITY LTD.,

Patent Owner.

_____

Case IPR2024-00863

Patent No. 11,663,031

_____

Deposition of ANGELOS STAVROU, Ph.D.

Conducted virtually via Zoom

Wednesday, March 5, 2025

9:06 a.m. CST

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Pages: 1 - 355

Reported by: THERESA A. VORKAPIC,

CSR, RMR, CRR, RPR

Orca Security Ltd.
Exhibit 2077
Wiz v. Orca
IPR2024-00863, -00864, -00865
Ex. 2077-001

Deposition of Angelos Stavrou, Ph.D., conducted virtually via Zoom, pursuant to notice before Theresa A. Vorkapic, a Certified Shorthand Reporter, Registered Merit Reporter, Certified Realtime Reporter, Registered Professional Reporter and a Notary Public in and for the State of Illinois.

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A P P E A R A N C E S (Continued)

ALSO PRESENT:

Leyhbert Sharp, Remote Tech

Planet Depos

C O N T E N T S

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P R O C E E D I N G S

THE REPORTER: Would you raise your right hand, please.

(The witness was duly sworn.)

ANGELOS STAVROU, Ph.D.,

called as a witness herein, having been first duly sworn, was examined and testified as follows:

EXAMINATION

BY MR. LUMISH:

Q Good morning, Dr. Stavrou. We have not met before. My name is Doug Lumish. I am a lawyer for Orca.

You understand that, right?

A Yes.

Q And I'm here today to take your deposition as it relates to declarations you submitted for IPR proceedings related to three of Orca's patents, what we refer to as the '031, '032 and '685 patents.

You understand that as well?

A Yes, that's correct.

Q And have you been deposed before, sir?

A Yes, sir.
Q How many times?
A Twice.
Q Have you had a chance to prepare for your deposition today?
A Yes.
Q Good. One thing, given that we're remote, I have a few questions for you about that. I ask these of everybody. I hope you take no offense to them. But are you alone in the room right now?
A Yes, sir, I'm alone.
Q Do you have any sort of messaging applications open that would allow you to exchange information with anybody, Wiz's counsel, other folks in your group, something like that to help you formulate answers or to work on the deposition today in any way?
A No, sir.
Q I'll ask you to keep it that way, if you would, please, and just do your best to answer my questions on your own.
Do you have anything in front of you in

hard copy?

A I do have three boxes of exhibits on my left and right, hard copies and three closed boxes. I have not opened the boxes at this point. I would like to have a paper copy to browse through my declarations, if possible, but, you know, because I find that reading from paper to be easier for me.

But, you know, I will need your approval to do so, but I will caution that, you know, I'm not as good with, you know, running through the documents in PDF, but if you do not object to have my declarations and exhibits in a paper copy next to me, they are unmarked, so they are clean copies.

Q Let me just confirm that.

So the paper copies that you just referred to don't have any annotations, highlighting --

A Absolutely not.

Q -- any flags, anything like that, you bend the corners down to help you find anything, anything along those lines?

A I have not even seen the boxes inside. I don't know if they have all the exhibits that you -- literally, there are three boxes next to me. I am hoping they have all the exhibits, and I have not even browsed through the boxes yet.

I have them here for the ability to basically grab a hard copy of the documents that you might suggest as exhibits in this deposition.

Q Very good. I think that will be fine.

Why don't we wait until I ask you some questions that don't go to any of those exhibits and then we'll take a short break to let you go ahead and pull out whatever you want and get it there on the table for you.

Just for the record, though, I have also put into the exhibit share folder a series of documents. I just wanted to get them out up front in case you wanted them during the course of the deposition.

They include your three declarations, so each of which is -- hang on a second before I get these numbers wrong -- each of which was

identified as Exhibit 1002 to the respective or inter partes reviews, so there's Exhibit 1002-31-32, and -685.

I also put the three patents at issue, the three Orca patents at issue, from those IPRs in the exhibit share. Those are each marked as Exhibit 1002, one of them 1002-31, 1002-32, and 1002-65.

And then I put what I considered the primary references from your declarations in the exhibit share that included Exhibit 1007, which is the Veselov reference; 1048, which was the Price reference; 1049, which is the Huseinovic reference; 1070, which is the Hutchins reference; and 1078, which is the Hufsmith reference.

So, those are what I put in there so far. If you want to grab those at a short break in a moment to get them all in front of you, that's fine. Whatever is easier for you, I'm happy to oblige.

A Yes. Do you want me to do that now or should we wait?

Q No, why don't we wait just a moment. I've got a series of questions for you that don't require those exhibits from my perspective. If you feel like you need them, then we can shift.

Does that make sense?

A Yes.

Q You told me you were able to prepare for your deposition. Without revealing the substance of any communication with any lawyers, can you tell me in general what you did, please, to prepare?

A I went through the materials in the -- that you just mentioned, like the patents themselves from Orca, my declarations and some of the supporting exhibits that were part of the IPRs.

Q And how much time would you say you spent preparing for the deposition in the way you just described?

A I've been in this case for almost a year now, I think. Are you asking me for the last few days or in general, because I've been in the case

for a year? So I've done a lot of prework, I would say, before reaching this point, so I would -- we spent, like, a few weeks reading the material.

There is a lot of material. There are three declarations and each one of them has a lot of exhibits, so I would say many hours. I cannot put a specific number, but many hours going through the material and also patents and exhibits.

Q Are you able to give me any reasonable range of hours that you've spent, just preparing for the deposition? I don't mean working on the case as a whole.

A I would like you to because I want to be precise. I mean, I would say it's probably more than three, four days, but other than that, I would not be able to give you an exact number.

As I have to check, you know, exactly the number of hours, and I didn't work full-time on this over the period of the time, but I would say at least two, three day's worth of work.

Q And you mean two or three full days, I take it?

A Correct.

Q In your preparation for the deposition, did you meet with Mr. Argenti or any other counsel?

Again, I don't want you to tell me what you said to them or what they said to you. I just want to know if you met.

A Yes.

Q Was that in person, by phone, by Zoom, some other way?

A All of the above.

Q All of the above.

And when did you first begin to meet in preparation for the deposition specifically?

A I would say it was maybe three weeks ago when I got contacted, that we would have a, you know, three, four weeks that we have a deposition to schedule.

And then we had, like, I believe, three calls over the period leading to the deposition

today, and yesterday we had an in-person meeting.

Q How many hours would you say you've spent in the meetings you've just described, with counsel?

A I mean, are you talking about specifically with the meetings with counsel or in general preparing for the deposition?

Q Just the meetings with counsel now.

A Again, I'm going to give you I would say an estimate because I don't have an exact number. I would say at least 14, 12 to 14 hours.

Q Other than the lawyers from the Wilson firm, did you speak with anybody else to prepare for your deposition today?

A No, sir.

Q You didn't speak with anybody from Wiz, for example?

A No, sir.

Q Did you have any colleagues at the university who helped you in your work as an expert, that you spoke with in any way, related to this case?

A No, sir.

Q I want to make sure my question was clear. I mean that in the broadest sense, not just for the deposition, but in your work on this case, have you consulted with anybody from the university that has assisted you in any way?

A No, sir. I have not talked to anybody.

Q I know you have excellent counsel with you, so I'm not going to go through all the rules of the road for depositions, but if you become uncomfortable with any of the rules, please don't hesitate to ask questions.

You've been excellent so far, letting me ask my questions before you jump in with an answer. I appreciate that. And ask you to continue that. That's really helpful for our court reporter. You'll be shocked to hear, she can't record both of us speaking at the same time, so it's important we try not to do that.

Other than that, you understand you're under oath today?

A Yes, sir.

Q Is there any impediment to your ability to testify to the best of your ability, of any, for example, drugs, alcohol, things like that that might impede your ability to testify today?

A Not to my knowledge.

Q Is there any reason you can think of why you can't give me your best testimony today?

A I cannot.

Q You said you had two prior depositions.

Were both of those instances where you were working as an expert?

A That's correct, sir.

Q Were they both in patent cases?

A They were in patent cases, yes.

Q And were they both in proceedings like this one that we call IPRs, inter partes reviews?

A I believe one of them was for claim construction, but it was as part of an IPR, but it was not -- basically, it was for claim construction.

Q Okay. So you haven't testified as an expert in a District Court case, always in --

A No, sir.
Q -- PTAB proceedings; is that right?
A That's correct, sir.
Q And are you able to tell me the parties that you were working for in those prior depositions?
A I don't know if that is -- if I'm allowed to say the parties. I mean, one of them is a part of my curriculum vitae. It happened many years ago, and the other one happened a few weeks ago, and that's why I cannot tell you for sure if I'm allowed -- if it's public knowledge at this point.
I'm happy to provide that information at a later time when it becomes public, but right now, I'm worried that I might be disclosing privileged information.
Q Okay. And I appreciate that. I'm not trying to get you in any trouble for revealing anything you're not permitted to. I would ask you, maybe at a break, if you could discuss with Mr. Argenti or anybody else to see if you're able to answer that question.

Normally, these kinds of proceedings, who the expert is and that they participated, is public, but I don't know your case. And so, I don't want to tell you that I'm sure that's true.

So that's for the most recent one.

How about the older case, are you able to tell me who you worked with on that one?

A I need to pull out my CV. I worked -- it was, again, I think, an IPR. The case number is available in my CV. It was many, many years ago, so I don't recall all the details, but, you know, it's part of my CV, so you can look it up.

Q Okay. And what kind of technology -- let's start with the most recent case, the one you did a couple of weeks ago.

What kind of technology was it, in a broad question sense? You don't need to tell me any secret details of it. But in a broad sense, what kind of technology were you testifying about?

A I don't think that the technology was relevant specific to this case, if that's what you're asking. It was -- in general, it was

about -- let's put it this way: It was a virtualization in general. It was about virtualization. I don't want to go into details.

Again, I'm in fear of revealing information that I shouldn't. Again, I'm happy to -- it might be even public now, but when it becomes public, of course, you will have access to it. I just don't want to put -- again, it was for claim construction, so I don't think it was relevant to anything to do with this case.

Q Have you testified ever as an expert related to computer security technologies?

A Yes. I believe that my prior deposition that happened many years ago, it was about security, cybersecurity.

Q You think it was or you're sure it was?

A I mean, it's been many years ago. I need to check again. It was prior to COVID, too, so it was many years ago.

Some of the aspects of what I do in cybersecurity, they come into declaratory depositions regardless, and a lot of technology

has security implications. So, yeah.

Q But I'm asking, technology specific to cybersecurity, computer security, part of that industry for businesses making products or services that go to that.

A My field and my Ph.D. is in cybersecurity, so I wouldn't be surprised if my deposition had elements of that, but I don't recall at this stage to let you know. I mean, I believe it's public. You can take a look at it.

Q You mentioned your Ph.D. What is the subject matter of your Ph.D.?

A The subject matter of my Ph.D. was denial of service attacks.

(Reporter clarification.)

BY MR. LUMISH:

Q And when did you get your Ph.D.?

A In 2007.

Q And you have a master's degree as well, or am I misremembering that?

A I have, I believe, two master's degrees in the field.

Q When did you get the master's degrees?
A At different times. As I said, it was many years ago. I can pull out my CV. One second. Just give me one second. It's part of my declaration, I believe.
Q The reason I'm asking is, it doesn't have the dates. You do list your degrees, I think, in your declaration, but I didn't see, at least in the copy I'm looking at right now, the dates that they were obtained.
A Just give me a second. Again, my CV is publicly online. I can point you to the website.
Q That's okay. Please don't go online and pull down additional information like that. We can come back to that.
A I don't see -- I'm sorry about that. I just don't see --
Q That's okay.
A I don't have it as an exhibit.
Q It's perfectly fine. If you remember, that would be great. If you don't remember, that's a perfectly fair answer as well.

I assume you got your master's degrees before your Ph.D. in 2007; is that true?

A That's correct.

Q How much time would you say you spend working as an expert witness on litigation matters, as opposed to any other occupation, just as a percentage or a portion?

A Actually, very little. It just happened -- in fact, I've never -- I've not been engaged as an expert witness for a long time. I had my primary -- my primary occupation is an academic, and also I have an entrepreneur, too. I've established companies with my students.

Q Entrepreneur, is that the word you used, sir?

A Yes, sir.

Q So as a proportion, how much time would you say you've worked as an expert versus in other occupations?

A I would say less than 5 percent.

Q You mentioned some -- that you've been an entrepreneur. Your declaration lists some

companies like Quokka, Kryptowire, Aether Argus and Impedyme -- Impedyme, is that how you say that?

A Yes, that's correct.

Q Are those all computer security companies?

A Some of them are.

Q Which ones?

A Quokka is a mobile security company. Kryptowire is security projects, but not just security projects. Impedyme is in power electronics. It doesn't have anything to do with security, cybersecurity I mean.

Q What about Aether Argus?

A Aether Argus is also in the security field in the sense -- in the broader sense. It provides out-of-the-box cybersecurity solution. It's doing it with hardware instead of software, so I would say -- I would classify it as in cybersecurity, too, in the broader sense.

Q Do any of those companies that you've worked with as a entrepreneur compete with Orca in the security space?

A No, sir. They're in completely different areas and field. We do not have products that compete with Orca.

Q In what way are the companies that you've worked with or helped found, as you put it, completely different from what Orca does?

A First of all, just to clarify, I'm part of -- I'm the chairman of the board in Quokka. And in other companies, I am involved in the business development part, and I'm familiar with the products.

But, of course, there is no -- we have not -- you know, have done market analysis, and if you're asking me how I know is because all of these companies, they have their own -- what do we call it? -- market segment, and some of them have venture capitalists, and we have extensive analysis of market sales, and Orca and Wiz have never come up to us either as a competitor.

And I would even say, Orca and Wiz are two companies that I personally do not have any -- did not have any knowledge of prior and during these

proceedings.

Q I'm going to ask you about that in a moment. I want to get a little bit more into detail on that, but I appreciate that.

Let me get some spellings for our court reporter, if I could, please.

The four companies that you said you've worked with, one is Quokka.

Is that Q-U-O-K-K-A?

A That's correct.

Q And then the second was Kryptowire. That's K-R-Y-P-T-O-W-I-R-E; is that right?

A Correct.

Q And labs, Kryptowire Labs?

A I mean, this was a name recently came to light but it's still doing business as Kryptowire, LLC, so both names apply.

Q All right. And then Aether Argus is A-E-T-H-E-R, second word A-R-G-U-S?

A Correct.

Q And then the fourth company is Impedyme, I-M-P-E-D-Y-M-E?

A Absolutely, correct.
Q Did you develop any of the products for any of those four companies?
A I mean, you have to be more specific. What do you mean?
Q Did you help design, develop, architect, in other words, contribute to the technology of any of those four companies?
A Yes.
Q All four or any particular ones?
A I mean, in various roles, I participate in the products in the sense that -- so let me be very clear. Like, the question was very broad.

There are products that I have bigger role than others. I need to know more specific about specific products to give you my specific involvement on the specific product for the specific company.

So while I answered that yes, I was participating in these products, the real answer is -- the correct answer is that these companies especially Quokka, which I'm the chairman of the

board, I have not been involved in the day-to-day activity for the product development for quite a while now, for four years.

With Aether Argus, again, I am one of the founding members, but I don't participate in the day-to-day meetings of the product development.

Some of the projects that we have, for example, at Kryptowire, are led by other people, and they -- again, while I have knowledge of what the companies might be doing in terms of research and development, I don't have absolute knowledge of everything that happens in these companies.

And with that, I want to preface it that in some of the products, there are patents that I participate in. And other products, there are patents and technologies in development that I did not.

Q How much time would you say you spend as a proportion, working on any of these businesses, as opposed to your work as a professor or as an expert?

A I usually maintain a healthy 20 percent of

my engagement across, basically, third -- non-academic -- 20 percent and, you know, we have -- it really varies because, for example, over the summer, I am a nine-month faculty at the university. I'm allowed in the summer to work on other things, so I'm talking about my nine-month commitment to the university.

I usually dedicate around 20 percent of my time, an estimate, towards extra -- outside of academia activities.

Over the summer, that changes because there's more freedom to engage in external activities. I'm nine-month faculty. I don't have to work on specific projects, if I don't have to.

Q Got it.

Have any of the four companies that you work with actually shipped product to customers at this stage?

A Some of them have.

Q Which ones?

A I would say Quokka.

Q Other than Quokka, have any of the other

three companies shipped a product to customers at this stage?

A I don't believe so.

Q What is Quokka's product?

A It is a mobile security platform. It's available online on the web page.

And, again, for this specific company, I'm the chairman of the board. I have an involvement at this -- and I'm also the chief scientist, but I do not participate in product discussions because I focus primarily on the research and development of new ideas.

But some of them happen to become products but some others might not.

Q Do you know how much revenue Quokka has generated?

MR. ARGENTI: Objection. Scope.

BY THE WITNESS:

A I don't think this is part of, you know, my declaration for this specific proceedings here. And I would like to -- like, I mean, these numbers change every day.

BY MR. LUMISH:

Q But if you could answer my question, please.

A I do not have an exact knowledge about how much Quokka's -- what it's called, annual revenue. There are different numbers basically. I wouldn't know at this point, an exact number to answer your question.

And I want to be precise, so I wouldn't be able to give you a precise answer.

Q Do you have a range? For example, do you know if the company Quokka has generated more than $100,000 in revenue, more than a million dollars in revenue, anything like that?

MR. ARGENTI: Objection. Scope.

BY THE WITNESS:

A Again, I think that I'm not prepared to answer that question, and I don't have this number available in front of me to provide to you.

BY MR. LUMISH:

Q So you don't know?

A I cannot estimate because, as I said,

these things changes quarter to quarter. The company is changing, like, I mean, they have rough periods and downtime periods.

So I don't -- I cannot answer that question with an accuracy that I would like to be able to provide you, and I don't have any document in front of me that would allow me to give you a complete answer.

Q Just to be clear, I'm not asking you month-to-month revenue. I'm asking you total.

And you said you're chairman of the board, right?

A I am chairman of the board, but as I said, these things change every quarter. I haven't had a quarterly meeting to provide that information to you.

And also I don't have it in front of me. Like, I would have to rely on information from memory, which is, as we all know, not precise.

Q What was the last number you heard as the total revenues for Quokka?

MR. ARGENTI: Objection. Scope.

BY THE WITNESS:

A Again, I don't want to -- I can provide an answer, but I don't think it's part of what I should be providing today. And, again, that answer would be potentially imprecise, given the fact that I don't have in front of me the proceedings of the board to recite to you.

BY MR. LUMISH:

Q Not to pester you, sir, but are you refusing to answer my question?

A I'm not refusing to answer your question. I'm just saying that the answer to that question would automatically be imprecise.

And I want to make sure that if I give you an answer to any number, that that answer would be not construed as a precise answer to my -- to your question.

Q I'm just asking you the last number you heard. It may be imprecise. It may be whatever else.

But as chairman of the board of Quokka, what's the last number you heard as far as total

revenues for the company?

A I believe the total revenues for the company --

MR. ARGENTI: Objection. Scope.

BY THE WITNESS:

A I believe the total revenues for the company were, I think, more than $10 million for 2024. I don't have any numbers for 2025 yet.

BY MR. LUMISH:

Q Did the product for Quokka begin shipping in '24, 2024, or did it ship earlier than that?

A There are different products, so I need to understand which product you're referring to.

Q The computer security platform that you mentioned before.

A There are many different products that are pertaining -- I gave you a general description of what Quokka is doing. There are different products in that description, so different products have been shipping at different times.

Q When did Quokka first ship any products?

A I don't remember of time, to give you an

exact date. I would say a few years ago.

Q Few, as in two or three or five or seven? What's your best estimate?

A An estimate would be, I would say more than maybe six to seven years ago, even more after -- the company has shifted its products, so some of the products have evolved over the period of time.

So, again, my answer is not going to be accurate because I don't know which product you are talking about. If you're talking in general about products, which is not necessarily tied to what I just told you before, I mean, I believe it's been more than ten years that Quokka, as a company, has been in existence.

Prior to that, it was Kryptowire LLC, but for years, for Quokka specifically, Quokka, Inc., it has been four years since we started shipping products, I would say.

Q Let me shift gears back to something you said a moment ago.

Before you worked on this case, this IPR

or this dispute, you had no prior knowledge of Orca; is that true?

A I had no prior knowledge of Orca as a company or even products. Yes, that's true.

Q Did you have prior knowledge of Wiz?

A Not -- no.

Q So is it fair to say, sir, you're not following or had not been before this -- your work on this case, following the developments in the cloud security space that Orca and Wiz compete in?

A While I follow academic research on the space very closely, many times these developments on the academic space and research are divorced of what is happening on the commercial space.

And different companies emerge very quickly, and they have different product offerings. I just didn't happen to have -- to run across Wiz or Orca as part of my day-to-day research at the university or even involvement with -- there are many companies that offer products for cloud security. I didn't have any dealings with Wiz or Orca prior to my engagement.

I was aware of the news there were articles about both of them, but I never delved into their dispute or even the fact that they had competing products.

Similarly, to someone basically browsing, of course, I see news, but I have never worked with either Wiz or Orca or used their products before my engagement in this case.

Q You were not familiar, I take it, then with Avi Shua, S-h-u-a, the inventor on the three Orca patents in this deposition?

A I don't recall if I met him or talked to him or run across him.

Q How about the founders or employees at Wiz, did you know any of them before your work on this case or know of any of them?

A I don't even know them today. Even if you mentioned them I don't know.

Q Can we agree, then, Dr. Stavrou, that you are not an expert in the market area, the business issues related to Orca and Wiz?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A That's actually not correct. I've done a lot of work on cloud security myself, and there have been -- I've been following cybersecurity-related developments for cloud. It's just that I have not run into the products from these two companies.

There are many, many companies that perform cloud security. I can name a few, but I don't want to -- I have never -- it's just that I've never used their product or rely on their product or know their founders. You know, I've seen the companies on the news, but it's just, I have not used their product.

BY MR. LUMISH:

Q You've seen the companies in the news now, but when you were working -- before you worked on this case, you hadn't seen their names in the news, right?

A I have not seen their names in the news in the sense that I -- I have not used their products. So I have not -- you know, I have used

other products for cloud security. I just haven't used specifically Wiz and Orca. There are many, many companies that specialize in cloud security, so I just didn't have the need to use these two products.

Q My question is different, though.

Before you worked on this case, that time period, you had not seen Orca or Wiz in the news, right?

A I might have seen articles in the news about them, but not about the dispute specifically that you asked.

Q I didn't ask about the dispute.

A Yeah. I mean, I cannot tell you with certainty that I might or not have run into an article for one of the companies because I read a lot of articles a long time ago, but I've never used the product or met their founders or been involved in their technology.

Q Okay. I'm not asking about using the products or knowing the founders. So please listen carefully to my question because I think

your answer has changed, and I want to make sure we know what your testimony is.

It's true, isn't it, sir, what you said before, that before your work on this dispute, you were not familiar with and had not heard of Orca or Wiz?

A Let me be very clear about my testimony. I've never used their products before or during these proceedings. I have never -- I might have run across articles on the news about the two companies, but not necessarily their products. And I have not engaged in any way with the founders or personnel or people that you mentioned, like, you know, the people in the patent.

I am very familiar with cloud security technologies because I use them as part of my companies and the work that I do. I just didn't have an engagement or involvement with these two products -- with products from these two companies.

Q Okay. I'm not asking what you might have

done, sir. I'm asking your memory.

You don't have any recollection of having heard of Orca or Wiz prior to this dispute?

And if you could just answer that specific question, please.

A As I repeated previously in my answer, I might have run into articles about the two companies in the news. So in that sense, I might have heard --

Q Doctor, I'm not asking what you might have done. My question was really clear. I'm not asking what might have happened. So I'm going to ask you again. I'm not asking what you might have done.

I'm asking if you have any recollection specifically of having heard of Orca or Wiz before your work on this case?

MR. ARGENTI: Objection. Form. And please don't cut the witness off in his answers.

BY THE WITNESS:

A I repeatedly said that I have not used their products, but I might have run into articles

about them in the news about the companies because they are part of a bigger ecosystem, and there are many, many companies in that ecosystem. It's not that I'm not familiar with the cloud security technologies. It's just that I have not used or run into -- I mean, the products that these two companies create, I have not used as part of my everyday work now or before, but I might have seen articles about these companies in the news.

It's not that I have never heard of them before, but I thought that your question was more if I have been more hands-on involved with their products, and the answer to that question is no.

BY MR. LUMISH:

Q When did you first hear of Orca?

A Again, I will have to rely on memory because that has been -- it has been, you know, one year now that I work on this case. So you're asking me to think about when I first hear of Orca that's going, basically, more than a few years ago.

So I would venture to say maybe I've heard

about them. Again, that's an estimate, and it's a recollection of potentially an article that I read, maybe three or four years ago.

Q So when you said before and testified under oath that you had no prior knowledge of Orca as a company before your work on this case, that was false? That wasn't true?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A No. No. What I meant was I have never -- I meant that I have never had substantial involvement with the companies, meaning that beyond reading them on the news that everyone can read, I've never used their product, met their founders or have any involvement beyond what an ordinary person would have with this specific -- both specific companies.

I mean, everybody can read articles about anything online. I am very familiar with other products. It's just that I'm not familiar with Orca and Wiz, their products or have not used them.

BY MR. LUMISH:

Q I'm going to try again.

Was it false, sir, when you testified earlier that you had no prior knowledge of Orca as a company before your work on this case?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I will repeat my answer. As a company, I meant -- what I meant to say was I not aware of Orca as part of the products that I use or as a part of, you know, my everyday interactions with tools that I use in my work.

I might have seen articles about Orca in the news and the type of -- you know -- I mean, as a company, but I still -- I did not have any insights into the type of products, specific products that they create or the specs, manuals. I've never used those products.

BY MR. LUMISH:

Q So if your new testimony, sir, is that you first heard about Orca several years ago, which is what I think you said three answers back, how did

you first learn about them several years ago?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Again, I want to be clear. As I read articles online about developments in products related to cybersecurity, I run across hundreds of companies, some of them survive, some of them don't survive. Some of them, they have products that are interesting to me. Some of them may have products that are not interesting to me.

I now recall that I might have run into an article or two about Orca, but, again, this is something that happens in the process of me reading the news online.

But I've never used their products or interacted with their patent founders, patent owners or any of the personnel -- let me rephrase that -- any of the people that you mentioned, because I don't know the person that they have -- yes, sir.

BY MR. LUMISH:

Q Go ahead. I don't want to interrupt you.

Your counsel is right. I shouldn't interrupt you.

A I'm done. Thank you.

Q So you said you might have run into an article or two about Orca. I want to know if you did run into an article or two about Orca before this --

A I cannot recall specific only about Orca or -- as part of, you know, a Gartner report that I looked -- that he had the Magic Quadrant that he had many companies in for cloud security.

I mean, I read a lot of information, and I don't recall every single thing that I read a few years back. But I believe that, now that you are mentioning it, that I might have run across Orca as part of, you know, my reading on the subject of cloud security, like a while back.

But, again, my intention when I said that I have not interacted with Orca as a company or heard about Orca as a company, I meant it in the form of I've never used their products, and I've never talked to any -- anyone about Orca about their products or familiarized myself about the

products because they were not something that I was -- it was interesting to me to use as part of my everyday work at that time.

Q You've said that many times. I'm asking different questions, though. You keep answering about those things that I'm not asking.

Are you sure, are you testifying under oath, Dr. Stavrou, that you did, in fact, read about Orca in an article or two before your work on this lawsuit, yes or no?

A As I said, the mention of name Orca might have come across to my readings prior to meeting this -- prior to these proceedings and my engagement in this case, but it would have been part of a probably bigger set of articles and comparisons across different companies performing similar work.

I did not specifically recall. I cannot recall reading an article specifically about Orca's products in the context of my reading, but I read a lot of summarized documents that have, you know, developments across different companies

for different products.

And there are many, many companies and many products, so in my review of, you know, technology advances for cloud security, I might have run across the name of Orca as a company.

But I have not read an article that pertains specifically only to Orca. It was probably part of a summarized version of findings for cloud security.

MR. LUMISH: I'm going to object to your answers as not responding to my questions. You injected again the word "might" repeatedly and "maybe" and "probably."

None of those things I asked about, but I'm going to move on because I only have so much time.

BY MR. LUMISH:

Q When did you first hear of Wiz?

A I'll report similarly -- I've never used -- I cannot recall exactly the time that I have heard about Wiz.

It might have been through articles that,

again, are published as part of articles that I read every day. I didn't pay attention to the specifics of the company because it was not something that I used in my day-to-day work as an academic or as part of the companies that I work with.

And while I might have seen articles, I don't recall a specific time or date. And, again, probably that information was part of articles that I read that compare different technology trends.

Q I'm not asking what might have happened, Doctor. So please don't tell me what you might have done.

When can you tell me with certainty you first heard of Wiz?

A I believe definitely as part of this case when I was engaged in this case. I cannot recall with certainty. You're asking me to recall basically more than a year ago, which is my engagement with this case, if I have heard of Wiz prior to that.

I cannot recall an exact date. I believe that I have seen articles about Wiz, but I cannot recall a specific date because it's just a long time ago.

Q You're not familiar with the press and industry discussions around any changes to the technology that were contributed by Orca and Wiz from the conventional technology that had been used before them, are you?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I mean, I cannot answer that question. You have to be more specific. I don't exactly understand what you're talking about. So you need to be more specific for me to understand.

BY MR. LUMISH:

Q You don't understand my question?

A I do not understand. Your question is too broad.

Q Well, I mean it to be broad.

I mean, before your work on this case, Doctor, you were not following or familiar with

the discussion in the industry around any contributions or changes to the technology that was conventionally being used, brought in by Orca or Wiz.

Is that true or false?

MR. ARGENTI: Objection. Form, foundation.

BY THE WITNESS:

A I cannot answer the question because both of these companies have multiple products. Each of these products have performed different advances, potential advances in technology.

I need to understand better about which technologies you are talking about. I cannot opine on something that you are not precise about.

BY MR. LUMISH:

Q Are you refusing to answer my question as I phrased it?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I would like to understand more information about which products and which

developments you are referring to.
BY MR. LUMISH:
Q Any -- any --
A I cannot provide --
Q Let me ask it again, Doctor, because I mean my question to be very broad, and I'm not going to narrow it. I mean it to be very broad.
Before you worked on this case, you were not personally following the discussion in the industry, whether that's at trade shows or in the press or in press releases or otherwise, around how Orca or Wiz or both changed the technology that was being used away from prior technologies?
Is that true or false?
MR. ARGENTI: Objection. Form, foundation.
BY THE WITNESS:
A I cannot answer the question the way it's formed because I need to understand exactly what you're referring to.
There are a lot of products and a lot of technologies that, again, are developed. Trade

shows are not -- as an academic and as a person who does research and development, I follow commercial developments, but I'm not participating in trade shows or the discussions necessarily the those trade shows pertain to.

So without actually having an understanding of exactly what you're referring to, I won't be able to answer.

BY MR. LUMISH:

Q How did you come to be involved in this case?

A I don't understand your question again. Like, I mean, I'm an expert in cybersecurity and virtualization and cloud security, and I have many applications.

I have a lot of background research that is relevant to the specific case. I was contacted -- I don't remember the exact order of events because it's, again, more than one year ago.

So anything that -- I preface that anything I say is based on memory, which is at

best, a recollection. I think I was contacted by the counsels to participate in this case as an expert witness.

Q That's all I asked, was how you came to be involved.

So your memory is that you were contacted by counsel; is that right?

A Yeah. I don't remember exactly who or what was the process, but, yes, that's the question -- that was the process.

Q Do you work with any sort of expert placement firm?

A Occasionally, I get contacted by expert placement firms. I don't remember if this engagement was through one of those. It might have been or it might not have been. But, I don't recall for the specific case, if it was that or not.

Q You told me a few times you couldn't answer my questions because of memory.

Do you have any issues with your memory?

A I don't have any problem with my memory,

sir.

Q What's the rate you're charging in this case?

A I believe it's part of my declaration. I need to -- I can check my declaration.

Q In the declaration it says you are charging your normal rate. What is that rate?

A I can provide an answer to that.

I believe it's $450 per hour.

Q And do you have any other sort of financial relationship with Wiz or Wiz's founders or employees?

A In what sense, sir? What are you referring to?

Q The broadest possible sense.

A As far as I'm concerned, I don't have any. And I repeat that. I do not have -- I do not know anybody at Wiz.

No, I did not -- I do not have any financial engagement with Wiz outside of my engagement with the counsel for this specific case.

Q Do you own any stock, any Wiz stock?

A Personally, I do not own any Wiz stock, but of course, I have 401(k) that is not controlled by me, through the university. I don't know if my -- might have Orca stocks. I do not control what stocks go there.

I have no personal investment in either Orca or Wiz that I know of.

Q Has Wiz provided any sort of grant money or the like for your work at the university?

A No.

Q Have you asked it to?

A No.

Q Are you in any sort of discussions with Wiz or any Wiz employees related to any other financial relationships?

A No.

Q You had asked to get hard copies of your documents. Why don't we go ahead and take a break now and let you can gather those. And we can just make it a short break anyway and give you a chance to just catch your breath.

But if you would, please, pull those materials out while we take this break, I'd appreciate it.

If you want them, otherwise, you can use the electronic copies, but I'm going to start referring to --

A No, let's see if I can get them also in terms of paper. Sometimes it's better to look at them.

MR. LUMISH: How long a break would you like to take, Matt?

MR. AGRGENTI: Five minutes, ten minutes?

Dr. Stavrou, what sounds good to you?

THE WITNESS: Let's do ten minutes just to make sure that I have everything.

MR. LUMISH: Sounds good. I'll see you back in ten. Thank you.

MR. ARGENTI: Thank you.

(A recess was had.)

BY MR. LUMISH:

Q Dr. Stavrou, during the break, were you able to get the hard copy exhibits that you

requested?

A Yes, sir.

Q I want to ask you about your declarations. There are three of them; one for each of the three IPR proceedings, and each is marked as Exhibit 1002 in those proceedings.

Do you have those three in front of you?

A I do.

Q And can we agree there's a lot of overlap between the three of them? There are some differences, of course, as the patent claims are a little different, but there's overlap. A lot of the text is just duplicated from one declaration to the next?

A There is -- there is some duplication, that's correct.

Q Can you tell me what the process was for drafting these declarations, please?

Again, I don't want any of the substantive discussions you had with any counsel. I just want to know generally what the process was.

A I worked with counsel. I maintained full

control of the authorship of the declarations. There were some points that we had discussed with counsel, and that's it, and -- and that's it.

I identified the exhibits as part of my work in this case. I reviewed all of the exhibits, and I stand by every sentence in those declarations.

Q You said -- withdraw. Sorry.

You said you had reviewed the declarations to prepare for your deposition today?

A That is correct.

Q Did you see anything that you thought was a mistake or that needed to be corrected when you did that?

A There were a couple of typos that I identified in the -- I don't have the marked copies in front of me to point you. There were a couple of typos that we inadvertently made it through, but I think other than that, everything else looked okay to me.

Q Okay. You didn't see any substantive errors where you read it and said, that's not

really what I meant or I left an important word out and I need to fix that?

A Again, I saw a couple of typos. I don't know how -- I don't believe that these typos were substantive in my declarations.

Q How much time would you say it took to prepare the three declarations, 1002-31, 32 and '685?

A Again, I would not be able to give you a precise number because this happens over the, I would say, better part of a year. There were a lot of times where I worked more and some other times, you know, I worked less because I was on vacation or we were identifying -- I was identifying some specific exhibits.

But as I said, I mean, I would say I worked on this roughly over the past year on and off at different times.

Q Okay. So you can't give me a range of time with a reasonable estimate for how long it took for any of or all three of the declarations that we've marked as exhibits in this case?

A As you mentioned at the beginning, there's a lot of textual overlap, so there is textual overlap. And, again, because of that and because it's happened over a longer period of time, whatever answer I would provide would not be accurate, and I don't want to provide an estimate. I like to be precise.

Q In all three of the declarations, you issued opinions that the three Orca patents, the '031, '032 and '685 are invalid, right?

A Again, the patents have claims, and I opined on each of the claims, and this is the -- everything is in my declaration. If you point me to a specific point or a specific claim, I will be able to tell you exactly what I opined on that specific claim.

Q So you can't tell me whether you issued opinions that all of the claims of those three patents are invalid?

A I have to check each one of the claims, and I can do that if you give me time. But I believe that each of the claims, I opined, I

believe, in many of these claims -- again, there are three patents and all of them have claims. I would like to be precise. If you want me to go through my declaration to check what I opined for each one of the claims, I would be happy to do that, so...

Q Do you remember whether, Doctor, you opined in your three declarations only that Orca's patent claims are invalid due to obviousness?

A I do not. If you point me to a specific claim, I will be able to answer your question precisely.

Q So you don't have any memory whether your opinions were that the claims were invalid because of obviousness, as opposed to anticipation, right?

A Again, I would like you to be precise in your question. So I believe that some -- some claims might have been due to obviousness, as I recall, but I want to be precise. So if you give me exactly which claim are you talking about, we will be able to have a discussion about that specific claim and go down into my opinion about

that specific claim.

Q So you don't know if you issued any opinions related to these three patents that any of the claims were anticipated, as opposed to obvious?

A I don't want to rely on memory. I would prefer if you would point me to a specific claim.

Q I would prefer if you answer my question, please.

A I cannot answer your question because I need to understand which patent are you talking about and which specific claim so I can -- I can point to my declaration so we can have a discussion and answer your question.

So I mean, if you give me time, I can go through every single of the claims and identify and answer your question.

Would you like me to do that?

Q Are you finished?

A I am asking, would you like me to go through the declaration and separate claims about the different opinions?

Q And you can't testify right now without rereading your reports, even though you prepared and read them in anticipation of your deposition, whether you issued any opinions that any claim of the '031, '032 or '685 patent was invalid due to anticipation, as opposed to obviousness, right?

A Again, I would have to check. I want to be precise. And because there are many, many claims in the three patents, I don't want to answer your question broadly because it might be incorrect.

I'm happy to -- if you have a specific claim that you would like to discuss -- because this is a very broad question, I would say tens of claims, dependent claims, three patents -- across three patents.

So I would like you -- in order for me to answer, I would like you to give me either time to go through everything or a specific claim that I can take a look and answer your question.

Q Okay. I take that as you won't answer my question better than that. I'm entitled to ask

you broad questions, Doctor.

A And I'm not stopping you.

Q Okay. Did you review the institution decisions from the Patent Trial and Appeal Board for any of the IPRs we're discussing today, the '031, '032 or the '685?

A I was made available of them. I believe I browsed through a couple of them, but I don't have them in front of me. And, again, I don't know if I checked for all three patents, maybe I checked for some of the patents. But, I mean, if you have an exhibit that you want me to look, I'm happy to go through it.

Q I would just like you to answer my question.

A I believe I saw some of the --

MR. ARGENTI: Objection. Form.

BY MR. LUMISH:

Q Let me try it again. And I think you partially answered it. It sounded like from your answer, you said you might have browsed two of the three institution decisions from the PTAB related

to the three patents we're discussing today.

Is that true or false?

A I believe that's true.

Q And do you know which two of the three?

A Again, I don't recall exactly because there is a lot of material in this case, as I said, a lot of patents, declarations and a lot of exhibits. I believe that I checked for '031 and '032. I'm not certain if I did also for the '685. I might have, but I don't recall for sure if I had.

Q And when you did that, did you agree with all the reasoning from the PTAB or did you see anything you disagreed with?

A I was -- when I read it, I didn't make an opinion out of it. I read it as part of, you know, my background reading, but it didn't -- I didn't spend time thinking about that specific question that you're asking, so I cannot opine on it. Like, I would need to spend more time thinking about what you just said.

Q You don't recall browsing, as you put it,

either of the two -- if you could please let me get the question out.

A I apologize. Go ahead.

Q You don't recall browsing, as you put it, either of the two institution decisions that you mentioned and thinking, I think the PTAB got something wrong here in any of its reasoning?

A Again, since I was just browsing them and I was not spending time analyzing them and forming an opinion about them, I would have to answer that I cannot -- I cannot give you a complete answer to your question because I didn't spend time, you know, forming an opinion about the findings of the PTAB.

While I browsed the findings, I was not asked to form an opinion about the PTAB findings. And also I didn't have enough time, and I didn't spend enough time performing that assessment.

Q If you can look at your '031 declaration, please, so it's Exhibit 1002 for the '031 proceeding.

And I would ask you to -- one second,

please. Look at whatever you'd like, but I'm going to direct you, if I could, to Page 93.

A Yes.

Q You see at the top, it says, has a header:

"XII. Ground 1: Claims 1, 3-9, and 11-16 were obvious over Veselov and Price"?

A That is correct.

Q Can we agree, Doctor, that for Ground 1, you're relying for obviousness based on a combination of Veselov and Price references to reach conclusions that Claims 1, 3 through 9 and 11 through 16 are invalid?

A That is correct.

Q If you can turn to Page 161, please. You'll see about a third of the way down, the header XIII, Ground 2: Claims 2 and 10 were obvious over Veselov, Price, and Hufsmith.

Do you see that?

A That's correct.

Q Can we agree, Doctor, that for Ground 2, you rely upon an obviousness theory, combining Veselov, Price and Hufsmith to conclude that

Claims 2 and 10 were obvious or invalid.

A Where is the combination of Veselov, Price and Hufsmith to render Claims 2 and 10 obvious?

Q Well, if you turn to Page 171, please.

A Yes.

Q Towards the bottom of the page, you have a header XIV, Ground 3: Claims 6 and 14 were obvious over Veselov, Price, Hufsmith and Huseinovic.

Do you agree, sir, that for Ground 3, your opinion was -- and, again, one based on obviousness, combining those four references together to find Claims 6 and 14 invalid?

A That is correct, yes.

Q Nowhere in this declaration do you opine that any claim of the '031 patent is invalid due to anticipation, true?

A It appears that for the '031 patent for Grounds 1, 2 and 3, as you cited, I do not -- I use the obviousness instead of anticipation, as you mentioned.

Q You said "it appears." Are you leaving

yourself open to tell me that you opined on anticipation somewhere else, other than where I pointed you?

A No, sir. I said that this is exactly what it looks like.

Q How did you come up with the Veselov, Price, Hufsmith and Huseinovic references that you used in this declaration for the '031 proceeding?

MR. ARGENTI: Objection. Form.

And I'll caution the witness not to discuss communications with counsel during the preparation of his opinions.

BY THE WITNESS:

A Can you please repeat the question?

MR. LUMISH: I'm not trying to sneak this by you, Matt.

BY MR. LUMISH:

Q I do want to know whether you found the art yourself, if you got it from counsel or if it came into your possession in some other way.

I don't think that would be privileged.

A Can you please repeat the question?

Q The question is: How did you obtain the prior art references that you used in this dispute? Did you get them yourself? Did you get them from counsel? Or did you get them from some other source?

A Many of the exhibits in the prior art were identified personally by me. Others were identified after discussing with counsel. As I said, many of these were identified personally by me.

Especially, if you look at the extensive background section of my declaration, there are a lot of exhibits there that were identified by me.

Some of the background specifics may have been brought up by the counsel, but I reviewed everything personally before drafting this declaration, and I maintained editorial control of the declaration itself, so I'm pretty confident with all of the exhibits and prior art used.

Q I'm just asking where they came from, Doctor.

So did you find the Veselov reference

yourself or did you get that from somebody else?

A I don't recall specifically for Veselov, if it was brought to my attention by someone else or I identified it.

I did do a lot of digging to identify prior art. I believe that Veselov was one of the items that I have also independently identified. I just don't remember if it was -- because the process was not done concurrently, as you probably imagine, that I have identified some prior work.

The counsel has also potentially identified some prior work, and then we compared -- we discussed this.

But I believe that Veselov was a part of -- I have independently identified Veselov.

Q You think or you know?

A I mean, as I said, this entire declaration was developed through an entire year and some of the timelines. And because of the material, there are a lot of material, I want to preface my answer that it relies on memory.

It's again, potentially more than a year

or around a year, so it might not necessarily be 100 percent accurate, but I believe in my response to you that I have identified Veselov as part of my prior art search.

Q How did you come across the Price reference? Did you find that yourself or did you get it from counsel or somebody else?

A Let me take a look at the Price reference.

Q Sure. For the record, it's Exhibit 1048.

A I don't recall for that specific reference who found it, and I don't want to give you an answer I'm not comfortable with.

Q The answer is you don't recall?

A I don't recall.

Q How about the Hufsmith reference, Exhibit 1078, did you find that yourself or did you get that from counsel or somebody else?

A Give me one second to identify the Hufsmith. I'm sorry. There are so many exhibits. Give me one second.

I believe I brought up the Hufsmith to the counsel after doing a prior art search, but,

again, my answers are all based on memory.

Q How about the Huseinovic reference, Exhibit 1049, did you find that yourself or did you get it from counsel or somebody else?

A Huseinovic I found myself. I pointed it to the counsel. I remember that one.

Q Exhibit 1070, the Hutchins reference, did you find that yourself or did you get it from counsel or somebody else?

A Again, I'm relying on memory here. I believe that was one of the ones that I identified.

Q Can you go to the '032 declaration, please, so Exhibit 1002 from the '032 proceeding. And turn to Page 87 for me, please.

You'll see at the top of that page the header, it says: "XII. Ground 1: Claims 1-11 and 13-25 were obvious over Veselov and Hufsmith."

Can we agree, Doctor, that for Ground 1 your opinion was one of obviousness based on the combination of Veselov and Hufsmith, to reach the opinion that Claims 1 through 11 and 13 through 25

were invalid?

A That appears to be correct.

Q If you turn to Page 193, a little more than halfway down the page, you'll see a header that says: "XIII, Ground 2: Claim 12 was obvious over Veselov, Hufsmith, and Hutchins."

Can we agree, Doctor, that your opinions in Ground 2 were, again, of obviousness, based on the combination of Veselov, Hufsmith and Hutchins, to opine that Claim 12 was invalid?

A That is correct.

Q Can we agree, Doctor, nowhere in this declaration for the '032 IPR, do you issue an opinion that any claim was invalid due to anticipation?

A That is correct.

Q If you can find the '685 declaration for me, please, so Exhibit 1002, in the '685 proceeding.

A Okay.

Q And I'll ask you to turn to Page 106, please. Hang on for a second, please. I had the

wrong page on the notes. Page 97.

Page 97, you have a header about a third of the way down that says: XII. Ground 1: Claims 1-22 were obvious over Veselov and Hufsmith."

And we agree, Doctor, that Ground 1, your opinion was, again, one of obviousness based on the combination of the Veselov and Hufsmith references, to opine that all of the claims of the '685 were invalid?

A That is correct.

Q If you turn to Page 183, please. You'll see a header there a little more than halfway down that says: XIII. Ground 2: Claims 1-22 were obvious over Veselov, Hufsmith, and Chari."

Do you see that?

A Yes.

Q I didn't put the Chari reference in the system, but do you recall whether the Chari reference was one that you found yourself or was provided to you by counsel or somebody else?

A I don't recall about this specific one,

and I don't have it in front of me, so I would have to take a look. But I believe that this -- I don't recall about the source of this because I see the title here, I see the name, but I don't have the exhibit in front of me.

Q We'll find it and get it in the system. Do you have it in the hard copy materials available to you?

A I'd have to check.

Which exhibit is that?

Q That is an excellent question. It is -- I apologize for not putting it in there. I meant to and I just missed it. Chari. I think I have it here. Hang on one second.

MR. ARGENTI: It looks like it's 1056.

MR. LUMISH: I'm not --

BY MR. LUMISH:

Q I'll take your counsel's word for it. I actually don't have it in my folder, which is why it didn't make it into the system, but we've confirmed, also, it's 1056.

So we can -- at a break, Doctor, we can

find that one for you as well, and I can ask you again if it changes your memory as to whether you found it yourself.

Back to your declaration, so Exhibit 1002 from the '685, we were on Page 183. Can we agree that your opinion in Ground 2 is, again, one of obviousness based on the combination of Veselov, Hufsmith and Chari, to opine that the claims of the '685 patent were invalid?

A That is correct.

Q If you turn to Page 194, a little more than halfway down, you'll see a Header 14, Ground 3, Claims 2 through 3, and 14 through 15 were obvious over Veselov, Hufsmith, Chari, Price and Huseinovic.

Can we agree, sir, that your opinions for Ground 3 were, again, of obviousness for Claims 2 through 3 and 14 through 15, based on the combination of the five references I read?

A That is correct.

Q And nowhere in your declaration for the '685 patent do you issue any opinions that any

claims were invalid due to anticipation, right?

A Yes.

Q And you mentioned that there were other references that you point to in the Background section. You actually point to a number of references throughout your analysis beyond the prior art that I specifically read out to you in the last few questions, right?

A Yes. This was used for background.

Q You say it's just for background, but in many instances, you're using those references to identify things that you say were known to people of ordinary skill in the art; is that right?

A In some cases, that's correct, yes.

Q In order to map them to limitations in Orca's claims, right?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Again, it will depend on the context of the specific reference in the specific claim, but, again, I don't think that I used the references to establish what would be known at that time to a

person of ordinary skill in the art.

BY MR. LUMISH:

Q Right. So while there is a number of references mentioned, you don't have any grounds on which you issue opinions of invalidity based on any references other than Veselov, Hufsmith, Chari, Price and Hutchins and Huseinovic in various combinations; is that true?

A I don't know if all the patents -- all of the exhibits were listed accurately, but if they are for the three patents, for my three declarations, if they cover all my ground references, then I would agree with you.

But, again, I have to, again, go through the list and make sure that we don't miss any exhibits that I list in my declarations just to be on the same page.

Q I'm going to ask you to bring up the '031 patent, Exhibit 1001 from the '031 proceeding.

A Would you like to take a break now to find Chari or should we wait until later? I'm okay both ways. I just want to make sure that we're on

the same page.

Q I don't need to take a break. If you would like one, I'm perfectly fine taking one any time you need one.

A I just don't have Chari in front of me. I just want to remind you of that.

Q I'm not about to ask about Chari. So that's up to you.

A No, no. We can continue.

Q All right. Do you have the '031 in front of you, Doctor?

A I do.

Q And how many times would you say you've read it?

A Again, I cannot give you a precise answer because I've read this many different times and in different stages of completion, but, you know, I would say I've read it at least a few times over the last few weeks.

Q Have you ever read it cover to cover?

A I mean, I didn't go all the way through the list of exhibits to check the list of

exhibits, but I've read what I believe is the substantive -- you know, the substance of the declaration. Also, I didn't check the table of contents.

Q We're talking about different documents. I'm asking about the '031 patent.

A Oh, patent. I'm sorry.

Q Exhibit 1001 from the '031 proceeding.

A I apologize. I'm looking at my declaration.

Q Okay. Can you find the '031 patent, please?

A Yes, yes. I'm apologizing for that. Different document.

Q That's all right. No problem at all.

Do you have that, sir?

A I am there, yes.

Q Just for the record, we are talking about US Patent 11663031, and, again, it's Exhibit 1001 from the '031 proceeding.

How many times have you read -- withdrawn.

Have you ever read the '031 patent cover

to cover?

A I believe I have, yes.

Q And would you say you've studied the '031 patent?

A Define studied. I've read it.

Q Read it. You know, studied it, read it really carefully in order to analyze it.

I'm sorry, I didn't hear you if you answered.

A I'm sorry. Was I cut off?

Q I didn't hear your answer.

A I did study the '031 patent.

Q How many times would you say you've read it?

A Again, I've read it many times over the past, I would say, few weeks and before that, as I was preparing my declaration. But in many cases, I've read portions of it or I focused on specific portions. I cannot give you an exact answer about how many times I read it cover to cover.

I mean, I've read it at least once, but I cannot give you a precise answer as to how many

actual times I've read it, because at different times, I've read different portions of it, and I studied different aspects of it.

Q What's your best estimate of the number of times you've read the '031 patent?

A Again, it would be based on memory and the fact that I will have to speak especially this. I would say at least three or four times, but, again, portions of it, I've read more than this. Some of the initial preamble information was not -- as I said, some portions of it were more relevant to what I was trying to understand than others.

Q Had you ever heard of the '031 patent before your work on this dispute, this case?

A I've never looked at the '031 patent before I worked on this dispute.

Q You'll see in the abstract of the '031 patent on the cover of Exhibit 1001-31, references to a virtual disk. There's two of them; one on the third line and one on the sixth line.

Do you see that?

A I do.
Q Are you familiar with virtual disks?
A In what aspect of virtual disks are you referring to? I understand what a virtual disk is.
Q What do you understand a virtual disk to be?
A I would read it as plain and ordinary meaning of the word virtual disk.
Q You said you know what it is. I'm asking you what it is, what does it mean?
A Again, different authors use same -- same concept and descriptions for different things.
Are you asking me in the context of the '031 patent specifically?
Q Okay. I'll ask you that.
What is a virtual disk in the context of the '031 patent?
A Based on what I read here, it's part of the virtual cloud assets, a virtual disk, also a protected virtual cloud, so I read it as a virtual disk. I don't think that it has any special

meaning in this specific context. It is what it talks about, a virtual disk.

Q When you say "it is what it talks about," I'm asking you -- you're the expert. I'm asking you what you understand a virtual disk to be, not what the words say.

What is it in the context of this patent?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I'm reading it as it is in the patent, and I understand it as a virtual disk.

BY MR. LUMISH:

Q I'm asking you to explain it to me, not whether you understand it.

A I mean, it appears to be a disk that is virtual.

Q What do you mean by "a disk"?

A Again, the definition of a disk is pretty -- it's well defined in the literature, what's a disk. I can explain technically what a disk can be. I can give you examples of it. Would you like me to go through examples? Again,

a virtual disk is exactly what it reads, a virtual disk.

Q I want to understand what that means to you, Doctor. And you said it's a disk that's virtual. What's a disk? And my next question is going to be what's virtual?

A I mean, again, a disk would be something that stores information. I mean, again, there are different ways of defining how a disk can be. I mean, in my declarations, I have -- I don't know if my declaration -- where in my declaration did you ask me -- did I define it in my declaration? I don't believe -- I mean, are you asking me what is a disk? Because to me, it has a plain and ordinary meaning.

So do you want me to go through examples of what a disk is? Can you clarify your question?

Q I just want you to answer my question.

A I'm answering your question.

Q It's not the best answer you can give me, and I want a fair and honest answer. What's a virtual disk in the context of the '031 patent?

MR. ARGENTI: Objection. Form.
BY THE WITNESS:
A Again, I read it as a virtual disk. I understand the concept of a virtual disk inside a virtual cloud asset, in general. I don't understand your question.
Again, it's a disk that is virtual. I think I gave you an answer. And, again, I don't want to go down -- I can give you some examples that I have a higher level, if you want to, but, again, I read it as the plain and ordinary meaning of the word.
BY MR. LUMISH:
Q When you say "it's a disk that's virtual," what do you mean by "disk" and what do you mean by "virtual"?
A Again -- give me just one second. Let me read a little bit more about the context here.
To the best of my understanding, again, based on what the patent is talking about, it's a disk that, you know, it's a form of storage. Typically, I would understand it to be a form of

storage that would be available. A virtual disk would be available as a resource to virtual cloud assets.

I would interpret it as a plain and ordinary meaning of the word virtual disk.

Q What does "virtual" mean in your answer?

A Again, virtual here means -- and, again, that's what -- I would say typical -- a typical -- potentially typical, but not exclusive example of a virtual disk would be like storage that is accessible through a virtual cloud system or a virtual cloud -- as part of a virtual cloud asset, as also recited in the patent.

I think that the virtual disk is a form of -- it refers to basically the cloud -- it can be a virtual disk drive, for example.

Some other people refer to it also as -- I mean, there are different things that a virtual disk can represent. And, again, I don't want to be exclusive about what I am telling you, but I would read it as the plain and ordinary meaning of a virtual disk.

Q My question is: What does virtual mean in your answer?

A Virtual means, in this context, it's same as virtual cloud asset. It's part of the cloud environment. So virtual disk can be part of the cloud environment. In this context, I think it means that the disk is part of a cloud environment.

Q Are you familiar with something called a "virtual machine"?

A Yes.

Q What's a virtual machine?

A Again, a virtual machine, I would read it as a plain and ordinary meaning. I'm not entirely sure what you're asking me to interpret because it has a definition in the literature.

Q What is it? What is the definition?

I want to know what it means, Doctor.

A A virtual machine -- a virtual machine, I mean -- again, a virtual machine represents exactly what it says, like, a machine that is instantiated using resources, software resources.

So basically, in some instantiations of a virtual machine, a virtual machine can take the place of a physical machine because it encapsulates all the -- it encapsulates services that are provided by physical machine.

Sometimes a virtual machine can be -- again, it depends on the context. And, again, I'm giving you some potential examples of a virtual machine.

But usually, a virtual machine allows you to instantiate a computing -- I would say computing device or types of computing devices, maybe more than one, one or more than one within a physical machine.

But, again, it depends on the context, and I don't want to give you an answer that would be construed as generalized, but, I mean, virtual machines can be -- they can encapsulate computer resources, including, for example, memory disk, other things, devices in lieu of physical disks in some cases.

Q You're talking about disks. I asked you

about virtual machine.

A Virtual machine, I don't want you to -- if I may answer.

Q Let me ask you a different question one more time.

What's the difference between a virtual machine and a virtual disk?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A A virtual machine might have virtual disks as part of resources that the virtual machine is utilizing.

BY MR. LUMISH:

Q Some virtual machines won't have virtual disks, some will; is that true?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I would say typically virtual machines have virtual disks but not necessarily always.

BY MR. LUMISH:

Q Can we agree that virtual machine is not synonymous with virtual disk?

A A virtual machine is not synonymous with virtual disk. Typically, I would not agree that's the case.

Q Can you turn to Figure 1B please of the '031 patent, Exhibit 1001 in the 32 proceeding.

A You're talking about the '031 patent, right?

Q Yes, please.

A And you are talking about specifically Figure 1A?

Q 1B.

A I'm sorry. I just want to make sure.

Q Do you see that figure shows a cloud with two virtual machines in the center, 119-1 and 119-2?

A I do.

Q And it shows to the left, two virtual disks, 118-1 and 118-2, right?

A I have to check what 118-1 and 118-2 refers to if you don't mind.

Q Okay. Go ahead. But please what I'm asking you to confirm is that those are virtual

disks, 118-1 and 118-2.

A Give me one second, if you don't mind.

Q I don't mind. If it helps, you can look at Column 4 around Line 26, but, again, read whatever you'd like for context.

A Which column did you mention, sir?

Q Column 4, line beginning -- Line 26 -- excuse me -- you'll see reference to all the things I just pointed you to in Figure 1B.

A It appears to be correct, yes.

Q Figure 1B in the text I just pointed you to describe it, are referring to the virtual disks as separate from the virtual machine, right, connected to but different components?

A It appears in this case, the virtual disks are connected to virtual machines, yes.

Q But they are different components, right?

A They are depicted as different components here, yes.

Q If you go to Figure 2, please, you'll see a chart, a flowchart 200.

A I do see that.

Q The third entry down, so S220 -- I think that means Step 220? Says: "Determine a location of the virtual disk of the VM and its view."

Do you see that?

A I do.

Q VM, that's the standard abbreviation for a virtual machine, right?

A In this specific patent and context, I believe it is.

Q This is describing virtual disks as being something that can be of the virtual machine but still using different phrases to describe them as different things.

Can we agree on that?

A Can you repeat the question?

Q Sure. The Figure 2 here of the '031 patent is, again, showing the virtual disk to be different from the virtual machine, maybe part of but not the same thing as.

Can we agree on that?

A Yes.

Q And then if we go to the claims, so if you

drop down to Claim 1, as an example, so this is Column 10 of the '031 patent?

A Okay.

Q Read as much as you like, but you'll see there's multiple references to virtual disks and then separately to a virtual machine, right?

A I do see mention of virtual disks of a virtual machine as mentioned within the same sentence.

Q And can we agree, then, that the patent claim here is using virtual disk and virtual machine to refer to different elements of the system?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Again, in the specific figure that you showed me, that is correct. I don't know if it's broadly applicable because, as I said, as you said also, the virtual disks do appear to belong to virtual machines. They do have a relationship with virtual machines.

In Figure 1, they do appear to be

connected in different components, but I don't want to say that this is true for every virtual machine and every virtual disk.

BY MR. LUMISH:

Q I need to ask you, again, Doctor, because you referred to Figure 1. I'm asking about the claim, not the figure.

The claim language uses different phrases when it means to refer to virtual disks and virtual machines because it's referring to them as separate elements from each other, right?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I don't know if the claim is referring them as different elements, but it uses virtual disks over virtual machine -- in the claim.

BY MR. LUMISH:

Q You don't know if they are separate elements. You don't know if they are different from each other in the claims I mean?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Again, we have to be precise here. A virtual machine, as I understand it, can have virtual disks.

In this case, it identifies virtual disks of a virtual machine. I don't see where they are considered different elements, per se. A virtual machine can have virtual disks, as we discussed.

BY MR. LUMISH:

Q But what --

A There are elements where this is spelled out as different elements.

Q Sorry to interject there.

In doing your work, in looking at prior art to see if you could map it to the claims, did you understand you had to show something showing the virtual machine and also something showing a virtual disk? Or do you think they are synonymous, and you can just find one and then you have both?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Again, I don't believe that the two of

them are synonymous, just to be clear. But there are cases where they might be as part of the same system.

I don't know if that holds here. Figure 1 points to two different elements, but in the claim here, as I have it in front of me, that is not something that I can -- I will be able to tell based on reading the claims. They are definitely not synonymous. Virtual disks are different from virtual machines.

BY MR. LUMISH:

Q Let's look at your report, please. So if you go to the '031 report, so back to Exhibit -- or declaration, I should say, Exhibit 1002 from the '31 proceeding, and I'm looking at Paragraph 31, which is on page -- it begins on Page 19, although that doesn't look right.

A Making software containers; is that the paragraph you would like --

Q I think that's wrong. Hang on one moment, please. I think I have another bad note here. Give me one second, please.

I think what I meant to point you to, Doctor, was Paragraph 30, and it's a long paragraph, but you use the text that I wanted to point you to on Page 17.

So why don't I show you the text I'm talking about and then you can read whatever context you need for it.

So go to Page 17. So starting seven lines from the bottom, this is in your declaration, Exhibit 1002, it says: "VMs used virtual memory addresses to map the location of data as it appeared inside a virtual machine to a physical location on the disk."

And if you go to Page 18, you'll see, underneath the figures there, right about -- a little bit below the middle of the page, it says: "To a guest VM, files appear to be stored in a contiguous logical volume or virtual disk drive, but the file data would be physically stored in multiple discontinuous physical drives."

So that was a lot of context. What I'm trying to get at, though, Doctor, is pretty

simple, which is, can we agree that in your reports, you also use virtual machine and virtual disk drive or virtual disk to mean different things? They may be connected; one may be inside the other, but you're not using them synonymously; you're using them to refer to two different things?

A I definitely use them to refer to two different things. In this specific example, which is not limiting, they can be, as I noted -- let's talk about logical volume and virtual disk drive, not necessarily virtual disk, but they appear to be -- I mean, they are not synonymous it's obvious also from my declaration. But, again, this is an example.

I mean, someone might give other examples where the two elements might be depicted within the same box, if I may say, because that's where they are located or that's how the system is designed. In this specific example, they are separate.

Q While I've got you here, can you turn to

Paragraph 45 for me, please? That begins on Page 32 and carries over to Page 34. And let me tell you what I want to ask you before you read all of it so you know what you're looking for.

Do you have Paragraph 45 in front of you?

A I do.

Q So you say in the first sentence of Paragraph 45 that: "Off-the-Shelf virtualization tools (e.g., VMWare, VirtualCenter) routinely used APIs to query for information about a target VM, such as the identity and location of the virtual disks associated with the target VM."

And so, again, read what you need for context, but I just want to understand, first of all, how you believe or remember VMWare's VirtualCenter would use an API to identify and locate a virtual disk?

A Again, this is a very specific example using a very specific product. And, again, I don't have the product in front of me, but based on what I wrote and I remember is the VirtualCenter has different ways of accessing

information through APIs for target VM, including the identity and location of the virtual disks associated with a target VM.

And sometimes, these tools, as I recite here, would often provide the graphical user interface providing various management features, such as allowing users to view their VMs and such associated information. And it was commonplace for a graphical user interface to be used. But in other cases, the APIs would be used by automated modules that would not necessarily have to utilize programatically, that don't have necessarily to utilize a graphical user interface to obtain that information.

And, of course, I think there is an annotated figure I believe -- yes. I'm referring to the annotated figure on Page 34 where it shows the virtual machine, and you can clearly see the information that applies to a virtual machine and its resources.

Q So is the annotated figure, as you put it, on Page 34, that's a screenshot of the VMWare

software that I was asking you about?

A I believe so. It says on the top left, VMWare VirtualCenter.

Q How does it show you that -- or how, I should say, VirtualCenter from VMWare would identify and locate virtual disks using an API?

A In this specific example, I'm referring to my first part of the sentence that is using, basically, a graphical user interface, the tool would basically provide information, basically, to show you, through APIs, all the -- the list of the discovered VMs that you see on the left side.

And then for each VM to collect and provide the information that appears on the right side.

And, again, this is for the specific product specifically, and you can see the names and locations of the associated virtual disks.

Q And the names are, what, Hard Disk 1 and Hard Disk 2?

A In this case, it appears to be correct.

Q And why do you say those are virtual disks

when they are referred to as hard disks?

A So as -- and, again, in the figure above, in the figure in Page 34 of my '131 declaration, it shows that the Exhibit 1052 VirtualCenter with annotated green and red and notations, and the portion outlined in the red above shows identification of two virtual disks allocated to the virtual machine, Hard Disk 1 and Hard Disk 2, which are displayed along with respective locations ("SCSI 0:0" and "SCSI 0:1".)

SCSI refers to the Small Computer System Interface, which was a well-known standard for communicating with peripheral devices that was commonly used for local disks, and "0:0" and "0:1" refer to the SCSI address (here a bus number followed by a device ID.)

(Reporter clarification.)

Q Doctor, are you just going to read the entire paragraph? It goes on for quite a while. I'd rather not spend my time on that.

A All right, sir.

Q So let me ask you some questions here.

Now, do you see on the right side of the figure that's annotated, towards the bottom, it says "virtual CPUs"?

A Yes.

Q It specifically calls out that those CPUs are virtual, right?

A They are named virtual CPUs, yes.

Q There is no reference to Hard Disk 1 or Hard Disk 2 being virtual in that figure, true?

A The name does not indicate that the specific hard drive is virtual in this specific example, yes.

Q And SCSI, that's also often referred to by people as SCSI, right?

A Yes. I just wanted to make sure the reporter was able to collect it properly.

Q And SCSI or SCSI, that's a format, isn't it? Or a standard, as you put it?

A It's a standard.

Q Virtual disk doesn't have a physical format or standard, right? It's a virtual disk?

A I would want to refer you to my previous

figure that you referred to, and I apologize -- that's not entirely correct.

As you noticed, on Figure 2.1 on Page 18, there is a mapping process that happens between --

Q I'm sorry. Slow down, please. Where are you? In what document?

A I'm in the same document, sir, Page 18. I'm referring to the figure that you brought up.

Q Yes.

A Figure 2 --

Q I didn't bring up anything from Page 18, but okay.

A No, you did.

Q I didn't bring up that figure. In any event.

A I think that you pointed me to the 2.1.

Q It doesn't matter. I asked you about a text. It doesn't matter, Doctor. I see that anyway.

A Yes. So would you see that there is the disk physical pages are mapped to cost physical pages here, largely, for hardware basically.

(As read): "To a guess VM, files appear to be stored in a logical volume or virtual disk drive, but the file data would be physically stored in multiple potentially discontinuous physical drives."

So while you see here, the two hard drives, not is next to it, but it says "size unavailable," right?

Do you see that, sir?

Q I'm just waiting for you to answer my question, Doctor.

Go ahead.

A I'm trying to answer your question. So if you notice next to the Hard Disk 1 and Hard Disk 2, SCSI 00 and SCSI 01, it says "size unavailable."

Usually for physical disks, you would have an actual number there, but I believe and, again, I have to take a look at the specific tool because it's from a long time ago, these are virtual disk mappings to physical disk mappings that I tried to display here.

And the reason that the size is unavailable it is because it does refer to a virtual disk, which is perceived by the I2K test VM that we have in front of us.

As it displays in the figure on Page 34, it is a virtual disk that is perceived by the underlying virtual machine as a Hard Disk 1 and Hard Disk 2, two different ones, potentially.

So it's unclear to me -- and it might be the case that it's also physical, but, again, the important part here is that there is a virtualization layer that prevents the virtual machine from potentially knowing if it is actually talking to a physical drive or a virtual drive.

Because as far as the virtual machine is concerned, that is a physical drive as perceived by the virtual machine.

Q Was that the end of your answer, Doctor?

A I believe so, yes, sir.

Q So back on Page 34 of your declaration, Exhibit 1002 from the '31 proceeding, you, in describing what SCSI means, you say, "It's

commonly used for local disks."

Do you see that, that's the third line from the bottom of that page.

A As I said, it's commonly used for local disks, yes.

Q And then you talk about a bus number and a device ID for the 0:0 and the 0:1, right?

A That's correct.

Q A virtual disk isn't on a bus, right?

A It can be on a virtual bus. If you take a look, again, at the same picture that I was referring to you, it is SCSI controller 0, right there, and next to it's called -- it says "bus logic."

I would have to check, and it's not obvious to me. It can refer to a physical SCSI controller because that's the direct marking of the virtual disk and virtual machine. Manager can perform through the virtual machine virtual center or it can also refer to a virtual SCSI controller but abstracts the SCSI implementation for the disks.

Again, I don't know for sure what this specific figure and specific virtual machine was configured. I believe in my example, I used it as referring to a local disk, but that was not the only thing that disk would have been alluding to, because, again, the figure is for illustrated -- it's not meant to be encompassing every potential example.

Q When you say "a local disk" in your answer and here in your declaration, three lines from the bottom of Page 34, that's talking about a physical disk, right?

A Let me see. Where do you see me mentioning it is a physical disk? I said commonly a cloud --

Q Make sure you hear my question, Doctor.

A Yes, sir.

Q Your answer a moment ago said "local disk." Three lines from the bottom of Page 34, you refer to local disks.

My question is: When you say "local disks," you're referring to physical disks, right?

A Where do I say that exactly in my declaration, sir?

Q I'm asking you the question.

A I don't see it in my declaration. I'm sorry. Local disks are local disks. I didn't say if the disk is virtual local, virtual disk or local physical disk, do I?

Q I'm asking you the question. What you mean by "local disks," Doctor?

When you say "local disks" in your declaration and in your answer a moment ago, you were referring to physical disks.

Is that true or false?

A I don't believe that it has to be -- it could have been -- it could be physical disks, but it can also be virtual disks.

I don't think I preclude one or the other.

Q Okay. So we talked about the virtual disk being mapped to physical --

A Can I stop you here, before you ask the next question? Can we take a short break? It's already 12:34.

Q Would you mind if I just finish this? I'm almost done with this figure.

A Give me this. And I will give you as much time as you want to finish it. I'm just giving you a warning that I need to hit the bathroom.

Q No, of course. And if you'd rather break now, I'm happy to do that, too. I think I have one or two questions left.

A No problem. Go ahead.

I don't want to stop your trail of thought.

Q Thank you very much. I just want to finish up on this issue, which is: You said before that virtual disks are matched to physical disks -- mapped to physical disks.

The physical disks might be SCSI standard or SCSI formatted drives, right?

A It can being, yes.

MR. ARGENTI: Objection, form.

BY MR. LUMISH:

Q But the virtual disk wouldn't be formatted according to a SCSI standard, right, because it's

virtual, it's not actually a physical device?

A So, it really depends on the implementation of the virtual machine. The virtual machine, you have a -- and a virtual machine manager.

In many cases, the perception of a virtual machine might have been that it accesses a SCSI device, so from the perception of the virtual machine, even if the device was not a SCSI device, if the hardware virtualization layer applied to that disk was a SCSI device virtualization, that virtual machine itself would have perceived a known SCSI disk to be adhering to a SCSI standard because --

And I also point out, you can see in Page 35, where I say that the computing device from 125 is connected to the primary storage stored via the SAN 130, which may be any type of SAN (Fibre Channel SAN, an SCSI SAN, or any other type of SAN.)

Similarly, the SCSI standard was used as an interface and potentially as a -- depending on,

again on the tool used to perform the virtualization as an abstraction layer between the virtualized hardware, which might have been a non SCSI, potentially, and the actual physical hardware.

But in other cases, the tool might not have the ability to make that translation. And physical disk would be marked directly to the virtual machine as SCSI disks?

Q Last question, and then we'll take the break that you requested.

There is nothing in the figure here on 34, the context that you provided for it, that tells you with certainty that Hard Disk 1 or Hard Disk 2 are virtual disks, as opposed to physical disks; is that true, sir?

A While I cannot tell by just looking at the figure, the fact that it says "size unavailable" next to it, alludes to the point that if there was a physical disk, usually, that physical disk has a size that is accompanying it.

So the fact that the size is unavailable

makes me think that it can be either.

MR. LUMISH: Why don't we go ahead and take the break and go off the record, and we can talk about how long it will be.

(A lunch recess was had from 11:27 a.m. to 12:00 p.m. CST)

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

MR. LUMISH: We can go back on the record.

ANGELOS STAVROU, Ph.D.,

called as a witness herein, having been previously duly sworn and having testified, was examined and testified further as follows:

EXAMINATION (Resumed)

BY MR. LUMISH:

Q Dr. Stavrou, during any of our breaks so far today, have you spoken to counsel for Wiz?

A Yes, sir.

Q Did you discuss the substance of your testimony?

A No, sir.

Q What generally, are you talking about then?

A The weather and the food.

Q Let me ask you to bring up the -- or find your copy of the Veselov reference, please. It's Exhibit 1007.

A Give me one second to orient myself. I'm there.

Q You've obviously read this before?
A Yes, sir.
Q How many times would you say you've read the Veselov reference?
A Again, this happened over a period of many months, so I would say at least a few times.
Q You have it in hard copy, so it should work okay. I wanted to sort of bounce back and forth between your declaration, where you talk about the reference, and the reference itself.
A Let me see if I can accommodate that. Are we talking about which patent, sir, and which declaration?
Q I'm going to use the '031 declaration as kind of my exemplary one for most of the questioning, so I'm still on that one, and I'd like you to look at Paragraph 122, which is on Page 105, when you can.
A Can you repeat, just to be certain?
Q So Page 105, Paragraph 122.
A 122. I'm there.
Q Okay. It's a long paragraph. It spans

over into the next page. Let me show you what I'm asking about, and if you need to look at something in addition you can let me know.

So in Paragraph 122, the first sentence you say, beginning on the second line at the end there, that: "Veselov teaches that the scanning service uses that interface to 'identify virtual disks of a virtual machine in the client and environment' in order to facilitate its generation of a snapshot of such disks."

Do you see that?

A I do.

Q And there's no cite at the end of that sentence, right?

A I don't see any.

Q But you go on and you talk about performing a security assessment and the approach "routinely involved selection of the disks to be included in the snapshot." And there, you cite to two portions of Veselov, Column 6, Lines 30 through 38, Column 8, Line 60 through Column 9, Line 41.

Do you see that?

A I do.

Q So I want to ask you about those two cites. So back to the Veselov reference, we can go to Exhibit 1007 at Column 6, Line 30 through 38, and maybe I'll just ask you to read it to yourself and let me know when you're done, please.

A I see it.

Q You've read Column 6, Lines 30 through 38?

A Yes.

Q Do you see that it references a virtual machine, I think, three times in that passage? Do you see that, Doctor?

A I see -- okay. After 38, yes.

Q And there's no reference in that passage to a virtual disk, true?

A I don't see a virtual disk referenced in that passage.

Q And there's nothing that says anything about locating or identifying virtual disks on any of the virtual machines that are referred to in the passage we just looked at Column 6, Lines 30

through 38 of Exhibit 1007; is that true?

A So that specific -- that specific block of text starts with "in some embodiments." So while you're correct that in this specific excerpt from Veselov, the word "virtual disk" is not mentioned, I want to preface it by saying that that's just an embodiment and it starts -- and the entire section there starts with "in some embodiments."

So while it's true that that specific excerpt does not have the word "virtual disk," it doesn't mean that a virtual machine, for example, is not using a virtual disk or any of that.

Q This is the passage you selected in your report as support for your opinion that Veselov teaches --

A Yes, yes.

Q Let me finish.

-- that Veselov teaches identifying and locating virtual disks, right?

A Again, while that is correct, I want to point out Paragraph 124, where I also say that, "In view of these disclosures, a POSA would have

recognized that Veselov teaches having its scanning service identify the VM's virtual disks."

And that's part of --

"In other words, as I explained above, the user's request may identify a VM that would" --

(Reporter clarification.)

THE WITNESS: I apologize. I'm reading. I will restart.

BY THE WITNESS:

A It's Page 107, Paragraph 124.

"In view of these disclosures, a POSA would have recognized that Veselov teaches having its scanning service identify the VM’s virtual disks. In other words, as I explained above, the user’s request may identify a VM that will be the target of the scan, and the scanning service may then be tasked with taking a snapshot containing multiple virtual disks associated with that VM. A POSA would therefore have understood that the scanning service identifies the virtual disks so that it can include the disk data in the snapshot."

Also, in Paragraph 125, Veselov teaches --

BY MR. LUMISH:

Q Doctor. Doctor, I didn't ask you about those paragraphs. I just asked you about the citation you used. I asked you about -- if you can just answer my questions, please.

A Sir, I'm trying to answer your question, but your question refers to my assessment in my declaration that starts at Paragraph 122.

Q I don't need you to read long paragraphs to me. We don't have time for that.

A You don't want me to answer the question, sir, because you're not letting me answer.

Q Let me ask you my questions, please, and I'll ask you to answer them.

So the second cite that you gave in Paragraph 122 was to Column 8, beginning at Line 60 and carrying on to Column 9, Line 41.

If you would read that to yourself, please, and let me know when you're done.

A Okay.

Q That's a long passage. You read the whole

thing?

A Are you talking about Column 6, 30 to 38?

Q No.

A Are you talking about Page 60?

Q Can you please listen to my questions, Doctor.

A I am, sir.

Q So I'd ask you to read to yourself, beginning at Column 8, Line 60 through Column 9, Line 41, which was your citation. I'd like to ask you about it after you've reread it.

A I'm done.

Q Now, while you cited that long passage, the parenthetical in your declaration goes to part of a sentence that begins at Line 17 and goes through 25, and in that sentence, it says, in Veselov Exhibit 1007: "In various nonlimiting examples, the scanning service may obtain the snapshot data by executing the snapshot itself, by requesting another service to capture the snapshot and provide it to the scanning service, by accessing a data store (e.g., the snapshot storage

service) containing the snapshot, et cetera.

"Alternatively, the scanning system may obtain access to the snapshot data, such as at a storage location of the snapshot data, but may not obtain, i.e., make a copy of the snapshot data."

That sentence which you paraphrased in your declaration at Paragraph 105 does not mention virtual disks, true?

A That specific paragraph gives various nonlimiting examples, as it actually says. So in those nonlimiting examples, it is true that the word "virtual disk" is not mentioned.

However, I want to say that, as I say in my declaration, a POSA would have recognized that Veselov teaches having a scanning service identify the VM's virtual disks.

In other words, as I explain in that -- by citing these, the user's request may identify a VM that will be target of the scan, and then the scanning service may then be tasked with taking a snapshot containing multiple virtual disks associated with that VM. A POSA would therefore

have understood that the scanning service identifies the virtual disk so that it can include the disk taking the snapshot.

MR. LUMISH: Object to the nonresponsiveness.

BY THE WITNESS:

A I mean Veselov also teaches that the user will interface 25 virtual disk utilize cloud computing platform and APIs as recited.

So by focusing on a very specific selected example, it doesn't -- your reference is not representing what Veselov is trying to convey as a spec.

BY MR. LUMISH:

Q It's not reference, Doctor. This is your citation I'm asking about.

Do you understand that?

A I do understand that this is my citation, but it's being used out of context, sir. Because if you take a look at my declaration, Paragraphs 122, all the way to Paragraphs, I believe -- let me check -- all the way to Paragraph -- give me

one second so I can give you a precise answer -- all the way to Paragraph --

Q This is not an answer. This is not an answer to a question I asked you.

A I did answer your question, sir.

Q You're now filibustering and giving me data I haven't asked you for.

MR. ARGENTI: Objection. Form.

BY MR. LUMISH:

Q Are you finished?

A I'm finished.

Q Okay. So nothing in the longer section that I asked you to read from Column 8, Line 60 through Column 9, Line 41 of Exhibit 1007 described using an API to locate or identify a virtual disk specifically, did it?

Are you going to answer my question, Doctor?

A Is there a question? I thought that was a statement.

Q No, there is a question.

A Can you repeat the question, please?

MR. LUMISH: I'm going to ask our court reporter, do we have a timestamp running on this transcript?

THE REPORTER: Yes, we do.

MR. LUMISH: Great. Thank you.

BY MR. LUMISH:

Q Yes, there was a question pending, Doctor.

I asked you to tell me if it's true that nothing in the longer section I asked you to read from Column 8, Line 60 through Column 9, Line 41 of Exhibit 1007, described using an API to locate or identify a virtual disk specifically.

A And my answer was that that specific section is taken out of context, and while it doesn't have the word "virtual disk" recited there within, in view of what it says, a POSA would have recognized that Veselov teaches having a scanning service identifying the VM virtual disks.

In other words, the user's request may identify a VM that will be the target of the scanner and scanning service may then be tasked with taking a snapshot, containing multiple

virtual disks, associated with that VM.

So a POSA would, therefore, have understood that the scanning service identified the virtual disk so that it can include the disk data in the snapshot.

Q You're saying that by asking you about your citation to your sentence, I'm taking your passage, 860 through 941, out of context?

A You're not taking my -- you are taking my analysis, my full analysis, you're trying to -- you do not read my full analysis, which explains why that specific passage was used, and it does not depend on the use of the word "virtual disk" specifically in my declaration in the specific section on Page 105 to 113, to establish the fact that the POSA would have recognized that Veselov teaches having a scanning service identified VM's virtual disks, and I want to make it clear.

Q If can you turn to Paragraph 123 of your declaration, for me, please, it's Exhibit 1002.

A Are we still on the '131 declaration, sir?

Q Yes.

A And you mentioned Page 132?
Q No.
A Which page? I apologize.
Q Paragraph 123.
A 123. I'm there.
Q Why don't you read that paragraph to yourself and let me know when you're done, please.
A I'm done.
Q You cite in that paragraph for support for your opinions in three different chunks Column 6, Line 30 through Column 6, Line 43, right?
A That's correct.
Q Nothing in that section of Veselov Exhibit 1007 even mentions a virtual disk; isn't that true?
A Again, I want to point out that this section is taken out of context from my analysis, and why that specific section does not recite verbally the word -- the use of the phrase "virtual disk," a POSA would have recognized that Veselov teaches having a scanning service identify the VM's virtual disks.

In other words, as I explained, the user's request to identify VM that will be the target of the scan, and the scanning service may then be tasked with taking a snapshot containing multiple virtual disks associated with that VM.

A POSA would, therefore, have understood that the scanning service identifies the virtual disk so that he can include the disk data in the snapshot.

It was done routinely that this was not -- the process of requesting having the location identifying the location of a disk, was routinely done through APIs, and in some cases, through graphical user interfaces.

And the reason, in my experience, that it might not have been mentioned is because in this specific sections that you recite, is because a POSA would have recognized that it's been taught by Veselov, regardless.

Q That's the second time you just read Paragraph 124 top to bottom. I'll ask you not to take my time to do that again, please.

I'm going to ask you about 124, but I get to ask you about things that I want answers to, Doctor.

So 124 in your declaration, it starts with: "In view of these disclosures," right?

That's the phrase you start with?

A Yes, sir.

Q And those disclosures that you refer to as "these disclosures," are the ones from Paragraphs 122 and 123; isn't that true?

A That is correct.

Q And those are the ones I've been asking you about in Veselov, right?

A I believe that you are trying to take this passage out of context.

Q Can you just answer my question? You've said that about six times now.

MR. ARGENTI: Objection to form.

BY THE WITNESS:

A I want to be clear that, again, your questions are trying to misconstrue what has been said in my declaration, and I want to make sure

that the record states that, sir.

So you are aware that I expressedly -- and I'm not going to recite it, since you don't want me. I would like to point you to Paragraph 124 and 91 in my declaration, where I explain that a lot of these concepts appear in different sections of the spec of Veselov.

And they are interchangeably applied to different things, and a POSA would have recognized that Veselov teaching are allowing the scanning service to identify the virtual disks so that it can include the disk data in the snapshot.

MR. LUMISH: I object again to the nonresponsiveness and the filibustering.

BY MR. LUMISH:

Q In Paragraph 124 of Exhibit 1007 from the '031 proceeding, Doctor, when you say "in view of these disclosures," you're talking about the disclosures in Paragraphs 122 and 123, none of which refers to using an API to identify or locate a virtual disk; isn't that true?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A So that is not true because, again, there were other elements -- I mean, these were sections from Veselov, but I want, also, to point out that I have Exhibit 1051 and Exhibit 1053 and other exhibits that, basically, a POSA would have understood that such a process is part -- the scanning service uses interfaces and APIs to identify virtual disks of a virtual machine in the client environment in order to facilitate a generation of a snapshot of such disks, and this is clearly stated in Paragraph 122.

Q There's no opinion anywhere in any of your declarations in this case that Veselov itself expressly refers to identifying or locating or querying a virtual disk.

Is that true or false?

A The section -- are we talking about my declaration as a whole? Or are we talking about specific sections?

Q I'm talking about all your declarations.

Don't you agree with me, Doctor, that

Veselov doesn't expressly refer to identifying or locating a virtual disk with an API?

A The process of identifying one or more virtual disks with an API was routinely done through different means. One of the means that I point to is that Veselov teaches that the user interface to identify the virtual disks utilizes cloud computing platform APIs, as we recited.

Again, in Paragraph -- this is in Paragraph 125, Page 107: And "also Veselov teaches that the scanning service interacts with the target resource environment using a communication interface that uses APIs to send and receive information."

You can see here, the references in Page 108 at the top.

Q Is it your testimony under oath that that's -- as I asked you, an express reference in Veselov to using an API to locate and identify a virtual disk?

Is that your testimony under oath today, Doctor?

MR. ARGENTI: Objection. Form.
BY THE WITNESS:
A As I repeated in my declaration, a POSA would have understood reading the specification of Veselov, that a scanning service in order to perform the snapshot, would have to identify virtual disks, and that was routinely done through cloud platform APIs and other means.
MR. LUMISH: Object to the nonresponsiveness.
BY MR. LUMISH:
Q Now, please answer my question.
MR. ARGENTI: Object to form.
BY THE WITNESS:
A The paragraphs that you asked me to recite do not --
BY MR. LUMISH:
Q That's not my question.
A What is your question, sir, then?
Q I ask you to listen very carefully because you keep answering things I'm not asking you.
My question, Doctor, is: Is it your

testimony under oath that there is an express reference, express reference, in Veselov itself, not somewhere else, Exhibit 1007, to using an API to locate and identify a virtual disk?

A While there is not an express reference, I want to point out that a POSA would have recognized that Veselov teaches the identification through its spec and also the fact that it uses a cloud computing platform APIs that were routinely used to perform that operation.

Q There is no express reference, right?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I will repeat my answer.

While there is no express reference in Veselov about virtual disk location, a POSA would have recognized that Veselov teaches having a scanning service identify the VMs virtual disks because in order for the user's request to identify a VM, to identify a VM that will be a target of a scan and the scanning service would have been tasked with taking the snapshot

containing multiple virtual disks associated with that VM.

And a POSA would have understood that the scanning service identifies the virtual disks so that it can include the disk data in the snapshot.

BY MR. LUMISH:

Q There are no opinions in any of your declarations in any of the three proceedings we're talking about today, Doctor, that a person of ordinary skill in the art, would have had a reason to modify Veselov to use an API to identify or locate virtual disks as opposed to virtual machines; is that true?

A As I cite in Paragraph 125 of my declaration: "Veselov also teaches that the use of the interface to identify the virtual disks utilize cloud computing platform APIs, as recited.

"As I previously explained, Veselov teaches that the scanning service interacts with the target resource's environment" to perform that.

So there are cloud APIs in cloud computing

environments which perform -- that will use routinely to perform these tasks, so a POSA would have understood that this is what Veselov was referring to.

MR. LUMISH: I object to the nonresponsiveness, and I'll ask you to answer my question now, please.

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Can you give me the question one more time?

BY MR. LUMISH:

Q Can you listen carefully, please? We're spending a lot of time having me repeat my questions because you're answering something different.

A I'm answering your questions, sir. I just think that you don't like my answers.

Q No. I'd like you to answer my questions.

My question is very clear.

There are no opinions in any of your declarations, in any of the three proceedings

we're talking about today, in which you say, Doctor, that a person of ordinary skill in the art would have had a reason to modify Veselov to use an API to identify or locate virtual disks as opposed to virtual machines?

Is that true or false?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Veselov routinely used APIs as part of the cloud service APIs to perform different tasks. So I disagree about the use of APIs. And part of these APIs was functionality to identify and locate disks. And a POSA would have understood that this functionality was relevant in this context here that we're talking about.

Q Can you answer my question, please?

A I think I answered your question, sir.

Q You absolutely did not. I'm asking you about a motivation to modify Veselov.

You don't have any opinions in any of your declarations suggesting that a person of ordinary skill in the art would have a reason to modify

Veselov in any way?

A I don't believe --

MR. ARGENTI: Objection to form.

BY MR. LUMISH:

Q Sorry, your answer?

A I don't believe that it was necessary for Veselov to be modified. I believe that Veselov has enough information that the POSA have recognized that basically the -- a POSA would have understood that Veselov target the source as part of a cloud computing environment, and that meaning -- and that would be it's obvious that the meaning that the API are discussed about the cloud platform APIs as cited in Veselov have been used to locate virtual disk.

MR. LUMISH: I object to the nonresponsiveness.

BY MR. LUMISH:

Q I didn't ask you if it was necessary to modify. I asked you if it was true that your declarations don't issue any opinions that a person of ordinary skill in the art would have a

reason to modify.

Is that true or false?

MR. ARGENTI: Objection. Form.

BY MR. LUMISH:

Q I'm talking about modifying Veselov.

A I don't talk anywhere in my declaration about modifying Veselov, sir.

Q Right, exactly. That's my question, Doctor.

Can you turn to Column 7, beginning at Line 50 of Veselov Exhibit 1007, please. And I'd ask you to read to yourself, Column 7, Line 50 through 61.

A Yes.

Q That section I just had you read, Column 7, Line 50 through 61 of Exhibit 1007, identifies or -- or lists a series of identifiers.

Do you see that?

A I do see that.

Q It talks about an identifier for a virtual machine, for example, at Line 52?

A That's correct.

Q It talks about an identifier for a snapshot or snapshot data at Line 53?

A That's correct.

Q And it talks about an identifier for a file name or a key at Lines 59 and 60, right?

A That's correct.

Q Nothing in the passage I just asked you to look at includes an identifier for a virtual disk, true?

A That specific passage starts with the word "for example," so I'm guessing that this is an example of different things. So while it doesn't have a disk identifier, I would take it as a means to provide some examples.

Q Are you aware of any other place anywhere else in Veselov Exhibit 1007, where it identifies or describes an identifier for a virtual disk?

A I'd have to look at it more carefully. I'm not -- I haven't searched the entire patent about the virtual disk identifier keyword.

Q Okay. Without reading the whole patent, you're not aware of one as you sit here now that

you can point me to. You're just saying you're not sure there isn't one; is that fair?

A That's fair.

Q Let's talk about APIs.

You said a few times in recent questions that Veselov teaches a cloud API. It never refers Veselov Exhibit 1007 to any of its APIs as a cloud API, true?

A I believe -- let me check. I have to check because, again, this is something that I have to check the patent, and I have it all in textual form, which means I have to search the patent to see if what you're asking me is true or not.

Q You said it teaches cloud APIs. Where in the patent are you referring to in your answer where it refers to a cloud API, then?

A Given me one second.

"As I explained and discussed in the state of the art, data centers were typical environments for hosting cloud computing services. Veselov also expressly teaches, or at least suggests,

using its techniques in cloud computing environments. For example, Veselov explains that its techniques address concerns that are particularly important for target resources that are 'provided using a distributed computing environment (e.g., a ‘cloud’ computing environment.)'”

It's in Veselov Column 2, 40 to 67, also Column 2, 67 all the way to 319, discussing security in cloud environments operated by service provider running this type of application.

"Veselov also describes its embodiments as using environments that a POSA would have recognized as typical environments providing cloud computing services."

Q Are you just reading to me from your report, again?

A Absolutely, sir.

Q What paragraph?

A It's Page 109.

Q What paragraph?

A Paragraph 126.

Q Okay. Now, there's only a single citation -- or a single time that Veselov uses the word "cloud."

Isn't that true, Doctor?

A I'm not sure exactly where. Can you point me because I think at least one.

Q Yes. Column 2, Line 60, which was within the citation you were just reading from your report. It uses the word "cloud."

Do you see that?

Actually, I should say twice in that paragraph, not once. So there's virtual cloud assets on Line 57, and then this refers to a cloud asset on 60.

So I misspoke when I said once. I apologize.

A It's also, I think, if I'm looking correctly in Column 2, at the bottom of 67, says -- 66 and 67 says, "Providing using a distributed cloud computing environment, e.g., a cloud computing environment."

Am I wrong, sir?

Q One second. I'm confusing myself here. I am looking at the patent, when I mean to be looking at Veselov. So let me try again. I apologize.

When you were reading to me, you were referring to Veselov, right, not to the '031 patent?

A Absolutely, sir.

Q I screwed that up. Let me withdraw the question. I apologize to you for taking that time and let me try this again.

So let me say it again. Veselov has only a single reference to cloud. There's only one time it ever uses the word, and it's at Column 2, Line 67. Is that true or false, to your understanding?

A I see that it means that it refers to a distributed computing environment, e.g., a cloud computing environment, and that means whenever it talks about distributed computing environments, a cloud environment is an exemplar.

So I think while it might be true, I

haven't checked the entire patent that cloud might appear only once.

I think in Veselov, it is clear that the distributed computing environment that the patent applies to, and also apparently a computing environment, cloud computing environment is part of that. It talks about in such computing environment, the physical computing device that provides a service or distributed application may change over time.

So it continues referring to the cloud computing environment as a paradigm of a distributed computing environment in the same specific -- in the immediate previous line to Column 2, 66.

So I would take that the distributed -- wherever we see distributed, the cloud environment is part of, you know, that computing environment that it is referring to.

Q Are you done?

A I'm done, sir, yes.

Q So the single reference to cloud in

Veselov at Column 2, Line 67, doesn't refer to an API at all, right?

A That specific line that you are pointing me to, and it's very limited to one line, does not.

Q You're not aware of any part of Veselov, where it refers to a cloud API by that name?

A I want to repeat my previous answer to you that the specific patent talks about distributed computer environments.

And the cloud component is an exemplar of a distributed computing environment in the same vein some people refer to computing environment sometimes with the word "virtual" computing environment because of the word "virtual," as we have in virtual disk and virtual machine.

So it's -- the fact that it's in a data center, a lot of people use interchangeably the word "data center," "data center resources" and "cloud resource."

So I want to caution here, that it's the context that matters. So while absence of the

word doesn't automatically mean that the POSA would automatically exclude the use of the word "cloud" or "API" from a patent.

MR. LUMISH: I object to the nonresponsiveness.

I didn't ask you about any of that. I'm just asking you to answer my question, please.

BY THE WITNESS:

A Will you please repeat your question.

BY MR. LUMISH:

Q There's no reference to a thing called a "cloud API," by that name anywhere in Veselov; true or false?

A I have to check the entire patent. If you say so, I would not disagree, but I haven't myself verified this.

Q You understand Veselov describes two basic embodiments, the ones in Figures 3A and B and then separately the ones in 5A and B?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A And I want to point out, because I want to

make sure that it's on the record. I point out in Paragraph 91 of my declaration, that the figures in the embodiments, specifically Veselov, describes several different embodiments and figures, but a POSA would have understood that the techniques and components described in context of a particular embodiment or figure, can also be applied in the context of other embodiments and figures.

BY MR. LUMISH:

Q Can you answer my question now, please?

A Can you please repeat your question?

MR. ARGENTI: Objection. Form.

BY MR. LUMISH:

Q Veselov describes two basic embodiments. I don't mean to suggest that they're exclusive or any of the things you just said, but it describes an embodiment in Figures 3A and B and then a different embodiment in Figures 5A and B.

Is that true or false?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I see the figures. I'm not entirely sure of the mapping or the basic embodiments you refer to. So if you can explain to me what you mean by that, I would be happy to oblige.

BY MR. LUMISH:

Q If you don't know, you don't know. If you don't know if they are embodiments or not, that's fine.

MR. ARGENTI: Objection to form.

BY MR. LUMISH:

Q Can we agree, Doctor, that Figures 3A and B, so Figures 3A and 3B -- withdraw.

Let me just ask you to turn to it. Why don't you turn to Figure 3A, please, in Exhibit 1007.

Do you have that?

A I'm getting there, sir.

Q I don't mean to rush you. Take your time.

A I'm there, sir.

Q You see on the far left side, there is a depiction of a computer, right?

A Are you referring to element 302, sir?

Q Yes.
A It looks like it, yes.
Q And then to the right of that computer, there is a big dashed box that has lots of different components in it. And that big dashed box is referred to in the upper left corner as the Computing Resource Service Provider.
Do you see that?
A I do see that.
Q And then there is API 338 that sits between the computer element 302 and the computing resource service provider 300 and the scanning service 310, in particular, right?
A Are you referring to 330, Box 330?
Q No.
A I'm sorry. I misheard you, then.
Q There is an API 338 in Exhibit --
A Yes.
Q Let me finish my question, please, Doctor.
In Exhibit 1007 Veselov, there is an API 338 that sits between the compute element 302, and the computing resource service provider 300

and, in particular, its scanning service 310, true?

A I see it inside the computing service provider Box 300, and I see two others, one communicating with 302 and another communicating with scanning service 310. The API, being connected to these two elements in Figure 3A.

Q Figure 3B, if you turn to it, you'll see also has the same computer element 302, right?

A Yes.

Q It also has the computing resource service provider, although, it now refers to it as No. 350, do you see that?

A I do.

Q And there is another API shown and, again, it's API 338, right?

A I see the 338 API, correct.

Q And it sits between the computer element and the scanning service of the computing resource service provider, true?

A It is, again, talking -- it has two elements: One talking to 302, another one talking

to 310, the scanning service.

Q Now, let's compare this to Exhibits 5A and 5B, please. If you turn to 5A, can we agree that unlike the embodiment shown in Figures 3A and 3B, what is shown in Figure 5A doesn't include either the computing resource service provider or the API?

A Again, you're referring to Figures 5A and 5B, right.

Q Yes, although, I pointed you specifically to 5A to start. But if you want to do them both together, that's great by me.

A So I see a virtual computing environment 504A. Again, I want to point out that Veselov -- and I want it to be clear that as I explained in Paragraph 91 of my declaration, Veselov describes several embodiments. In some of the figures, it is understood that the POSA would then have understood that the techniques and components described in context of a particular embodiment of a figure, can also be applied in the context of other embodiments and figures.

So while, for example, some figures might not contain specific elements verbatim, it does not mean that the teachings do not apply broadly.

Q Can you answer my question now, please?

MR. LUMISH: And I object to the nonresponsiveness.

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A The specific figure does not have the elements you mention.

BY MR. LUMISH:

Q It doesn't have either a computing resource service provider or an API, right?

A It does not show that, yes.

Q And the same is true for Figure 5B. It doesn't have or show a computing resource service provider or an API?

MR. ARGENTI: Objection. Form.

THE WITNESS: Yes, but as I said in Paragraph 91, that is not limiting for the specific teachings of Veselov as they are embodied -- as they describe in the specification.

BY MR. LUMISH:

Q You're talking about Paragraph 91 of your declaration?

A Perfect. In that paragraph, I explain some concepts. My entire declaration shows the teachings and how they are applied.

Q I'm just asking what 91 you're referring to, Doctor. When you said Paragraph 91, you meant --

A -- my declaration --

Q When you said "Paragraph 91," you were referring to your declaration Exhibit 1002 from the '031 proceeding, right?

A Correct.

Q That paragraph does not say that it's your opinion that Figures 5A and B would include, even though, not shown, an API or a computing resource service provider, true?

A So, as I said, Paragraph 91, since you asked me about that, it says that the scanning service described in conjunction with Figures 5A-B illustrate may perform security assessments in

accordance with various embodiments, and that Figures 5A-B illustrate additional embodiments, and on that Figures 5A-B illustrate additional embodiments of the present security assessment system and that the depicted components as well as their implementations, interactions are the same as described above for associated components of Figures 3A-B. Veselov also explains that -- it goes on.

This paragraph goes on. I don't want to take more of your time, but I want to refer to this paragraph in its entirety because it shows that embodiments in Figures 3A and B can also be added components, do not necessarily have to be depicted on every single figure to be applicable.

Q But that's not my question.

My question was: In Paragraph 91, you don't say that because of all the things you just said, a person of ordinary skill in the art, in your opinion, would think that exhibits -- Figures 5A and B include an API and a computing resource service provider, even though, those

things are not shown in those figures.

You don't say that in Paragraph 91, right?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I do.

BY MR. LUMISH:

Q Where do you say what I just said? Not the broad things you've read to me. Don't read me the whole paragraph. I want you to show me precisely where you say a person of ordinary skill in the art would find an API and a computing resource service provider specifically in Figures 5A and B.

A I will repeat because I don't think I'm understood. So the figures in Veselov are embodiments or specific teachings. And as such, they apply broadly across teachings. A figure can have or cannot have specific elements, but that does not make the figure exclusive to a specific to -- it's an example. It's an exemplar of what Veselov was trying to teach.

And Veselov himself, that Figures 5A and B

state, "Additional embodiments of the present security assessment system and components" as well as the implementations and interactions are the same described above meaning that for associated components of Figures 3A and B, and this is actually in Veselov Column 10, 37 to 41, Column 16, 56 to 67.

Q I promise you I'm going to ask you about those two. I'm going to ask you about both of those citations in a moment, but I really would like an answer to my question first.

A So as I explained, while these two figures might not have the elements that you just cited, the fact that they exist in Figures 3A and B, and Veselov talks about them extensively in the specs.

Q That's still not my question.

MR. ARGENTI: Objection. Form. Let the witness finish his answer.

MR. LUMISH: I hear you, Matt, and I hate to interrupt, but I really would like him to answer my questions, not his own.

So I'll try one more time, Doctor, and I'm

just going to give up and argue that you shouldn't be allowed to testify about this subject.

BY MR. LUMISH:

Q So my question to you, Doctor, is in Paragraph 91 that you referred me to, you don't there say it's your opinion that a person of ordinary skill in the art would know specifically that Figures 5A and B disclose specifically a resource -- a computing resource service provider or an API.

Is that true or false?

MR. ARGENTI: Objection. Form.

THE WITNESS: Again, I will refer you to Paragraph 91, but Veselov makes it clear that when a portion of a disclosure associated with a particular figure or embodiment describes certain techniques or components, those teachings are broadly applicable to the rest of the Veselov disclosure.

So while you're asking me to answer for a specific figure, I want to caution that this figure might not have components, but it's because

of the specific embodiment that he's trying to describe, and it's not limiting in any way to the Veselov teachings.

MR. LUMISH: I object to the nonresponsiveness, and we'll take it where it goes, and I'm not going to keep repeating myself.

BY MR. LUMISH:

Q You pointed me to language at the bottom of Paragraph 91 on Page 83 where it says: "Figs 5A-B illustrate additional embodiments of the present security assessment system."

Do you see that?

A Let me go there.

Q You're looking at the wrong document, Doctor.

A I'm sorry. What is the document I should be looking at?

Q Paragraph 91 of your declaration, same paragraph I keep asking you about, Exhibit 1002, from the '031 proceeding.

A Again --

Q I didn't even ask you a question yet.

A I'm sorry. Go ahead.
Q Have you found the part that you pointed me to three lines from the bottom, where you say: "Figures 5A, B illustrate additional embodiments of the present security assessment system"?
A Are you in --
Q Excuse me?
A Are you in Paragraph 91 of my declaration?
Q Really?
A Tell me, sir, where do you want me to look?
Q Three lines from the bottom, Page 83, Paragraph 91, Exhibit 1002, your declaration in the '031 proceeding.
A Now we are there.
Q You pointed me to this several answers ago. It says: "Figs 5A, B illustrate additional embodiments of the present security assessment system."
Right?
A It continues, sir.
Q I know. I'm just asking you about the

this language that you pointed me to.

A Yes, that is part of the sentence, that's correct.

Q Okay. And it says additional embodiments. It doesn't say that it's the same embodiment as Figures 3 and B, right?

A It says additional, that's correct.

Q Right. You said -- the text continues, and it continues to discuss that there's different figures, 3A-B, right?

A Right. Different figures, 3A -- Figure A and B, yes.

Q Can we agree that Figures 3A and B disclose one embodiment of the "security assessment system" and Figures 5A and B are different, or what you'd call here, additional embodiments of that system?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Again, this is -- and I want to say that this is -- is reading -- it's a partial reading of what the sentence says because it continues to

say: "And that the depicted components, as well as their implementations and interactions are the same as described above for associated components of Figures 3A and B."

Q Is your testimony that they are the same embodiment or different?

A I would not say -- I would say additional, which means that teachings from 3A and B can also be applied to 5A and B.

Q So I promised you this; I'm going to do it. Let's go to Column 10, Line 37 of the Veselov reference, please, Exhibit 1007. Go to the two things you were citing to me before, Column 10 and Column 16. I'm going to start with Column 10.

A Can you point me to where you want me to go?

Q You pointed out Column 10 beginning at Line 37, so that's where I'm going.

Do you have that in front of you?

A I'm on Column 10.

Q So beginning at Line 37, Veselov Exhibit 1007 says: "Figs 3A-B illustrate example

computing environments implemented by a computing resource service provider 300, 350 in which computing environments, a scanning service 310 may perform a security assessment of a target resource in accordance with various embodiments."

Do you see that?

A I do.

Q My question, Doctor, is what Veselov says 3A and B are -- are example environments that are "implemented by a computing resource service provider," right?

A That's what it says.

Q Do you agree with me that what it's telling you is that it's describing 3A and B as an embodiment that's implemented that way, that's implemented using this thing called a computing resource service provider?

A It calls it an example computing environments. Example computing environments implemented by computing resource service to be exact, which means that it has to be taken as an example.

Q Sure. I understand it's an example. I'm not asking you that.

So now let's turn to the second citation you mentioned, Column 16, beginning at Line 56, and this is the text that we saw in your declaration, Paragraph 91, but let's just look at it straight from the source, Veselov Exhibit 1007.

So here Veselov says: "Figs 5A, B illustrate example computing environments 500, 550, providing additional embodiments of the present security assessment systems."

Do you see that?

A I do.

Q It doesn't mention a computing resource service provider, does it?

A Again, it talks about example computing environments, and as I explained, again and again, some of the communications and elements -- and again, I will point you to Column 24, 54 to Column 25-2 in Veselov in my declaration, Page 84 in Paragraph 91: "Noting that phrases such in an embodiment are not necessarily intended to refer

to the same embodiment or to one particular embodiment described."

So in other words, what the spec, as I read it, means is that Veselov makes it clear that when a portion of a disclosure associated with a particular figure or embodiment describes a set of techniques or components, those three things are broadly applicable to the rest of the Veselov disclosure.

So the fact that an API is missing from an embodiment, which is an example, does not automatically preclude that this cannot be implemented based on what Veselov is trying to teach.

MR. LUMISH: I object to the nonresponsiveness.

BY MR. LUMISH:

Q And I would ask you to answer what I asked you which is: Figure 5B is described -- or 5A and 5B, I should say, is described here in Veselov at Column 16, beginning at Line 56, without reference to a computing resource service provider.

Is that true or false?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A As I previously explained, while it appears that the element is missing here, Veselov's teachings are applied broadly because the specs are explicit about that.

And, again, Figures 5A and 5B are illustrative of the embodiments of potential examples. It doesn't -- it's not meant to be exhaustive.

BY MR. LUMISH:

Q It doesn't describe in the text describing Figures 5A and 5B, the use of or implementation through a computer resource service provider or the use of an API.

That's just true in what the text says, isn't it, Doctor?

MR. ARGENTI: Objection. Form.

THE WITNESS: Again, I will repeat it.

While what you are referring -- the passage that you're referring to, might not have

explicit reference to the components that you mention, it is clear from the spec that the teachings are broadly applicable across embodiments, and these embodiments are not meant to be exhaustive.

BY MR. LUMISH:

Q Now, if you go down --

MR. LUMISH: And I object to the nonresponsiveness.

BY MR. LUMISH:

Q If you go back down further in this same section here, still on Column 16, so a long sentence that starts on Line 58, but I want to point you to particular text. And you can read what you want for context.

So beginning at Line 64, Column 16 -- and just for the record we're still in Veselov Exhibit 1007 -- it refers to "implementations and interactions that it says are, quote, 'the same as described above for the associated components,'" and then it lists components of Figs 3A-B.

Do you see that?

A I do.

Q Do you understand, Doctor, that what it's saying here is, it's saying: Here is where you can find the same implementations and interactions for the components that are listed between Figures 3A and B on the one hand and Figures 5A and B on the other hand?

A What is your question?

Q What I just said.

A So I don't think that I have the same label as you. I want to point out that where you pointed me, it says: "The examples again."

It starts with the phrase "the examples again use a virtual machine 512 as the exemplar target computing resource of the security assessment."

And it lists a bunch of elements, 500 elements. I want to point out, it is my understanding and what I was trying to explain before is that the teachings here are mixed.

You can see here that there are components that are referred to in figures and basic

implementations and interactions that refer to components from another figure.

To me, that shows that elements of one figure in Veselov were implementations and interactions were allowed to be implemented in another figure, even when those elements and components were not actually explicitly mentioned in that figure.

Q What this is saying, Doctor, is, for example, 502 from Figure 5A and B has the same implementation and interaction as 302 in Figures 3A and B, right? Or do you deny that, too?

A I don't deny anything, sir. I'm just pointing the fact that this is an example, number one, and it's also, in my reading, it makes it clear that what Veselov is talking about here is that by looking at these figures, we are allowed to assume that components from one figures can be present in another figure, even if the figure is not showing that component. And at the same time some of the implementations and interactions are

the same, as described above, for the associated components.

So it means that, basically, how things communicate, for example, in your question before, the API, it might be the case that the API is present in the embodiment of Figure 5, even if it's not shown in the figure, because I'm allowed to -- the interactions are freely used between figures.

MR. LUMISH: I object to the nonresponsiveness.

BY MR. LUMISH:

Q The examples that are given here that include for Exhibits 5A and B, Elements 502, 504A, 506, 512, 560, 562, 564, 566 and 508 are described as having implementations and interactions that are the same as from Figs 3A and B, Elements 302, 304A, 306, 308, 312 and 360 through 366.

That's what's described in the paragraph, right?

A This is an embodiment, that's correct. That is described in the paragraph, but I want to

caution that this is a specific example, where it illustrates that components and implementations and interactions from Figure 3 appear to be similar or same.

And also, I want to mention here that, since you cited it, it mentions 302, right. I want to point out that in Figure 3, 302 is using an API 338 to communicate. Am I correct, sir?

MR. LUMISH: Object to the nonresponsiveness.

BY MR. LUMISH:

Q So none of those numerals that I read to you, Doctor, from Figures 3A, B or 5A or B refers to the API 338, correct?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Give me a second because I have to flip back and forth. If you can reorient me, I have to go back to the figure. Where exactly are you?

BY MR. LUMISH:

Q Where I've been the whole time, Column 16, Lines 56 through 67.

There is no reference there to the API, which is reference numeral 338 in the figures?

A So I want to point out that the specific paragraph states in Column 16, 65, it says: "As well" -- starts from 64: "As well as their implementation and interactions, are the same as described above for the associated components 302."

The component 302 that I see -- and, again, I have to flip forward to Figure 3A. I see the component 302 interacting, as we discussed, with the scanning service 310 through an API 338, which is exactly what Figure 3A shows and exactly what Figure 3B shows.

The API, again, is 302 interacts or connects to API 338, so if I read that paragraph and I repeat verbally from the patent, which is, again, in response to your question, to me, the implementation and interactions are the same, means that if there is the same interaction, it can be possibly thought of it being through the API.

Q My question is simply: API 338 is not included in the reference numerals listed, that I've asked you about a bunch of times now, at Column 16, Lines 56 through 67, right?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I think that your question was about Column 16, Line 65, because you recited components in 302, is one of the components. And as far as I can tell, since 302 is a component, the implementation and interactions as cited, are the same as described above.

302, specifically, has the only interaction that it has, even if it's not a component that is mentioned, is with the component that is the API component, which is the component 338.

So to me, that reading shows that since 302 is listed and the only component that it has interactions with is the component 338, it means that, basically, Figure 5, the API, could have been allowed to be there.

BY MR. LUMISH:

Q That's not true, right? If you look at Figure 5A and B, the 502 is shown as having interaction directly with scanning service 510?

A As I said, sir, if you take a look at Figure 3 --

Q No, I'm asking about Figure 5. I'm asking about Figure 5.

A Again, no matter how you read this, it showed that the interactions of different components are freely interchangeable among the figures.

So even if it says that Figure 5 is -- Figure 3, there is a direct access, not through an API, but also shows that the same type of -- the same type of interaction is implied the other way around, because they are mentioned many, many times.

Phrases that's in an embodiment are not necessarily intended to refer to the same embodiment or any particular embodiment described, shows to me that these concepts are

interchangeable among these figures.

The same way that you can go from Figure 5 to Figure 3, I see the same thing applied from Figure 3 to Figure 5.

Q So Figure 5, the scanning service, is 510, right?

A Figure 3, the scanning service is 510.

Q And in Figure 3, it's 310, right?

A Just give me one second. I'm quickly going back and forth.

Q Yes, I understand.

A It is 310, sir, yes.

Q In Column 16 at the bottom there that we've been looking at, it never says scanning service 310 is the same in its interactions or implementation as scanning service 510, right?

That's not included in those reference numerals of things that have the same implementations and interactions?

A You are correct, sir. It's not included.

But at the same time, these embodiments are not, as I said, exhaustive, right. That's an

example.

If I'm reading -- the reports I'm reading it, it's not very hard to draw the conclusion that, you know, the API is present in Figure 3 --

Q The API id -- go ahead. I'm sorry. I'm sorry to cut you off.

A I haven't finished.

Q I apologize.

A As I sit here, it mentions 302 that is a connection with an API. That same API could have been used in Figure A and B, but there is nothing preventing that component from actually being instantiated here, as far as I can tell.

But that only reinforces my belief that components and interactions as implementations, as it's cited here, can be potentially transported from one figure to the other.

Q Okay. I understand your testimony that it could potentially be, and it's nothing precluding it.

But there is no actual discussion anywhere in Veselov Exhibit 1007 of using an API in

discussing Figures 5A and 5B; isn't that true?

A Again, the discussion here that we just discussed about on Column 16, starting from Line 56 all the way to 67, shows that the figures and the components are construed as a template to have components communicate and interact, and the implementations and interactions are not necessarily something that is fixed.

It's based on -- it's just examples and embodiments. And, in fact, as I pointed out, Column 24, 54 all the way to 25, Line 2 in Veselov noticed in phrases such as an embodiment are not necessarily intended to refer to the same embodiment or to any particular embodiment described.

To me, these are examples, and you can use these examples, and a POSA would have used those examples in a manner to create the type of environment that he wanted and reference the APIs, cloud APIs or any APIs that were available to him.

They are not meant to be exhaustive examples here.

MR. LUMISH: Object to the nonresponsiveness. I didn't discuss about any of that.

BY MR. LUMISH:

Q I just want to know if you and I have a dispute, if we disagree on what's actually written down. I understand everything you're saying you keep saying it over and over again. Your points are made, that you think these are nonexclusive, non-exhaustive examples, et cetera. That's not what I asked you, though.

A I think --

Q Wait, wait. All I'm asking you, Doctor, is do you dispute that in describing Figures A and B, Veselov Exhibit 1007 never itself says that there is an API in that embodiment?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I just want to point out that you mention Figures A and B. Are you referring to Figures 5A and B?

BY MR. LUMISH:

Q Yes.
A You mentioned only A and B, sir.
Q Then I made a mistake. Okay. So I'll ask you again, then, Doctor, but please answer my question.
I want to know if you dispute that in describing Figures 5A and B, Veselov Exhibit 1007 never itself says that there is an API in that embodiment?
MR. ARGENTI: Objection. Form.
BY THE WITNESS:
A While it is true, I want to point out that in other parts of Veselov, and in Veselov in general, that -- in that section, it shows that different components and interactions are interchangeably applied between the different embodiments, and that the embodiments themselves are not exhaustive.
MR. LUMISH: Object to the nonresponsiveness.
BY MR. LUMISH:
Q Do you dispute that Veselov itself,

Exhibit 1007, never says that there is a computer resource service provider in exhibit -- in the embodiment shown in Figures 5A and B?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A While I agree that this is the case for the specific phrase, I want to repeat that these are examples that should not be used in isolation to describe the embodiments in their totality. And in many cases in the spec, it clearly states that the specific components and interactions are meant to be used interchangeably across different embodiments.

THE REPORTER: Counsel, can we take a break, please?

MR. LUMISH: Sure. Why don't we do that? Five or ten minutes?

MR. ARGENTI: Let's do ten minutes. We'll come back at halfway to the hour.

MR. LUMISH: That works for me.

(A recess was had.)

BY MR. LUMISH:

Q Dr. Stavrou, you had pointed me to Paragraph 125 of your declaration, Exhibit 1002 from the '031.

Can you go back to that paragraph for me, please? It's on Page 107 or begins on Page 107.

A Give me a moment. Paragraph 124 from my declaration, Page 107, 051 declaration.

Q Paragraph 125.

A I'm sorry. I'm on -- yes.

Q I just want to point you to the citations there because I'm going to ask you about them. So you'll see you cite Column 5, Lines 1 through 5 of Veselov, at the top of Page 108, and then you cite to Column 5, Lines 59 through 60, four lines down, and you cite to Column 5, Lines 41 through 59, maybe five lines below that.

Do you see those citations?

A I do.

Q If you jump ahead to Paragraph 130 on Page 112, in the bottom right corner, the very last thing on that page, you cite to Column 4, Lines 19 through 48. I'm going to ask you about

those citations of yours from Veselov. And I'll just go in order of the citations. So feel free to look at your report for the context you need, but if you could turn to Veselov Exhibit 1007, Column 4 beginning at Line 19, please. When have you that --

A I have it in front of me, but I need to see where you referred that in my declaration. I'm grabbing, like, two documents here.

Q Sure. I understand. You cited to, and I'll just ask you to read to yourself, and tell me when you're done, Column 4, Line 19 through Line 48.

A I apologize. Where do you see that, which page?

Q In your declaration?

A Yes, sir.

Q Page 112.

A 112. I'm sorry.

Q The seventh line down, the very bottom line of that page on Paragraph 130, seventh line of that paragraph, the very last thing on that

page.

A I see that.

Q So what I'm asking you to do now, Doctor, is to read Column 4, Line 19 through 48, to yourself, from Veselov Exhibit 1007, and let me know when you're done.

A I'm done reading.

Q This passage from Column 4 of Veselov at Lines 33 through -- 32, I should say, through 34 refers to API 120.

Do you see that at Line 32?

A I do see that, yes, sir.

Q It describes API 120 as "Through which a user device 102 can connect to one or more virtual computing environments of the computing resource provider."

Do you see that?

A I do.

Q You do. It does not describe anywhere in the passage I asked you to read on Column 4, the API being used to locate a virtual disk, correct?

A Again, I want to point out that it further

continues, it says: "For example, the API 120 may be a web-based interface implementing a web server on a computing resource provider."

And then, also, it continues to say: "Enabling the user of the user device to provide settings, commands, software packages and other user input to the computer resource service provider, such user input may be used to configure which are computing environments of the computing initial service provider 104 that are associated with the user such that a user account is required to provide credentials," and it goes on, "as authorized to modify its virtual computing environments and virtual resource allocations by the API 120."

Q Right. So you just read through approximately Line 47 of Column 4, right?

A Which is exactly what I recite, I believe.

Q I'm just asking what you read, Doctor.

A I believe so, yes.

Q I'm just trying to have a clear record here. So you were just reading through Line 47 of

Column 4?

A 48, sir.

Q Okay. My question is: Nothing in Column 4, beginning at Lines 19 and going all the way through 48, describes an API that's used to locate a virtual disk.

Is that true or false?

A While the specific passage does not talk about a specific functionality, it refers to an application -- an environment application program interface. And many of those, as I cite in my -- in Paragraph 130 of my declaration, many of those give functionality that were also including the resource management process. It was including APIs that were connecting to hosting the user resource and maybe configure virtual computing environments.

Many of those, a POSA would have understood that routine would involve the ability to identify and locate virtual resources.

Q Nothing in Column 4, Lines 19 through 48 of Veselov Exhibit 1007 describes an API being

used to identify or to query a virtual disk.

Isn't that true?

A And I will repeat my answer. While that is true, it is not specifically mentioned, the wording that you used. It is clearly talking about an application programming interface, a similar, for example, to the ones that were used at the time to -- and talking about virtual computing environments and the computing resources, provisioning.

A POSA would have understood, given the different computing -- the different virtualization systems and services, that this was part of the environment API to be able to provide and locate -- provide and locate resources, virtual resources.

And, actually, it mentions specifically to configure, which are computing environments of the computing resource service provider, that are associated with a user, and it goes on.

I don't want to recite everything. I don't want to take more of our time. It says

also, "to request and manage allocation of physical resources of computing devices. For example, server computers 102, as virtual computing resources, provided by network accessible services."

So to me when it talks about allocation of physical resources. Some of these physical resources can be virtual disk, for instance.

Q Can we at least agree, Doctor, that virtual disks are never actually referenced at all in Column 4, Lines 19 through 48?

That phrase isn't used?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Again, I will repeat that while the specific excerpts of the Veselov specification in Column 4, 19, all the way through -- sorry -- to 48, does not contain the phrase "virtual disk."

It does not automatically mean that APIs were not used to identify or provision virtual disks or even as part of the virtual resources.

In fact, I can read it clearly from this

specific -- it says -- I'm sorry. Let me recite it.

"To request and manage allocation of physical resources of computing devices, for example, e.g., server computes 142, as virtual computing resources provided by a network accessible services system, allocated within a virtual computing environment implemented by the computing resource service provider 104."

Q Let's turn to the second citation of yours that I told you I was going to address. It's Column 5, Lines 1 through 8. You can go to that, please, in Veselov Exhibit 1007, and read those lines to yourself.

And let me know when you're done, please.

MR. LUMISH: You're a little more muted than you were before, Doctor. Did something change with your microphone?

THE WITNESS: It did not. Can you guys hear me now?

MR. ARGENTI: I think it just got better.

Try it again.

THE WITNESS: I think it might be the network.

BY THE WITNESS:

A My question was, can you point me to my declaration where I recite that specific Veselov excerpt?

BY MR. LUMISH:

Q I'm losing so much time, Doctor. Can you just read Column 5, Lines 1 through 8 of Veselov Exhibit 1007 to yourself.

And let me know when you're done.

A I read that.

Q The API that's described here is described as something through which "the scanning service may access the computing resource service provider," right? It says it does that "via the API 120"?

A It says that, but it continues: "...or any other associated virtual computing environments and all computing resources."

Q Right. So it's talking about accessing those resources, correct?

A It says "may access."
Q Via the API?
A It is an option, yes.
Q And it talks, in the next sentence, about the scanning service using the API to provide user interfaces, correct?
A It says: "In some embodiments." It prefaces in some embodiments the scanning service 110 may use the API 120 to provide user interface to the user device 102.
Q Nothing in Column 5, Lines 1 through 8 of Veselov Exhibit 1007 describes using an API to locate or identify or query a virtual disk.
Is that true or false?
A While that specific excerpt in Column 5 does not have a reference to a virtual disk or even a virtual machine, it is clear that it's using API 120 or another API, as I explain in various places in my declaration, and I'm repeating here.
It was routinely cloud APIs and infrastructure APIs and distributor computing

APIs were used routinely to provision, identify and report locations of virtual assets, including virtual disks.

The fact that it mentions another API here, it allows -- it mentions, actually, in many places within the patent, it shows that there were other APIs that could have been employed and available at the time.

So a POSA would have understood that these APIs would have been available to the system.

BY MR. LUMISH:

Q I'm not sure where that answer leaves me.

Do you dispute that Column 5, Lines 1 through 8 of Veselov Exhibit 1007 never mentions using an API to locate, identify or query a virtual disk?

Do you dispute that that's true?

A I will repeat my answer because it was clear.

While the specific section does not have any reference to any virtual disks or virtual machines, it is clear that use of API here is used

in many different ways.

And it has APIs that are not necessarily the ones that are in API 120. It talks about another API. It was common at that time that other APIs were provided as part of cloud providers, infrastructure providers, distributed computing environments and virtualization layers that would have allowed the location of virtual asset, including a virtual disk.

Q Can you look at Column 5, beginning at Line 41, and read to yourself through Line 60, please.

We're still on Veselov Exhibit 1007, for the record?

A You want me to read from 41 up to what?

Q Column 5, Line 41 to 60.

A I'm done.

Q There is no reference to an API in that section at all, true?

A Give me one second. I think that is right. You're asking about the virtualization, Layer 144: "May also receive and process API from

devices or services."

Q I'm sorry. Where are you reading from, please?

A Column 5.

Q Where?

A Column 5, 59.

Q Okay. You're right. I apologize. So it does appear in 59. I was looking through 58.

A You're asking through 60.

Q In Column 5, Lines 41 through 60, the reference you just made to 59 and 60, that's the only mention of an API, right?

A I think that it's a clear mention of API in view of what it says also before. Again, it says that --

Q Can you just let me ask my question? That's the reference to API in that section, right?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I see one.

BY MR. LUMISH:

Q That's all I asked you. That's the only reference to an API in Column 5, Lines 41 through 60; is that true?

MR. ARGENTI: And he was giving you his answer, and you cut him off.

MR. LUMISH: He wasn't, because it's a real simple question.

BY THE WITNESS:

A I was not able to finish, sir.

BY MR. LUMISH:

Q Go ahead and finish, but please answer my question, not some other question that I didn't ask.

A I think I pointed out that in Column 5, Line 59, all the way to 60, it talks about the virtualization layer may also receive and process API calls from external devices or services.

And I want to point out, also, that it's in relation, after you made me read the entire paragraph, to virtualization processes that, basically, include virtualized resources, which includes virtual disks.

Q So the only reference to an API in Column 5, 141 through 60, is the one at Line 60, where it's describing receiving and processing API calls from external services or devices, right?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I believe in that specific excerpt, I see that there is a mention of an API call from external device or services.

BY MR. LUMISH:

Q There is no discussion or disclosure in Column 5, Lines 41 through 60, of an API being used to locate or identify or query a virtual disk.

And, again, just for the record, we're on Exhibit 1007 Veselov?

A I don't -- I understand that you read this text verbally, and I understand where the confusion might be from, but if you read it more carefully, you will see it says: "For example, the virtualization layer enable a particular virtual machine to access physical hardware on the

server computer through virtual device drivers or other executable code on the virtual machine. The virtualization layer may include hypervisor or virtualization software and hardware.

"The virtualization layer may also include an instance of an operating system," but it also goes, "or other computing resources executing on the server computer."

So to me it says the virtualization layer may be any device, software or firmware used for providing virtual computing platform and virtualized computing resources for the virtual machine.

To me, the fact that you have an API that is managing virtual computing resources, such as for the virtual machine, as we discussed, such as a virtual disk, which is part of the virtualized resources, allows the virtual layer -- and I have many examples in my declaration of such APIs -- to access the virtual -- locate, report and access the virtual disk.

So while there is no explicit mention of a

virtual disk, there is not explicit mention of other things that are all virtual resources.

It is clear that the virtualization layer is providing an API from external -- to external and API process, API call from external device or services, allowed to perform such activities, as described in this specific column.

Q The text you were just reading to me refers to physical hardware, right, not virtual?

A But we have agreed --

Q Wait, wait, wait. Answer my question, please, sir.

A No. It's not referring only to physical hardware. It refers also to physical hardware. It talks about software, too.

Q But it doesn't refer to virtual disks, is the question.

A As I'm trying to explain over and over again, virtual disks are a virtual resource. So you don't have to be exhaustive and explicit about every specific virtual resource that is related to a virtual machine. It says clearly, it's my

understanding and maybe I'm reading, virtualized computing resources for the virtual machine. It says may be any device, any device, software or firmware used for providing virtual computing platform and virtualized computing resources for the virtual machine.

Q Where are you reading from, please?

A I'm reading from Column 5, Line 55. It says: "The virtualization layer may be any device, software or firmware used for providing a virtual computing platform and/or virtualized computing resources for the virtual machine 112 and/or component thereof."

So you would agree with me that virtual disk is a component or a resource for the virtual machine, right?

Q So that section you just read, Doctor, doesn't say anything about identifying or locating or querying any computer resource through an API, does it?

A So I want to point out that, again, it was --

Q Can you answer my question before you point something else out?

A I'm trying to answer your question, but you're cutting me off. I can stop if you'd like.

Q I'd like you to answer my question. You are going to point something out, but answer my question first with a yes or no.

MR. ARGENTI: He is answering your question. Please stop cutting the witness off.

BY THE WITNESS:

A I mean, if you would like me to answer a specific way, sir, you should tell me, but if you want me to answer, you have to finish the question.

BY MR. LUMISH:

Q Okay. So let me withdraw it, and I'll tell you how I want you to answer it. I'd like you to answer it with a yes or no.

The section you just read from Column 5, Lines 55 through 58 or 59, I should say, doesn't refer to querying or locating or identifying anything you call a computer resource via API.

Is that true or false?

A Yes. But it also does not preclude the use of API to perform these activities. In fact, it reinforces my belief and a POSA's belief that this would be the case because it was routinely used. Virtualization layers were routinely providing these services as part of their location and attachment of this virtual resources to virtual machines, that this was routinely present at the time of the invention, the APIs and the ability of either cloud systems or virtualization layers to provide these APIs to have that ability to provide that information.

Q Okay. Let me shift gears to a different issue and ask you to look at Paragraph 149, 149 of your '031 declaration, Exhibit 1002. It's on Page 123.

A I'm there.

Q This is a really simple question, I hope. At the end of the first sentence of Paragraph 149 you say something about Budko, B-u-d-k-o, and I just want to know if that's a typo.

A Well, I believe it is a typo, but it doesn't refer to the exhibit, but I think it's an exhibit.

Q You think Budko is an exhibit?

A I believe so.

Q I thought maybe you just were talking about the wrong document there. So let me get to what I think is more relevant here.

So in Paragraph 149 --

A It can be the case that it has been -- and I apologize. I didn't copy it myself, because it doesn't even have a reference, which means that it's definitely a typo. So I cannot tell you immediately. I believe this one -- give me one second, if you don't mind. I just want to answer your question.

Q I'm going to move on. It's okay.

A If you want to move on, that's your right.

Q So staying with Paragraph 149.

A All right. 149, sir, I'm there.

Q You -- at the bottom line of Page 123, you state: "Veselov does not expressly describe the

state of the VM at the time the snapshot is captured with the exception of one optional embodiment in which the target VM actively runs while the snapshot is taken so that its activity and network traffic can be captured."

And then you cite Veselov at Column 15, Lines 50 through 57 and Column 16, Lines 2 through 10.

Do you see that?

A That's correct, sir.

Q It's true that the only embodiment that's actually described that lays out the state of the virtual machine in Veselov is this one where it's describing it as actively running when the snapshot is taken. In other words, just talking what you said there?

A Yes, I believe that's correct.

Q There is no reference in Veselov Exhibit 1007 to a virtual machine being offline when the snapshot is taken, true?

A I believe that is correct.

Q There is no discussion in Veselov of ever

just shutting off a virtual machine or taking it offline?

A I believe that the state of the virtual machine was not relevant, and that's why there was no mention of the state of the relevant machine, other than this option of the embodiment, which the machine is active.

Q Let me ask you to go back to Veselov Column 2, please.

A I apologize. Give me just one second. I'm switching gears. I'm there, sir.

Q So I'm going to ask you about in this line of questioning, Lines 46 through 67 of Column 2. So if you want to just read those to yourself, I'd appreciate it. Just let me know when you're done.

A Can you please read the column, if you don't -- the lines, please.

Q Certainly. 1007, Veselov, Column 2, Lines 46 through 67. It really looks like -- maybe just start at 41 and get the entire section there, the entire couple of paragraphs.

A I read it.

Q So this is describing security assessments in general, including in the prior art, right?

A It appears that it is that discussion, yes.

Q And in discussing what some security assessments may involve, you'll see at Column 2, Line 47, Veselov says: "It may involve sending requests and/or other information to one or more targets, such as a virtual machine."

And it goes on from there, right?

A Correct.

Q If you're going to do a security assessment by sending a request to a target, that target needs to be active and online, right?

A So, again, this is an example, I believe, and it's not exhaustive, but it also mentions a software application service -- a server. It was routinely -- you know, these virtual machines were not running on their own, right? In a cloud provider or distributing system, there would be, in many cases, a cloud computing service or a service that would take responsibility of the

virtual machine.

That service might have been active on its own, but the virtual machine state might have been in different forms. I mean, it doesn't talk about the virtual machine state here.

The fact that something that would have been involved in sending a request, it really depends who would be consuming those requests. So here, it's not -- why it's inclusive of a virtual machine, it refers to other things like, for example, a server or a service.

Q I'm asking about the virtual machine, right? Here it's talking about, as one example, and I'm not saying its exhaustive, that you can send requests or other information to a virtual machine as a target, right?

A It says exactly, involve sending requests and/or other information. It doesn't necessarily talks about request. It has or other information.

Q I understand. I said that.

A I apologize, but you are trying to associate the sending requests to an activity, and

it also talks about other information. It doesn't necessarily mean it's a request.

Q All I've done right now, Doctor, is ask you if that's right, that this section describes sending a request or other information to a target in the form of a virtual machine as part of a security assessment, not as one example, non-exhaustive.

A It is one example. It's non-exhaustive, but I want to add that there is also the option of a service or a server.

Q I'm not asking about that yet.

A All right.

Q In the example of sending a request or other information to a virtual machine as the target, that virtual machine would need to be active and online for this type of security assessment to work; isn't that true?

A And, again, I want to point out that's not exactly what is being described here. Here it describes a set of options; one of them being a virtual machine, and one of the potential options,

out of two, it says either sending a request or other information, which is not defining what this other information would be, is to be to one or more targets such as virtual machines, the connected -- I mean, the passage is there, including service or server.

So while someone can draw a conclusion that if it was the virtual machine, that virtual machine might have indeed be -- to be active for the snapshot to take place. I want to point out that in many cases, services, not virtual machines, were responsible of taking snapshots of virtual machines.

So it's unclear to me if that specifically refers to a virtual machine, this passage. It talks about virtual machines as an option, as an example, but not exclusively or limited to that specific option.

MR. LUMISH: Object to the nonresponsiveness.

BY MR. LUMISH:

Q I didn't -- I'm asking you about this

example, and you're answering about other examples.

A But this example has many different --

Q I'm not done. This section, first of all, doesn't mention snapshots, right? You put snapshot in your answer, but there is no snapshot in this part of Column 2.

A I don't see any mention of snapshot. You are correct.

Q I'm not asking about services. I'm not asking about servers. I'm asking about the example, which is non-exhaustive and nonexclusive, here of sending information or requests to a virtual machine.

And you still haven't answered my question, which is: Do you dispute that to do that, the virtual machine would need to be active and online?

A I want to point out -- yes, but, again, the specific section is --

Q You said "yes." So yes, that you dispute it?

A Yes, I don't dispute what you just said, but, and I apologize if it was taken as an affirmation of my dispute with you because there is no dispute.

Yes, it does talk the virtual machine has to be active, but as I pointed out, that's not the only option that is listed here.

Q I understand that. You've said "I repeatedly." I've never told you it was the only option. I'm not trying to argue with you that it's the only option, and I'm not trying to suggest that it's the only option.

Now, moving down further in this passage, Column 2, you'll see at Line 50, and you can read around it for context, but it refers to having recording how the one or more targets respond.

Do you see that?

A I do.

Q To record how a target responds, that target would have to be online and active, true?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I don't know because responsiveness would have been a response, for example. I don't know what the response corresponds to. It doesn't say it has to be an active response. It might be the fact that it's unresponsive.

BY MR. LUMISH:

Q I see. So a response to you, could be no response?

A That's one form. It says how. It doesn't say about what, recorded how.

Q It doesn't say whether, right? It doesn't say whether it responded. It says how it responded?

A Correct.

Q And your testimony is that may be done by an offline inactive target?

A Again, the recording of how the one or more targets is formed is not necessarily done by -- it's done by something different, right? It's not talking about here, but the response is coming from different things, potentially, the virtual machine or service.

It says how the one or more targets respond. The target is referring to the virtual machine or the service or all the other things that we talked about.

Q Right. I'm not sure where that leaves us.

Is your testimony -- let me finish.

Is it your testimony or not that a target could respond even though it's inactive and offline -- or offline?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A No. I did not say that the target can respond while it's online, but what is being asked here is recording how the one or more targets respond. And responsiveness might be one form of response of recording.

BY MR. LUMISH:

Q Now, in Line 55, it talks about the assessment being evaluated -- withdrawn. I'm sorry. That's the wrong one.

Oh, I see. Just further on that same line, it starts and then goes down to Line 53. It

describes comparing the response data to security rules to determine whether the target is vulnerable.

Is it your testimony that you could compare response data from an inactive or offline target?

A I don't know specifically an empty response or a nonresponse would be valid in this case. I would assume that it might or might not be.

Comparing the response data to security rules, if it's an empty response, again, I don't know how the system would behave, but if it was a requirement for the response to be -- it doesn't say that there is a requirement for the response data to be meaningful or to be not empty.

So I don't know how to answer your question. To me, it's obvious that it can be either way. It might not have been meaningful, if it was not -- I don't know, actually. It depends on how the system is set up to deal with unresponsiveness, I guess.

Q So if you turn to Column 3, please, beginning at Line 5.

A I'm there.

Q I'll just read this long sentence into the record -- or two sentences. Beginning at Column 5 and going through Line 14, Veselov Exhibit 1007 says: "Additionally, in some cases, the service provider, i.e., the entity operating the infrastructure used to run the service or distributed application, may monitor the use of computing resources, a security assessment executed using the computing resources may be costly monetarily as well as requiring an extended period of downtime.

"Further exacerbating these problems, some security assessments may evaluate targets or connections that exist only within a virtual computing environment, i.e., a virtual network effectuated by the service provider," and it goes on from there.

I really wanted to ask you about Lines 8 and 9, wherein describing this type of security

assessment, again, as an example, not as an exhaustive or exclusive approach, it's talking about monitoring the use of computing resources and an assessment using the computing resources, having some downsides in cost, right?

A It does says "may monitor." It doesn't say that it exclusively monitors, but it says "may monitor." It doesn't say exactly.

Q And baked into my question, it wasn't exclusive. And so for this type of assessment, where you monitor the use of computing resources or use the computing resources, can we agree the target has to be active and online?

A I would disagree with you, and I will give you an example where this is not the case.

You might be allocating resources. For example, you might be allocating a virtual disk, and that incurs cost. So in a cloud environment, you might have even powered off virtual machines that they do hear CPU activity or suspended virtual machines they have stayed.

Unfortunately for -- we pay -- in virtual

resources, we pay based on the user individual resources in many cases. It's typical to pay, for example, for storage, separately than we pay for CPU, separately than we pay for memory. It's typical.

So a resource can be inactive in one respect, for example, in terms of active network or even active state. But still it incurs cost as part of its presence in the cloud system as part of, for example, the virtual disk allocation because you consume storage.

Q I don't understand that, but that's probably my fault, not yours.

How would -- are you saying -- withdrawn.

Are you saying that a security assessment could use the virtual machine or a virtual disk in doing a security assessment, even though that virtual machine or virtual disk were powered off?

A If the original disk is powered off or in a suspended state, it doesn't mean that you cannot utilize or access the resources that it is consuming at this state, at the powered-off state.

So it doesn't -- and that incurs costs, so it means that the virtual machine is powered off in terms of processing, and it's not processing things.

And you might not be paying for, for example, a CPU or memory allocation because it's not active, but it doesn't mean that you cannot access the inactive resources, which is the disk that forms the analysis on a snapshot, for example, or directly on a virtual disk.

Not that that is the case here. I'm just giving you an example so we are on the same page.

Q But are you saying that would be monitoring the use of a virtual disk or a virtual machine, that you described?

A I'm describing the cost that you asked about. You asked me how can there be cost elements if there --

Q That wasn't my question, Doctor. I'm asking you whether you could use or monitor the use of a virtual disk or virtual machine if that virtual disk or virtual machine were powered off?

A In that case, the monitoring system might not give you an indication of something happening, but it doesn't mean -- again, it's made here, and it's not an exclusive, as we discussed.

So it may monitor the use. I don't know exactly which computer resources they are talking about. For example, that might refer how the security assessment is actually using the computing resources and incurring the cost.

Because it talks about, in the next sentence, about executing using the computing resources, may be costly monetarily, which means that as you perform the security assessment, you are incurring costs. And I don't know.

The use of the computing resources, it can refer to two different things. It can be if you're accessing those inactive resources or to the use of the computing resources themselves. It can go both ways. So I don't know exactly what it refers to.

Q But my question told you what it refers to. My question is narrowing the computer

resources to the virtual machine or virtual disks, and I'm asking you specifically about those computing resources and whether it's your testimony that a security assessment could monitor the use of a virtual machine or a virtual disk or use a virtual machine or a virtual disk if that virtual machine or virtual disk were powered off?

A And, again, are you referring to the assessment virtual machine or are you referring to the original virtual machines that we are trying to assess? Because in Veselov, we have two types of virtual machines. We have virtual machines that -- as part of the assessing the virtual environment. So I don't know what it refers to.

Which virtual machines are you trying to refer to here? If you can explain that to me.

Q My question was clear, but maybe not.

I'm talking about doing a security assessment of a particular virtual machine or a particular virtual disk, not some other one, not something you're going to call an assessment virtual machine or assessment virtual disk.

So the question, I'll ask it again, is: Is it your testimony today that you could perform a computer assessment of the virtual machine or a virtual disk or you could use a virtual machine or a virtual disk or monitor the use of a virtual machine or a virtual disk as part of that security assessment if the virtual machine or virtual disk was powered off?

A I'm trying to answer your question, but I don't see how it's connected to the passage here. It says clearly here that: "May monitor the use of computing resources," but it does not associate it to the security assessment or a virtual machine. It says: "A security assessment executed using the computing resources may be costly monetarily."

So if you connect the two sentences, mainly, the monitor of the use of the computing resources might refer to the security assessment process executed using the computing resources, and that can mean different things.

It doesn't have to have the virtual

machine powered on. It might access that through the disks, and the use of computing resources might refer to the accessing of these virtual disks as part of the security assessment.

So I need to understand exactly what you're asking me.

Q I don't know that I can ask it any better. I'm going to go to Column 12, please, Line 21.

A I'm there.

Q You'll see there it's discussing the Figure 3A embodiment of Veselov?

A It starts at 21, but it goes on.

Q I'm going to get you there. If you could read that discussion, so basically that whole paragraph, Column 12, Line 21 through 43. Just read it to yourself, and let me know when you're done, please.

A I did read it. Yes, sir, I did read it.

Q I'm sorry, I'm just catching up to you.

A I'm sorry. I didn't know if my voice was not passing through.

Q No, you were fine. I'm multitasking here,

trying to be efficient.

So the discussion now of Figure 3A refers to the assessment, and this is at Line 24, being performed "without impacting the customer's virtual machine, which may be servicing requests from its customers or performing other useful work."

Do you see that?

A I do, sir.

Q So can we agree that the virtual machine to be servicing requests or performing work is powered on and active?

A Again, I'm reading, and I might be wrong, but it says may be servicing requests. So, again, I want to reference that it's not exclusive. If it's in the case of the two servicing requests, it probably would be active. I cannot see why not.

But, again, this is not -- this is the beginning of the paragraph says "in some embodiments," and later on it says "may be servicing." So I want to preface it that it's not something that is exclusive here. It's just an

example.

Q My question never suggested it was exclusive. I'm just asking you if you agree, and it sounds like you do, that for this example where the virtual machine is servicing requests and performing work, it's online and active; it's a powered on, working virtual machine?

MR. ARGENTI: Objection. Form, foundation.

BY THE WITNESS:

A Again, I will repeat my answer. This is one embodiment, and if indeed, because it says may, the virtual machine service request, it has to be active.

Q And in columns -- that same column, I should say, Lines 29 through 30, it refers to how the assessment might "degrade operation of the virtual machine."

Do you see that?

A I do see the degrade operation. It says may degrade operation, yes.

Q And in that example, not exclusive, it's

due to have operation, the virtual machine is operating meaning that it's active and powered on, right?

A If it is -- in that specific nonexclusive example, it talks about the condition of operation, which will assume an active virtual machine, otherwise -- because it assumes operations, that's correct.

Q If you turn to Column 15 for me, please.

A I'm there, sir.

Q There is a paragraph that starts at the bottom there on Line 60, and it carries on to Column 60, Line 14. If you would read that to yourself, and let me know when you're done, please.

A I'm done, sir.

Q Okay. This refers to intercepting traffic that's heading to what's called the target virtual machine, you'll see that on Column 15, Lines 65 and 66, and then stimulating activities as it's put in the assessment virtual machine, right?

A Agreed.

Q And the activity on the assessment virtual machine is supposed to be "identical or substantially identical activity as what would have been seen had that traffic made it to the target virtual machine," right?

A Again, in that specific embodiment and example, and, again, it's not limiting in any way. I do see that, yes.

Q And so can we agree that to be sending traffic to the target virtual machine assumes that the target virtual machine is powered on and active?

A Again, I don't see how it talks about responsiveness of the target virtual machine. It says it intercepts traffic to the target virtual machine and duplicated the intercepted traffic to the assessment virtual machine. It doesn't say that there is a response from the target virtual machine. It might be while it is intercepted. The fact that it's intercepted, to me, doesn't automatically speak to the fact that there is a response from the target virtual machine.

It looks to me that it's basically replicated or duplicated, I believe is the correct word here, and to the assessment virtual machine. It says: "Duplicated intercepted traffic to the assessment virtual machine."

It doesn't say -- it says to intercept traffic to the target virtual machine. It doesn't say from the target virtual machine.

Q And I didn't suggest that it did.

A Okay. I just want to make sure that we're on the same page.

Q Well, can we agree at least, Doctor, that when it's talking about simulating substantially identical activity while it's being performed, that activity is being performed, in this instance, in this example, on the assessment virtual machine, it's relying on what the activity would have been on the target virtual machine had that traffic reached it?

A Again, I think that you are referring to the assessment virtual machine, correct?

Q Yes. The activity -- I'll ask it again

just to be clear because I think I referred to both.

That by discussing the -- using the activity on the assessment virtual machine as what would have been substantially identical activity on the target virtual machine, the system's relying upon that activity in order to do its security assessment?

A I want to stop you here because the traffic is not necessarily being responded to or it doesn't -- it doesn't say anything in that segment that the target machine is active and responding. It only says that the traffic is intercepted to the target virtual machine and duplicated, the intercepted traffic to the assessment virtual machine.

So the activity -- to simulate activity in the assessment virtual machine specifically. The substantially identical activity talks about the assessment virtual machine being active, but not necessarily the target virtual machine.

Q That's not what I asked. You're answering

something I'm not asking you, and I don't disagree with you.

My question is different, which is: What this embodiment or example is describing is relying upon the activity that the target virtual machine would have had had that traffic that's described as being intercepted reached it, and it's doing that by then using that traffic and gauging the activity on what's called the assessment virtual machine?

A We are in agreement about that.

Q That's all I was asking. If you turn to Column 17, please. I'm going to put you in the end of -- or the paragraph, so read what you want for context, read please Column 17, Line 57 through 67 to yourself, and let me know when you're done.

A All the way to 67 from -- can I start from 9, just to make sure I have all the context?

Q I mean, that's an additional paragraph I'm not even asking you about and I don't think was in your cite, but read whatever you want for context.

And let me just tell you exactly what I'm going to ask you, so you can read what you need to, to answer me.

Let me point you to Column 17, Line 60 and then Line 63. You'll see references there to the target virtual machine 512A, being executing and launching the target virtual machine 512A on 63.

I want to ask you about those and whether you dispute that that's describing the target virtual machine of the Figure 5A, B embodiment as being active, because it's both executing and launched. So whatever context you need to answer that question, Doctor.

A I promise I will try to be quick. Just give me, like, one minute.

Q That's okay. Take your time. I just wanted to make sure you knew what I was getting at.

A Thank you for that because it will save me time.

I read what you mentioned, yes.

Q Thank you.

First of all, maybe just take it in pieces here. First of all, can we agree that Column 17, Lines 57 through 67, is referring to the Figures 5A and B embodiment of the Veselov patent, Exhibit 1007?

A I believe it talks about specifically for Figure B.

Q 5B, fair enough. So it's discussing 5B.

A Right.

Q And it's describing the target virtual machine as executing, right, on Line 61?

A I do see that, yes.

Q And it's referring to launching the target machine on Line 63?

A In this specific embodiment of Figure 5B, does talk about that, yes.

Q Can we agree, Doctor, that the embodiment in 5B, and not as a limiting example, but it is describing the virtual machine as being an active one because it's both launched and executing?

A I would agree with that, yes.

Q I'm going to start back at the beginning

of Veselov now, on a different line of discussion.

So I'm going to send you back to Column 2. If you look at Column 2, beginning at Line 56 through 63, I'm going to read this into the record.

So here, Veselov says: "Performing a robust security assessment on a target computing device, such as a server, may reduce the target computing device's capabilities. For example, a server that is the target of a security assessment may not be capable of responding to a client as quickly as normal or may not be capable of providing content as quickly as possible because processor time and memory of the target is used to perform the assessment instead of running its normal workload."

Do you see that?

A I do.

Q Do you understand that this is not exclusive, but this is a description in Veselov of the problem or shortcoming that it says it's trying to overcome?

A I believe it's one of the problems. I think if you continue down the same column, there are other benefits that Veselov is trying to exemplify.

In this specific excerpt that you just quoted, I would agree that this is one of the problems mentioned.

Q And the way it's describing that problem -- and I'm kind of going from the bottom up -- is that security assessments used the processor time and memory of the target to perform the security assessments.

And that takes away from their performance and adds cost; is that fair?

A Again, I want to be very clear. This is one of the potential problems and benefits that Veselov is mentioning. That's correct.

Q Can we agree, Doctor, that if you installed an agent on a server to perform the security assessment, it would do these things.

It would take processor time and memory of the server or the target away from its normal

productive work and dedicate it, at least, for the time it's being run, on the security assessment?

A Not a hundred percent sure. I would need to know what type of system, what type of agent, if that agent would have required a lot of resources, what type of resources. I cannot make that assessment in generality.

Q But you're familiar with agents being installed as part of security systems, right?

A It was one of the techniques used, yes.

Q It was very common to have agents running on the individual targets or in the form of servers or computers that you wanted to monitor for security issues, right?

A I would say it was one of the techniques, yes.

Q When you install an agent on a server or some other target, that agent is going to use the processor of that server or target, right?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Again, I want to say that without knowing

the specifics of the system and how many processors, what type of software, what the agent requirements were, what the type of operations the agents would require, the type of resource consumption, at which times the agents would perform that, I cannot answer generically that question.

Q Well, I'm not asking those details.

Do you dispute that when a target is installed on a server or another -- withdrawn. I'm sorry.

Do you dispute that when an agent is installed on a target or a server as a specific target, that agent will use some of, even if you don't know the amount, some of the processor and some of the memory of that server in order to do its work in monitoring for security vulnerabilities?

A Now, the answer to that question is -- typically, would have been yes, but in all cases, that might not be true because it depends on the type of work that the agent was doing, the

footprint of that agent, the provisioning of the server, the type of work that the server was actually attempting to perform.

And that's why I cannot answer that blankly. While I want to say that typically that would be the case, it's not always the case.

Q Okay. Well, then help me understand. What implementation can you think of or are you aware of where an agent on a server or other computer target, would run to do a security assessment but not use any of the processor or memory of that server or target on which it was installed?

A Again, it has to do with how -- remember, we are talking about virtual machines. It depends if the server -- if the agent would have been installed, where exactly the agent would have been installed.

For example, if the agent was installed outside of the virtual machine, performed, for example, virtual machine inspection, it would not have affected the virtual machine resources.

And that would have allowed someone with software or an agent outside of the virtual machine to perform the assessment. That doesn't automatically mean that an agent would have caused degradation of resources. It really depends on the specific implementation.

Yes, I'm sorry. I answered.

Q I'm not talking about -- let me be really clear.

I'm not talking about installing an agent on a virtual machine. I'm talking about what the patent is saying here, where you would install -- where you're using memory or processor of a target itself, the server -- well, withdrawn. Let me just try it again.

So I'm not asking about installing an agent on a virtual machine. I'm asking about on an actual server or computer, maybe that's going to be the one that runs the virtual machine.

But on the hardware itself, can we agree that in that situation, when you install an agent on the server or the physical target, that agent,

to do its work, is always going to use some of the server or the target's processor and memory?

A I would agree completely. I am agreeing completely with that, but I don't know if that would affect the virtual machine operations because the virtual machine might have a budget of resources that are not affected by the implement -- the installation of the agent on the server.

It really depends on how the server is servicing the virtual machine and what type of resources the virtual machine is requiring.

Q I understand what you're saying. Let me try to say it back to you and tell me if I'm getting what your point is.

Which is if I have a server, for example, that runs virtual machines or a set of them, the agent would use processor and memory from the server, but that may not affect the virtual machines that that server runs?

A That's correct, sir.

Q I understand your testimony, I think.

If I can ask you to look at Column 3, beginning at Line 5, I'm going to go through Line 11 from Veselov Exhibit 1007.

It says here. "Additionally, in some cases, the service provider, i.e., the entity operating the infrastructure used to run the service or distributed application, may monitor the use of computing resources, a security assessment executed using the computer resources may be costly monetarily as well as using an extended period of downtime."

We looked at that sentence before, you recall?

A Yes, sir.

Q Can we agree that this sentence is describing here, again, a problem in the prior art, not exclusive necessarily, but a problem, which is that using the target computer's resources for the security assessment may be costly and require downtime?

A I agree with that, sir, yes.

Q And can we agree that installing an agent

on a server or a computer, could do the same thing here, which is it would use the computer's resources in order to do its job?

A I would say, as we discussed, it would require an agent or an assessment performed in this setting, if it is all within, you know, the computing environment, that you have to pay a cloud computing environment, not a separate environment, it might have incurred cost, yes.

Q Let me ask you to go back to your declaration, please, Doctor.

A Which one?

Q Hang on. Let me make sure I'm getting it to the right spot here. So the '031 declaration, staying with that as my example, so it's Exhibit 1002 from the '031 proceeding, and I'll ask you to look at Paragraph 149 again. I asked you about this paragraph before, but on the citation to Budko issue.

MR. ARGENTI: Before you ask your question, Counsel, are we coming up at a good time for a break sometime soon?

MR. LUMISH: Yes. We could break right now if you'd like.

MR. ARGENTI: It's been over an hour here.

MR. LUMISH: It will help me get organized.

MR. ARGENTI: It's probably time. Should we make it a short one this time, five minutes or ten minutes?

MR. LUMISH: Whatever you all need.

THE WITNESS: Whatever you guys are good with.

MR. ARGENTI: Five minutes then.

MR. LUMISH: Okay. Talk to you soon.

MR. ARGENTI: Thank you.

(A recess was had.)

BY MR. LUMISH:

Q Dr. Stavrou, right before the break, I asked you to look at Paragraph 149 of your declaration, Exhibit 1002 from the '031.

A I see it.

Q Do you have that?

A I have it.

Q So starting at the bottom line of Page 123, fourth line of Paragraph 149 you say: "Veselov does not expressly describe the state of the VM at the time the snapshot is captured" and you go on from there, and I asked you about that sentence before.

A Yes, sir.

Q You agree Veselov doesn't itself describe using an offline or inactive virtual machine?

A I don't think -- I didn't see anywhere -- I believe that it's not expressly talking about, as I mention, the state of virtual machine at all.

Q Right. And so you start this paragraph by referring to the phrase of the virtual machine at rest. You understand that comes from the claims of the Orca patents at issue here, or at least the '031 patent?

A Where are you talking about? I apologize.

Q The very first line of Paragraph 149.

A Yes, I see.

Q You have in quotes there, "of the virtual machine at rest." You understand that's claim

language from the '031 patent, right?

A That is correct, sir. Yes.

Q And do you agree with me that in your report, you take the position Veselov doesn't expressly disclose using a virtual machine at rest?

A It doesn't disclose the state. One of the states, as I mentioned, is at rest. So I mean, take a look at the -- I covered it by saying that the state itself is not described.

Q In Paragraph 150 and elsewhere, but you see in the first sentence of Paragraph 150, you then use Price as another prior art reference in combination with Veselov to provide this at-rest requirement of the claims; is that true?

A That is correct, sir.

Q So I want to ask you a little bit about Price. It's Exhibit 1048, and you should have it on hard copy and it's in the system as well.

A Yes. Give me one second to grab it, okay.

Q Happy to.

A I have it in front of me, sir.

Q You've read Price before, Exhibit 1048?
A Yes, sir.
Q How many times would you say you've read it?
A Again, I would say a few times. It's very hard to give you an exact number because I've read different pieces at different times. And, again, I want to be precise, but a few times would be a fair assessment.
Q Let me ask you to look at Figure 6, please, of Price, Exhibit 1048.
A I see.
Q Figure 6 is a flowchart describing, at least, an example or an embodiment in Price; is that true?
A One embodiment in Price, that's true.
Q And can we agree that at 615 there, that diamond shape, it's describing two alternative paths or approaches that the process may go in?
A It looks like a diagram, yes, that has two options.
Q And those two options are based on whether

the virtual machine is either online or not?

A Yes.

Q And when the virtual machine is online, we go to the right, we follow the yes arrow to Step 620, 625 and 630, right?

A That it looks like, yes.

Q And in that instance when it's online, there is an agent loaded onto the virtual machine, and then there is an assessment done of the virtual machine itself, true?

A That's what it looks like, yeah.

Q And when the answer is no at 615, the machine is not online, we go to Step 635, 640 and 645, true?

A That is correct, sir.

Q And there, instead of analyzing the virtual machine itself, it says you collect machine image data of the virtual machine.

Do you see that?

A I do.

Q And then in the next one, it talks about assessing the virtual machine security using

collected machine image?

A Yes.

Q Let me work on some vocabulary first.

What is an image?

A It really depends on the context, because it talks about machine image here. I would have to look at the patent to understand what is defined as machine image. As you probably noticed, again, different patents and different authors, they use different wording about machine image. So I want to be clear about what the machine image data is in this specific figure I'm citing to.

Q Well, I'd like to know what you understand an image to mean in Price. So tell me what you need to point me to for that, but if you can tell me, please, what you understand the machine image or image to be as that term is used in Price Exhibit 1048.

A If you don't mind, let me see where the Figure 6 talks about the specification. I need to go there. I apologize. My memory is good, but

it's not as good when we have so many exhibits. I apologize. I'm working off of the paper copy.

So as I look at the image data, it talks about such image data can include registry files. So at the very minimum, it would definitely include virtual -- it would definitely include virtual machine state.

Q Where are you, please? Where are you reading from?

A I apologize, sir. I'm on patent -- I'm on the Price. I'm on Page 7, Paragraph 0045.

Q 45.

A "In instances where it is determined 615 that the particular virtual machine is offline, machine image data for the virtual machine can be collected 635 by one or more interfaces of the virtual machine manager. Such image data can include registry files. The virtual machine images can then be read and used to access security of the corresponding virtual machine. Additionally, result data can be collected from the security assessment of the image data."

And it goes on to talk about that this is the permutations, and the figures are not exclusive and the actions cannot be done in sequential order.

So, again, looking at this specific paragraph and the stuff that it's using ordinary products, such as -- it talks about virtual machine managers. And, again, I want to point you to Page 3, Paragraph 21: "Virtual machine managers can also provide multiple interfaces, including interface for providing cloud computing (or infrastructure utilization) as a service," and then, "can include interface application programming interfaces that can provide operations and accessing, including guest management, offline registry access, virtual disk access, and all the features of virtual machines that may be running or accessible through a particular virtualization host environment."

And it goes on to give examples.

To me, at the very minimum -- no. To me, that leaves open the possibilities of having

access to a virtual -- to any virtual asset of the virtual machine, including snapshots or virtual disks or any virtual asset that can be captured through these APIs, because it goes on further to talk about it.

So it's pretty broad, I would say.

Q I may just be misunderstanding because I'm not getting the technology right, but I'm still not sure what you're saying an image is in the context of the Price reference, Exhibit 1048.

A Well, I want to point out -- I'm sorry. I can be more specific. I have to let you ask the question, please.

Q Having gone through the paragraphs and pointing me to the portions you just pointed me to, does that help you tell me better what you understand image -- the machine image or machine image data referred to in Figure 6 of Price to be?

A For me, the fact -- again, it's not exclusive. It's just an example. But the mere use of a virtual machine managers, as is cited in Paragraph 21, gives the option to perform a

security assessment to any virtual asset attached to a virtual machine, because it has a virtual machine prior to that, which means that through the APIs, the security assessment would have been involving any aspect of a virtual machine, including, you know, if the -- the system was suspended, potentially memory, suspended memory and/or virtual disks associated with the virtual machine.

But again, I'm not trying to be exhaustive here, because the patent itself is not -- it doesn't -- it talks about the process and, again, based on what I'm reading, the machine image includes different things.

It can include anything that basically is accessible to the virtual machine manager.

Q Let's talk about Price and the big picture of your opinions.

As we discussed, you combine it with Veselov for the at-rest requirements in the '031 patent, right?

A I combine Veselov and Price, yes.

Q And for the combination of Veselov and Price to meet the at-rest requirement, the virtual machines that you rely upon in the Veselov reference, would have to be shut off, essentially, right?

A I want to point out that the teachings here are applying -- the formula of the arts, reading the two patents, would have been compelled to combine the two.

Because even if one talks -- which I'm not saying it is -- about active virtual machines, this one is actually talking about powered-off or inactive powered-off virtual machines.

And both of them talk about cybersecurity assessments. Both of them rely on virtualization hardware -- sorry -- on virtualization and talk about cloud environments, which is virtualization technology applied to, to perform the security assessment.

So even if one of them, a POSA would have read the two patents and would have been able to combine the teachings of the two of them.

Q But my question is different, which is: In order to do what you just said and combine the teachings of the two references to reach the claims of Orca's patents, in your opinion, wouldn't it be the case that the Veselov virtual machines would have to be shut off in order to be at rest in accordance with Price?

A Which virtual machines are you talking about, sir? Because I mean, there are multiple virtual machines in Veselov.

And, again, I want to point out that there is the assessment that a snapshot is taken while the system is potentially powered off.

I think Price talks clearly about that. And at the same time, we have the detected issues, basically, that Price is talking about. The two references talking together -- or at least exist performing Veselov assessment process, including taking and request the snapshot while the VM is at rest. Price covers that.

Q That's what I'm getting at, so I just want to make sure we are on the same page, which is,

your view or your combination here of Veselov and Price is taking offline or powered-off virtual machines, such as are described in Price, and applying them to Veselov; is that right?

A I'm applying -- I'm combining the two teachings. We can go the other way around, right.

Q Sure.

A I can take Veselov and apply it to Price.

But look at them, and they talk about security assessments. They talk about virtualizations, virtual machines, virtual resources, machine images. Together they basically cover at least the assessment process.

So the other part I want to point out is that Veselov himself does not preclude that the machine is powered off. I already talked about that.

The state of the virtual machine is never mentioned in Veselov. So the process would have been enforced, but by the understanding that while I use Price, the fact that Veselov does not already talk about at rest when the process begins

for the specific image, does not preclude Veselov used independently on at rest.

Q That's not what I'm asking you about, and I feel like I must not be asking my question well because I'm not sure why we seem to be arguing with each other, when I think we're not.

I'll try it again which is: You combined Price and Veselov. That's your opinion is that those two references combine?

A Yes, sir.

Q And you combine them, at least in part, for Price to provide the at-rest requirement of Orca's claims in the '031 patent.

We agree on that much?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A As I mentioned in my declaration, Veselov itself does not mention any states, but to reinforce the obviousness, we are going to combine Price, which exclusively mentions at rest.

It doesn't automatically mean that Veselov himself is not sufficient.

Q I didn't say that it did.

A Okay. I just want to clarify so we are on the same page.

Q I'm just trying to get to the substantive question, and I'm struggling to understand why you seem to be fighting me on it.

Okay. So it's true that in your combination of Veselov and Price, to get to the at-rest requirement, the virtual machines that you map to Orca's claims are powered off and so at rest.

Is that true or false?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Again, as you noticed in the figure we discussed, it doesn't require the machines to be powered off. The Price does not require the machines to be powered off.

He has both analysis from machines that are powered on and machines that are powered off. So it's not exclusive applying the teachings of the two patents apply broadly one to the other.

So either way you look at it, the two together, and also as I mentioned individual Veselov, cover all cases that we discussed.

Q But this is where I think we're just talking past each other.

Are you saying now, that somewhere in your report, you identify the machines that are online in Price, the ones that are online, not offline, as teaching the at-rest requirement of Orca's claims?

A I think that this is a mischaracterization of my declaration.

I said a POSA would recognize that Price offline then was typically presented by the same type of this claim as this investment of snapshot. Which then the offline component of Price would have benefited from Veselov's analysis.

I think you are trying to apply Price directly on Veselov, and I'm trying to do the reverse. I'm trying to apply Veselov on Price as a combination, so I'm not entirely sure we are on the same page.

Q I'm not trying to do any of those things. I'm just very confused now about what you're saying your opinions are.

Are you saying that in Price, the online, online, virtual machines are at rest?

A I don't think I said that.

Q Right. They're not, right? The offline machines are the ones that are at rest, and the online machines would not be at rest, in the way that that term is used in Orca's '031 patent.

Can we agree on that much?

A We agree that the online ones will not be at rest, and the offline -- I mean, Price talks about both, so yes, we agree.

Q So when you combine Price and Veselov, it's the offline powered-off virtual machines that are the ones that are at rest, correct?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A As I explained, Veselov does not explicitly require a state, and the use of Price teachings applied broadly, regardless of the state

of the virtual machine, as you probably notice from the figure we discussed.

We pointed out to the at rest because that makes more sense for that specific claim, but the teachings apply broadly across both of them. We don't have to restrict ourselves to one or the other, right?

BY MR. LUMISH:

Q That's not what I asked, though. I didn't ask you any of those things. I just asked you if it's true that when you combine Veselov and Price, it's the machines that are offline, powered off that are the ones that are at rest, in that combination?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Again, I think that your question creates a limitation that I would like to state that is not correct.

While one of the embodiments refers to what you just mentioned, and I agree with that, it's not in the totality of the teachings on both

patents that are covered by what you just mentioned.
BY MR. LUMISH:
Q I don't understand that answer, but I'm going to move on.
If there is a virtual machine that's at rest in the form of being powered off or offline, can we agree that it wouldn't be responding to clients?
MR. ARGENTI: Objection. Form.
BY THE WITNESS:
A Again, I'm trying to understand. Can you explain to me what the virtual machine is supposed to do and how it would be responding to clients and what is expected?
BY MR. LUMISH:
Q I don't think any of that matters. My question is: Just if it's offline, powered off, the virtual machine could not respond to clients at all?
A If it's powered off, the clients would not be able to reach it to begin with, sir.

Q Correct. That's pretty straightforward, right?

A It's straightforward that they won't be able to reach it, so the response -- I mean, they wouldn't have received the request to begin with.

Q And if the virtual machine is powered off or offline, it's not active, it's at rest, it couldn't provide content at all; isn't that true?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A In order for me to answer, I need to understand what you mean by "content."

BY MR. LUMISH:

Q Content from that virtual machine. For example, from virtual disks that may be associated with it.

A If a virtual machine is powered off, the virtual disks can be accessed through other means, from the virtual machine manager's, potentially.

Q That's not what I asked, though. Please don't change my question.

A You asked me about virtual disks, sir.

Q No, no, no, no. I'm just trying to -- I'm trying to answer. You're -- you're quibbling with my questions. That's all.

The question was simple. If a virtual machine were powered off, and so at rest, it would not be providing content. That virtual machine would not be providing content at all. Is that true or false?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A If you are referring to the processing that the virtual machine programs within the virtual machine, that is correct. But if you are asking if the disks of that virtual machine could have been accessed while the virtual machine is powered off, that's a completely different question, and I would answer that there are cases that you can still access the disks of a virtual machine that is powered off.

Q In your experience, virtual machines are running applications of some sort, right? Maybe it's a word processing, e-mail, something like

that?

A So I want to be clear. In a cloud system or in a system, there are many virtual machines. Some of these virtual machines can access, potentially, disks and content from other virtual machines. The fact that one virtual machine is not accessible, does not automatically make the content of the disks that are associated with the part of the virtual machine.

Q That's not what I asked. That's not what I asked. Can you answer the question I asked, please?

A Can you repeat the question?

MR. ARGENTI: Objection. Form.

BY MR. LUMISH:

Q Okay. Please listen to it.

Virtual machines will run applications, for example, e-mail or word processing, as a way of delivering content. Is that true in your experience or not?

A Some virtual machines can perform those activities, correct.

Q And in those examples, can we agree that if the virtual machine is offline, at rest, it can't provide that sort of content because it won't be -- it just can't provide that sort of content, it won't deliver content?

A I'm sorry. I lost you halfway through. The connection was not good. Something happened with the connection.

Q Oh. Can we agree that if a virtual machine in the example we were just talking about is offline and at rest, it couldn't deliver that kind of content?

A If the content -- it depends on the program running on the virtual machine, that's correct.

Q The virtual machine of Price, whether it's offline or at rest, as you put it, wouldn't be running its normal workload; is that true?

A If it is at rest, it wouldn't be able to run its normal workload, that's true.

Q And the virtual machine in Price, if it's offline or at rest, wouldn't be free or able to

continue servicing requests; is that true as well?

A That is true.

Q If it's the virtual machine of Price were offline or at rest, it wouldn't be able to perform other work?

A What do you mean by "other work"?

Q Any work. It wouldn't be able to perform?

A It wouldn't be able to perform work as related to the programs that it was responsible for. Yes, I agree with that.

Q And while the virtual machine is at rest in the form of being offline or powered off, it's experiencing downtime; is that true?

A That particular virtual machine can experience downtime if it is powered off.

Q You said "can experience." My question is --

A So --

Q -- can experience, possibilities, but when the virtual machine of Price is powered off or offline, and so at rest, in your opinion, it is in fact experiencing downtime; is that true?

A That specific virtual machine -- again, that specific virtual machine I would agree, but I want to preface it that in a cloud system, there are redundancies. So if another virtual machine is on, utilizing the content of the disk, that would not be the case. But if you are specifically talking about that specific virtual machine that is at rest, then that virtual machine would be not servicing requests.

Q Let's go back, please, to your declaration, staying with the '031 as our example from -- so Exhibit 1002, '031. I want to ask you about Paragraphs 82 and 83, which are on Page 77.

A You mentioned Page 87?

Q 77.

A Oh, 77. I'm there.

Q So really, I want to ask you about Paragraph 83. Let me start there.

In Paragraph 83, you say: "In addition, I've been asked to assume that analyze/analyzing at least one snapshot also encompasses analysis of a VM instantiated from the snapshot."

Do you see that?
A I do.
Q Is that a yes?
A Yes, sir.
Q You understand that the claims of the Orca patents require analyzing or that something analyze a snapshot in the claims, right?
A I believe analyze, analyzing at least one snapshot, yes.
Q And in Paragraph 82, you walk through your opinions and you give cites for where you think -- I think it's -- withdrawn.
Let me stay with 83. In 83, you say you've been asked to assume that analyzing a virtual machine that's been instantiated from a snapshot performs that analyzing step.
Who asked you to assume that?
A I was instructed by the counsel to assume this, specifically for, I believe, Claims 1 and 16, as well as analyzing the list of snapshots in Claim 9 as encompassing both a direct analysis, which I talk to in my -- in Paragraph 82, Page 77

of my declaration. Analyze of the VM instantiated from is this snapshot.

Q So in Paragraph 82, you give an opinion that analyzing a snapshot would mean -- would meet the analyzing the, at least, one snapshot requirement of Orca's patent claims. But in Paragraph 83, instead of an opinion, you say you are asked to assume that. Why the difference?

A I didn't ask why. I was asked to assume. So my -- my declaration is assumed to -- I didn't ask why is that the case, but I was asked to assume, specifically as I recite there, that analyzing at least one snapshot also encompasses, not just, but also encompasses analysis of the VM instantiated from the snapshot.

Q So you were asked to do that by the lawyers and you didn't ask them why?

A My analysis includes both, this, as I say in 84.

Q Can you answer my question, though?

A I didn't ask why. I don't have an opinion why that was included or not. I was not asked to

analyze. I'm sorry. I'm using the same word. I was not asked to opine on why that was included or not.

Q And you don't have an opinion as an expert, a technical expert, that it's correct to say that analyzing a virtual machine that's been instantiated from the snapshot would meet the analyzing the snapshot requirement of Orca's patent claims; is that true?

A I do not have an opinion because I didn't look into that subject. I was instructed to perform that analysis under this assumption, and I did.

Q There is no opinion in any of your declarations that says I agree or it's my opinion that analyzing a virtual machine instantiated from a snapshot meets the requirement of Orca's '031, '032 or '685 patent claims requiring analysis of a snapshot?

A I haven't looked at my entire declaration carefully, but I don't believe so.

Q And you don't offer any evidence or

analysis to support this assumption, to say that the assumption in Paragraph 83 is right, that analyzing a virtual machine instantiated from a snapshot would meet the requirements of Orca's claims to analyze a snapshot?

A As I cite in paragraphs -- Paragraph 83 of my declaration, I don't have an opinion. I was asked to assume that.

Q That's a slightly different question. I've already asked you about whether you had the opinion, and we've gone through that.

My question is now about evidence or analysis to support the assumption in Paragraph 83.

There is nowhere in your declarations where you lay out evidence or analysis that would say, well, I've been asked to assume it, here is evidence, or analysis that says that assumption is a good one?

A I don't believe so.

Q Let me ask you to go backward in your report to Paragraph 37. It's on Page 26. So

we're still using the '031 Exhibit 1002 as our example here.

A All right, sir.

Q Read what you'd like for context, Doctor, but I want to ask you about the second sentence, which starts on the fourth line of Paragraph 37 and the second and third sentences, so the second sentence.

Those two sentences read as follows: "Because it is easier to move around an image or snapshot than a hard drive, it is more important to think about the security of the data in that image or snapshot.

"Snapshots can be more risky than images because snapshot contain the contents of RAM memory at the time that the snapshot was taken. And this might include sensitive information that was not even stored on the drive itself," and there is a close quote there.

So I said you wrote. I should have been more careful. You quoted here, and I read part of the quote from Exhibit 1018, the NIST document,

right?

A That's correct, sir.

Q But you are quoting this statement from that document, true?

A I did quote that statement from that document.

Q And it's distinguishing or contrasting snapshots from images, right?

A In that specific document, it makes that distinction. That's correct.

Q It refers to snapshots -- or I should say images or snapshots to denote that they are different things, right?

A It talks about images or snapshots, and then it talks about -- yes, it talks about them separately. You are correct.

Q And then it contrasts them by saying that snapshots can be more risky than images, right?

A It talks about them being more risky than images, yes. That's correct.

Q And then it explains why snapshots can be more risky by saying that they contain the

contents of RAM memory at the time the snapshot was taken.

So it's distinguishing both by what's in the snapshot and the timing of it, as compared to an image; is that fair?

A That's fair.

Q Do you agree with those distinctions that we just talked through here, from Paragraph 37 of your declaration?

A Can you be more precise? What do you mean if I agree? I agree that snapshots and images are different, but they contain a lot of overlapping information, as actually is recited here.

Q But there is nothing I read to you or we just discussed about Paragraph 37 from the quote in NIST, where you're saying, that's what I said, but I don't think it's right; is that true?

A I believe by that by and large, the way that is described, that is correct, yes.

Q And so we talked about this some, and I can show it to you if you need, in Veselov, but one of the approaches it describes is analyzing

the instantiation of a virtual machine, a virtual machine that's been instantiated from a snapshot, right?

A I believe one of the embodiments talks about that, yes.

Q And what does it mean to instantiate a virtual machine?

A I believe Veselov explains that.

Instantiating a virtual machine, again, I'm not trying to be exclusive here or limiting. Typically, instantiating a virtual machine means that you use the snapshot information to bring up a virtual machine at the state at which the snapshot was taken.

And, again, I want to be clear that -- that's the typical, I would say, way of someone thinking about it.

Q When you instantiate a virtual machine, does that mean bringing it into existence, sort of firing it up and getting it going?

A I mean, again, there's more technical details, but by and large, I would argue that this

is the case, yes.

Q So what's a snapshot of a virtual machine in the context of the Orca patents?

A Again, which Orca patent are you talking about? And can you point me to which reference are you talking about, because a lot of this information is context dependent, so I would need a little bit more context, sir.

Q Are you saying that the virtual machines are different between the '031, '032 and '685?

A I'm not saying that. I'm saying that you need to point me to where exactly you want me to access the snapshot because the context -- the surrounding context of the reference would matter.

Q My question had a mistake in it.

Is it your testimony that there is a difference between the snapshot of the virtual machines, as that phrase is used or term is used, across the three -- '031, '032 or '685 patents?

A I'm not saying that, sir. I'm saying that if you want me to opine on the use of the word "snapshot," I need to understand the context.

Q The context of the claims of Orca's patents. We already talked about it.
A Which claim exactly?
Q Where it talks about a snapshot?
A Which one? What patent are you referring to?
Q Any of them, pick any claim you want. Why don't we just look at Claim 1 of the '031, as a good example?
A Again, I am not trying to be difficult. I'm trying to be precise here.
Q You told me that there is no difference among any of the claims, so I'm not sure what the point of this exercise is.
A I'm not trying to --
Q Other than to spend my time.
A I don't think so. I'm on the '031 patent. Where do you want me to go?
Q Anywhere you want, Doctor. I suggested Claim 1, but look at any one you want, if they're all the same. I'm asking you about what it means to be a snapshot of a virtual machine in those

claims.

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Again, I'm going to be precise. Taking at least one snapshot, Claim 1, also virtual disk. I believe that the snapshot in this case, refers to a state of a virtual machine at a specific point in time.

BY MR. LUMISH:

Q Can we agree that the claims differentiate or distinguish the virtual machine itself from the snapshot of the virtual machine. It uses two different phrases to describe them as two different things?

A I would agree with that, yes.

Q And the express requirement of the claims is to do an analysis of the snapshot, right?

A Claim 1 talks about requesting or at least snapshot of the virtual machine, yes.

Q There is no claim in any of the Orca patents at issue that you can point me to where it describes doing an analysis of the virtual

machine, as opposed to a snapshot.

Is that true or false?

A Yes, but I would like to explain that, as I explained to you, a virtual machine is a snapshot, is the state of a virtual machine at a specific point in time.

So it would contain all the information that the virtual machine would have at this point in time. So someone performing analysis of a virtual machine snapshot, would inherently perform the analysis of a virtual machine at that point in time.

And I want to be clear about that.

Q The Veselov reference -- and I can point you to sections, but I think you'll know this without having to go through the exercise, you tell me.

But the Veselov reference Exhibit 1007, never describes analysis of a snapshot itself. It only describes analyses of virtual machines.

Do you agree with that?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I don't know where you see that, because I'm not entirely sure what you're referring to. So I'm not sure what you're talking about. I'm sorry. Can you point me to -- I'm sorry to have you to go through the exercise.

BY MR. LUMISH:

Q I'll just ask you a different question.

If you could just look at Veselov for me, please, Exhibit 1007.

A Just give me one second to get there. Give me one second. I'm searching the exhibits here.

I'm there.

Q This is Exhibit 1007 again. We're at Column 16, please.

A Column 16, I'm getting there. I'm there.

Q And I'm at Line 45, and I'm going to read -- it's a very long couple of sentences. I'm going to read the first sentence and part of the second one, but you can read all the context.

Here Veselov says: "At Step 412 with the

assessment VM instantiated, the scanning service may install the security agent program into the assessment VM instance. At Step 414, the scanning service may perform the security assessment on the assessment VM instance."

And then it says "such as," and it goes on from there. So here are my questions, Doctor: This description in Veselov at Column 16, beginning at Line 45, is referring to, first of all, installing an agent on to an actual running virtual machine, true?

A Yes, but this is not the only instance where the analysis happens.

Q I'm just asking about this one.

A Can I answer?

Q I'm just asking about this one.

And so when it says "a VM instance," that's an instantiated virtual machine, right?

A It looks like it, yes.

Q Can we agree that this discussion here, Column 16, beginning at Line 45 through that paragraph, is describing the analysis of a virtual

machine itself?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Where do you see that, sir? Can you point me to where it says "this analysis pertains specifically to virtual machine itself"?

BY MR. LUMISH:

Q Sure. It says: "At Step 414, the scanning service may perform the security assessment on the assessment VM instance."

That's describing assessing or analyzing an actual running instantiated virtual machine, true?

A It looks like it.

Q Nothing in that whole paragraph -- and read the whole thing for context, please. Nothing in that whole paragraph refers to analyzing a snapshot?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Yes, but this is not the only example. This excerpt from Veselov is not reflecting all

the teachings Veselov provides.
BY MR. LUMISH:
Q I didn't say it was. I just asked you about that passage, and you answered my questions about it.
You don't have any opinions in your declarations in this case that Orca, in the underlying lawsuit, accused Wiz of infringing by analyzing virtual machines that are actually instantiated instead of snapshots, right?
MR. ARGENTI: Objection. Scope. Relevance.
BY THE WITNESS:
A I have not opined anywhere in my declarations about the lawsuit or infringement, I believe.
BY MR. LUMISH:
Q Did you review Orca's complaint against Wiz, which was Exhibit 1006 in this IPR?
A It might be as part of the IPR, but I don't think that I reviewed it.
Q You don't think you reviewed it. Okay.

And so just to be clear, you haven't taken a position, you don't have opinions that Orca's taken the position anywhere in the District Court case that analysis of an instantiated virtual machine amounts to or is the same thing as analysis of a snapshot?

A I have not opined on that, and I was not even aware of that.

Q Okay. Fair enough. I should have asked you this when we were talking about Price, but can we agree that Price never uses the term "snapshot"? That's Exhibit 1048.

A I haven't looked at Price exhaustively for that keyword. If you believe that's the case, I would agree, but I mentioned many times that the facilities -- when it talks about machine image, the facilities provided by underlying virtualization and assets connected to a virtual machine would have allowed the API to perform any type of imaging, including snapshotting.

Q So I'm going to turn to a different requirement of the '031 claims.

MR. LUMISH: If anybody wants a break, now is a good time to do it. I'm happy to just keep plowing.

THE WITNESS: Let's take a five-minute break, if you don't mind.

MR. LUMISH: I'm happy to, and feel free to put some water next to you. We can't see below your second button here.

THE WITNESS: I don't want to look around moving stuff.

MR. LUMISH: Okay. Why don't we take a short break?

(A recess was had.)

MR. LUMISH: Back on the record.

BY MR. LUMISH:

Q Back to Claim 1, please, Doctor, of the '031 is a good example. I want to ask you about the reporting requirement.

So you'll see at the very last limitation of Claim 1, it says: "Report the detected vulnerabilities as alerts."

A Where are you, sir? I'm just getting

there. Which patent are you on?

Q '031.

A Let me grab it. I'm there. '031, yes.

Q Claim 1 at Column 10 there, the very last limitation says: "Report the detected vulnerabilities as alerts."

A I do see that. Yes, sir.

Q And you can verify if you'd like, but do you know that the '032 patent has a similar requirement of reporting or to report vulnerabilities as prioritized alerts?

A I do recall that, yes.

Q And then the '685 is more like the '031, and it just says: "Report as alerts."

Again, I'm truncating some text in the middle.

A I do think so, too. Yes, I agree.

Q Can we agree that in all of those claims, it uses both the term "report" -- the claims use both the term "report" and the term "alerts" separately?

A I do show both words on both of them, yes.

Q Okay. So can we agree that they're not coextensive, that it's not enough to just report, you have to report as alerts. That you have to have a particular type of reporting as an alert to meet the requirement of the claims?

A It appears so, yes.

Q Another way to put it is, alerts are a subset of a broader category of reports maybe; is that fair?

A I wouldn't go as far, but I can tell that report and alerts here are cited as two different words. I will give you that.

Q You don't agree necessarily that they are -- that's fine. Withdrawn.

Can we agree that you could report something in a way that's not an alert?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A Under what context? I need to understand a little bit more of the context. Like, are you talking specifically in this Claim 1 of 051 or in general?

BY MR. LUMISH:

Q Yes.

A Yes? I'm sorry. In general?

Q I'm talking about in the context of Orca's patents, Claim 1 of the '031 is an example, but we talked about how all three patents and all of the assorted claims have reporting as alerts or reporting as prioritized alerts.

I'm asking if you agree you can report something in a way that's not an alert in that context?

A The way that it's phrased, it looks like it, yes.

Q Have you got any examples in your head of how that would happen?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A How can you report without showing an alert?

BY MR. LUMISH:

Q Yes.

A I guess a report can be a file that the

user never opens, but it might have alerts inside, so I don't know. Again, I would agree that a report -- an alert is different than a report.

Q In what way? In what way are they different, in other words?

A I mean, a report is a little bit more generic term. An alert is something that potentially makes it stand out. A report can be -- the issue I'm having is that an alert can be big, a report can be big, too. I would say they share a lot of commonalities, but they are not identical, let's put it this way.

Q Would an alert convey some sort of urgency or an action that a user might want to take or need to take to protect against the vulnerability, for example?

MR. ARGENTI: Objection. Form. Scope.

BY THE WITNESS:

A I wouldn't go as far as to say that. I would say that alerts are different than reports, and I agree with you on that.

BY MR. LUMISH:

Q Well, but I asked you how and you told me -- the best I heard from you -- or the most I heard from you was alerts would be designed to stand out. And I'm just trying to understand what that means.

In what way would an alert stand out that's different from a report?

MR. ARGENTI: Objection. Form. Scope.

BY THE WITNESS:

A Again, I was not asked to opine on the difference between alerts and reports, but I will tell you, based on my general understanding, typically, an alert is delivered to the user, where a report might not necessarily be delivered to a user.

Q This may be a dumb example, but I'll ask it anyway.

If you're Wiz or Orca, you could publish an annual newspaper article that lays out all the vulnerabilities that you identified over the course of a past year. It might be thousands of them, and just publish a list. That would

certainly be reporting.

Can we agree on that?

MR. ARGENTI: Objection. Form. Scope.

BY THE WITNESS:

A I cannot opine on that because it really would depend, for example, if those alerts are unknown to the person receiving them, it would be an alert.

So I don't want to blankly say, you know, let me give you an example. I look at that list, and the vulnerabilities listed there are things I have not considered.

And even if Wiz and Orca were familiar with them and they reported them to me, I look at the vulnerability report there, and I'm, like, oh that's an alert from me because I'm alerted to a vulnerability that I don't know.

So literally, the importance here is that in both cases, the user receives -- a user receives that information and assesses that information based on its content.

And in a security system, for example, you

mention specific vulnerability alerts, but a vulnerability would actually definitely be an a alert.

Q One last question on this sort of point and just to understand it.

In doing your work as an expert on this case and assessing the claims of the Orca patents '031, '032 and the '685, were there any distinctions between the report and the alert that you had in your mind that you haven't already told me about that you can share with me now to help me understand how you distinguish them?

A I believe I talk about that in my declaration. If you give me time to find it, I can give you where I specifically for the '031 declaration, where I talk about that, if you don't mind.

Q I don't recall that. I just may have missed it.

A And I might have to check, too. But give me just one second. I believe I might have something.

I believe, I talk about that in Paragraph 170 on Page 142 of the '031 declaration, and Paragraph 171, starting from 170, going into 171, continuing all the way, I would say, 175, Page 143. I'm pointing you there --

Q And so the -- I'm sorry. Go ahead.

A No, that's enough. I'm sorry. I didn't mean to interrupt you.

Q No worries. I interrupted you.

I was going to ask you if there was something specific in those six paragraphs, where you think you have drawn a distinction, that you can point me to between reporting and alerts?

A Yes, sure. If you take a look at Paragraph 172, I read from my declaration, so I will go slow.

"Veselov explains that the assessment results identify the vulnerabilities detected by the scanning system."

It's in Column 20, Line 57 to 21 and all the way to 13: "Assessment results describe security vulnerability of the first virtual

machine instance."

And then on 23, Lines 19 to 47: "Assessment is also describe one or more security vulnerabilities of the first computing instance."

And of course Claims 1 and 16 through 17 also the same. And, again Column 10, Lines 17 to 24: "Generally performing the security assessment includes applying the rules of assessment to the properties of the produced target resource to produce assessment results that describe findings relating to the assessed properties.

"And some examples, basically, are the scanning system identifies the immediate actions if vulnerabilities are identified in the assessment results.

"Veselov then describes reporting these vulnerabilities as alerts by communicating the assessment results, which identify the vulnerabilities to a user, owner or administrator of the target resource.

"For example, Veselov describes providing the assessment results in a user readable format

to user interface to be displayed on the user device."

Again, Veselov Column 10, Lines 30 to 36: "This reporting alerting step is also depicted in general terms in Figures 2, 4 and 6. And it's my opinion that Veselov, therefore, teaches reporting the detected vulnerabilities as alerts, as recited."

Q So this is all discussed in Veselov, right?

A I believe so.

Q Veselov never actually uses the term "alert."

Can we agree on that?

A I don't know for sure. I would have to check the patent, but if you think so, I would --

Q You looked for it, right? I mean, the whole point was trying to map Veselov; teachings to the Orca claims, and here is where you did that, and you don't point to any quotes that use the term "alert" in Veselov, right?

A You are correct, I don't use any quotes

because I thought it was sufficient to show that reports that contain important information are reported to the user directly as part of the reporting system, in this case, vulnerabilities, detection of vulnerabilities.

Q I'm sorry. Go ahead.

A No, you can continue.

Q So you said "reported to the user."

What if a user doesn't open the results, is that still an alert in your mind?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I don't see anywhere the requirement that the user has to open the results. I think --

BY MR. LUMISH:

Q Go ahead.

A No, you can continue.

Q At the top of -- Page 143 -- excuse me -- this is in Paragraph 172, you bolded and underlined to emphasize the text that says: "Assessment results that describe findings relative to the assessed properties," right?

A I'm sorry. Where are you looking at, sir?
Q Top of Page 143.
A Yes, sir.
Q Why did you bold and emphasize that text, in particular?
A Because, again, it is important that different assessments are performed. The scanning system identifies also findings which allow us, basically, to identify vulnerabilities as part of the assessment results.
So these vulnerabilities and the description of the vulnerabilities are reported as alerts by communicating this assessment results, which identify the vulnerabilities to a user, owner or administrator of the target resource.
Again, I can you the examples. I don't want to keep reading the paragraph. It's all in Paragraph 173 of my declaration.
Q The notion of findings, though, relative to the assessed properties, as you have it here, findings can be almost anything, right, it's a very broad term?

A The findings here, I would point that the findings specifically also include -- let me rephrase that.

The findings are a very generic term. I agree with you. But it's also relative to the assessed properties. There are a lot of different scanners, and we're talking about security here.

And basically, Veselov gives examples, where he says: "Assessment results describe one or more security vulnerabilities for the first computing resource."

And I believe that this -- remember, you asked me what is the difference between a report and an alert. I believe vulnerabilities of a system that the user is utilizing, raises to the level of the alert.

Q And what if the findings were all benign, that you did a security assessment, and the virtual machine you were assessing, came up clean, no vulnerabilities, no viruses, no anything like that. Those would still be findings, right?

MR. ARGENTI: Foundation.

BY THE WITNESS:

A Again, I need to understand the assessed properties. If the assessed properties, for example, as it's given in the example, is identified vulnerabilities, then the report might have come up empty.

BY MR. LUMISH:

Q So I'll give you the data, then, so by assessed properties in this example I'm giving you, I mean, a virtual machine, and the assessment was one done looking for vulnerabilities or problems, and the findings -- the results of the assessment were that there are no viruses, no vulnerabilities, nothing comes up, the virtual machine comes up clean, wouldn't that still be findings of that assessment?

MR. ARGENTI: Objection. Form. Scope.

BY THE WITNESS:

A I don't believe that what I cited talks about that. It says: "Assessment results also describe the findings." So if you come up empty, there will be no description of these findings, I

believe, if that's what you are talking about.
BY MR. LUMISH:
Q So you read Veselov to say that it would only report problems. It wouldn't report benign findings?
A I respond to your hypothetical example, where you mentioned, specifically, that you were asking -- you were scanning for vulnerabilities, and you didn't find anything. You mentioned that there was no problems, no virus. There was no nothing.
And, again, if the assessed property here is security of the system and there is nothing, then maybe the findings were empty. But there, it depend on how you -- it doesn't -- it's not limiting the way that the information is presented.
Q Let's shift gears to the Hufsmith reference, please. It's Exhibit 1078.
A I think I have it.
Q And let me know when you have that in front of you.

A I do have that in front of me. Thank you, sir.

Q Okay. Thank you.

And you've read and studied Hufsmith; is that true?

A That is correct, sir.

Q How many times would you say you've read it?

A I read it at least a few times, but I cannot point you exactly to the number of times because I've read it more than a few times. But I don't know exactly the number because I read different pieces at different times.

Q Can you look at Paragraph 2, please. It's on page -- oh, it's, like, 12 of the PDF of the exhibit. It's under background, Subsection 1, Field?

A I don't have that PDF in front of me. I only have the copy.

Q That's fine. It's still Paragraph 2. You've read patent applications before, right, so you understand the paragraph numbering?

A I didn't hear you about the paragraph. You said Page 12 of the PDF? I'm sorry.

Q I did all those things more to identify for the record.

So Paragraph 2 reads, Doctor: "The present disclosure relates generally to tooling for software development related to distributed applications, and more specifically to techniques that combine metrics of heterogenous vulnerabilities scans of container images."

You are familiar with containers, right?

A I am.

Q And containers is different from virtual machines?

A It's a form of virtualization.

Q It's not the same thing as a virtual machine?

A It's not.

Q And this is referring to images, not snapshots, right?

A It talks about container images, you are correct.

Q Can we agree that Hufsmith Exhibit 1048 never -- or 1078 excuse me -- never refers to virtual machines?

A Can you repeat the question? I apologize. I lost it.

Q Sure. Can we agree that Hufsmith Exhibit 1078 never refers to virtual machines?

A I have to take a look at the patent again carefully.

Q Hang on. That's not true anyway. I just did a keyword search, and I was wrong. I apologize. I thought I was right when I asked it, but I was not correct. Let me check. Before I say it, I think I know what my error was. Let me just check.

Okay. I just keyword searched it to make sure I'm right.

Can we agree, Doctor, that Hufsmith Exhibit 1078 never refers to snapshots?

A I have to look. So I have to take your word for it. I don't know for sure. I have the paper copy, and I need to scan it to see if that's

the case because it's a long patent.

Q You don't recall ever citing to a reference in Hufsmith to snapshot, though; is that fair?

A I would say it's fair, yes.

Q Can you look at Paragraph 149 for me, please?

A Are you referring to the patent, sir? Hufsmith.

Q That's right. So we're still in Exhibit 1078, Hufsmith. I just wanted to -- it's a short Paragraph 149.

A I'm there.

Q You'll see a reference on the fourth line of that paragraph to encapsulated functionality.

What does that mean to your understanding?

A I will read from the top of 149, it says: "The present techniques, under the above-heading and elsewhere are, in many cases, described with reference to containers, but it should be emphasized that the present techniques are applicable to other forms of encapsulated

functionality, including virtual machine images, machine images, unikernels, and AWS Lambda functions."

And as I said, I believe this talks about different types of virtualization, because -- and systems, because Lambda functions, you know, are a very lightweight form of virtualization, can be used as a form of virtualization under certain conditions.

And then it talks about machine images similar to -- I mean, again, this is too encompassing, virtual machine images, it mentions virtual machine images clearly.

Q So I just want to understand what you understand encapsulated to mean, though, in that sentence, and when it says encapsulated functionality.

A I believe here, it means -- and, again, I don't want to say something that's limited. Encapsulated functionality means the teachings of, basically, this patent.

Q So if you could turn to Paragraph 26,

please. Sorry I'm bouncing you back and forth, but it's just --

A No, no.

Q -- the way I put my outline together. I should have taken the time to make it a little more linear for you.

A I'm there.

Q Why don't you read that paragraph to yourself and let me know when you're done, if you would?

A I'm done reading the paragraph, sir.

Q So I just wanted you to have all the context. I'm going to ask you about one sentence. It starts on the fifth line of the second column on the right there, so we're in the upper right corner, and it says: "Containers generally virtualize at the operating system level in contrast to virtual machines that emulate the underlying hardware as well."

Do you see that sentence?

A I do.

Q So here, Hufsmith is contrasting virtual

machines from containers and uses, in fact, the phrase "in contrast," right?

A While I see what you're pointing at, I also see in the same paragraph that you asked me to read, it says: "This should not be read to suggest that containers and virtual machines are incompatible, as some implementations may include one or more containers executed within a virtual machine, which may be one of several virtual machines on a given computing device.

Q Yeah. I'll get to those in a second, but can we agree that the sentence I asked you about is one which Hufsmith is drawing a contrast between containers and virtual machines and, in fact, uses "in contrast" to make that point?

A I believe it refers to the different types of virtualization because he wants to make a distinction between containers and virtual machines. But as we discussed prior to that, in the previous paragraph that you just cited, the teachings apply equally to both virtual machine images and containers.

Q Okay. Now, in going down to the bottom of the paragraph, the sentence you read, I told you I'd get to it, this doesn't describe virtual machines and containers as being the same. It refers to containers as potentially being "within a virtual machine," right?

A Yes.

Q And so while it may be within, you would understand a container is different from a virtual machine as used in that paragraph?

A I would agree that containers and virtual machines have different things.

Q If you can go to Paragraph 55, please. This is sort of more on that same point I just asked you about. Paragraph 55 is on Page 6 of the text. Let me know when you're there, please.

A Paragraph 55. I'm here.

Q I'm going to read you one sentence. Hopefully, you can find it, and then read anything you want around it for context, but right about in the dead center of that Paragraph 55, Hufsmith says: "Containers may run within a virtual

machine or within a non-virtualized operating system, but generally, containers are distinct from these computational entities."

So can we agree here, again, Hufsmith is distinguishing containers from virtual machines and uses the word "distinct" or "district from" in order to make that point?

A That specific instance or that specific paragraph, it does talk about that they are distinct, that's correct.

Q And then if you read going forward, the next sentence says: "Often virtual machines emulate the hardware that the virtualized operating system runs upon and interface between that virtualized hardware and the real underlying hardware. In contrast, containers may operate without emulating the full suite of hardware or in some cases, any of the hardware in which the container is executed."

So here, again, we have Hufsmith drawing a contrast and using that word between containers and virtual machines based on what they're

emulating, right?

A Again, I think it's trying to make that distinction, not because the teachings are not applied to both of them, but because it's trying to explain that the two of them should not be construed to be equivalent.

And as I have pointed out in my declaration, both Veselov and Hufsmith talk about containers, and I can point you to Veselov. And, again, a POSA would have understood that while containers and virtual machines are distinct entities, some of the teachings, as recited in both inspection of Veselov and in this specific case, Hufsmith, apply to both of those entities.

So they are, in a sense, distinct, but in many ways, they experience vulnerabilities. The scanning is performed and the teachings apply to both of them broadly, as we discussed in this specific patent and the specific -- I believe it was 45, paragraph that you made me read.

MR. LUMISH: Leyhbert, I'm going to shock you by asking for your help. I need an exhibit if

you're there, please.

AV TECH SHARP: Just let me know what number.

MR. LUMISH: In my folder it says 001 new. It starts with the word "containers versus."

AV TECH SHARP: Yes, sir. I got it.

MR. LUMISH: And you're sticking that in the chat?

MR. ARGENTI: Or I can upload it to the link or in the chat box, either or.

MR. LUMISH: It will be in the link. That works.

BY MR. LUMISH:

Q So, Doctor, I got to do the same thing you do here, and we'll pull this one up from the link.

A Give me one second, sir.

Q It's not there yet.

A It's not there.

Q Not yet. Give it a second.

AV TECH SHARP: Counsel, I wanted to ask you, do you want to mark that as Exhibit No. 2057?

MR. LUMISH: Yes, please, so we'll mark

this as Exhibit 2075, and once I have it up on the screen, I'll read it into the record a little more clearly.

(A certain document was marked Deposition Exhibit 2075 for identification, as of 03/04/2025.)

MR. ARGENTI: Once it is up and available, if I could just get a couple of seconds to take a look at it and make any objections, since it sounds like it's a new exhibit.

MR. LUMISH: Sure.

THE WITNESS: On my end, I still don't see it, sir.

AV TECH SHARP: One second, sir. I'll let you know when it is in there. One second.

And the document is already available. You may want to press F5 to refresh your browser.

THE WITNESS: I do see it now, sir.

AV TECH SHARP: This is Exhibit 2075.

MR. ARGENTI: 11 pages? That's what I see. That's the correct length?

AV TECH SHARP: Yes, sir, that's correct.

BY MR. LUMISH:

Q You still don't have it, Doctor?

A I got it.

Q So let me just, while you're looking at it and while your counsel is looking at it, just for the record what we've now introduced as Exhibit 2075, is a multi-paged document that we downloaded from Wiz's web page. So this is something we just pulled off of Wiz's public web page.

MR. ARGENTI: Yeah, as I noted, this is a new exhibit, not in the record yet, so I will object to it as outside the scope of the witness's direct testimony.

I appreciate your representation as to where you got it. I see the Wiz on the header, but just to preserve objections, I'm going to object on the basis of relevance and prejudice to the extent it's determined to be relevant, authentication, and to the extent that it's used for hearsay purposes.

BY MR. LUMISH:

Q And just so you know, Doctor, I'm only going to ask about the first page.

A Okay. I would say that I have not seen that document before.

Q That was my first question.

A I have not.

Q You haven't seen this document on Wiz's web page, for example?

A No, sir.

Q Do you know what Wiz experts team is, as it shows in the middle of that page?

A I explained at the beginning, I have not used any of their products.

Q I'm asking if you know what Wiz experts team is, though?

A No, I'm not familiar with it.

Q You see that there is a header that says: "Containers versus VMs: What's the difference?"

A I see that written in that document.

Q And the text after that says: "In a nutshell, containers and virtual machines, VMs, are two inherently different approaches to

packaging and deploying applications/services in isolated environments."

And then for whatever reason, that text is duplicated underneath the image?

Have you seen that sentence from Wiz before?

A No, sir.

Q Do you agree with it, the substance of it?

A I cannot opine on something that I'm not familiar. This is a new document for me. I don't -- I didn't have a chance to study it, understand exactly what it says. I believe that probably there is more to it. I haven't read the entire document, and I see that is from the Wiz experts team. I don't know who these people are, if it is from Wiz itself.

What is the level of expertise? I also see a date of April 8, 2024. I'm not entirely sure if this is the correct date or not, so I would be very cautious in opining on a new document that I'm not very familiar with, and I haven't considered this as part of my declaration.

Q Well, out of the context of the document, do you dispute that containers and virtual machines are two inherently different approaches to packaging?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I am not entirely sure what packaging refers to. It talks about packaging and deploying application services specifically in isolated environments. That's what the sentence says.

BY MR. LUMISH:

Q I'm trying to simplify, and I was going to ask about deploying separately.

A I don't know. I mean, it talks about isolated environments. I'm not sure how isolated environments are relevant in this specific case of distributing, computing environments and cloud environments, where many of the virtual machines and containers are available publicly.

So it talks about specifically, a very specific set of scenario here, I think, in isolated environments. I need to understand

better by what it means by "isolated environments," to be able to give you an answer.

Q Let me ask you to bring up Exhibit 1049, the Huseinovic reference.

A 149. I'm there.

Q This is one of the references you opine upon in your declarations, right?

A Of course. You're talking about Hufsmith, right, sir?

Q I'm sorry?

A Are you talking about Hufsmith?

Q Huseinovic, Exhibit 1049.

A I apologize.

Q And maybe I'm saying it wrong.

A You are not. You are not. It's just the name is very different, difficult.

I am on that, and it's a two-page exhibit, I have it in front of me, sir, I apologize. I misheard you.

Q No worries. You've read this before, right?

A Yes, sir.

Q How many times would you say you've read it?

A I would say a few times, and, again, I cannot tell you exactly how many times because I read different pieces at different times.

Q The crux of the article is about forensic analysis of virtual machines; is that fair?

A It is in the general cybersecurity area. It talks distal forensics, yes.

Q And you use Huseinovic in combination with other references to supply the page file requirements of some of the claims of the Orca patents; is that true?

A I would need to check. I believe it's specifically for one of the patents, and I have to remember, I believe, it's the '685 patent, if you let me check, so I can confirm.

Q Why don't we do it this way instead. So if you look at the '031 patent, go to Page -- excuse me -- the '031 declaration, your declaration from the '031 proceedings, you'll see Huseinovic is combined there, beginning on

Page 171 and moving forward.

A You are correct, sir.

Q I think, if you look at Paragraph 217, you refer to the page file as being taught by Huseinovic, right? That page file, being one of the claim requirements of the '031 claims?

A I'm on Page 172 of my '031 declaration, Paragraph 217. I would say: "In addition to the known elements, Veselov, Price, and Hufsmith that I discussed about generating a snapshot with a page file configured to allow for the deduction of running applications on a VM, as taught by Huseinovic, was well-known and predictable."

Q Right. My question was simply that you rely on Huseinovic, as you say it, to provide teaching of the page file in a snapshot?

A In that specific ground, that's correct.

Q So back to Huseinovic itself, if you look at the introduction, the very first paragraph of Exhibit 1049?

A Yes, sir.

Q The last sentence of that paragraph says:

"This traditional procedure has drawbacks, and it is obvious that data that was in physical memory is lost."

And the physical procedure it's talking about is taking -- powering down a computer, right?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A I don't think it talks about that. If you read -- and, again, I'm going to read from the exhibit, Huseinovic. I'm reading the first paragraph that I was pointed to by the opposing counsel.

It talks about: "If found in the crime scene that the computer he found in the crime scene is plugged out of electrical power and taken to a laboratory in order to perform offline analysis of data found in the hard drive."

So we're talking about a completely different, I think, part of here, and plugged out are not identical. Plugged out means that literally remove the power, which means the

computer is in a state that does not -- potentially might not allow for elements of memory to be captured.

But the power of virtual machine is powered off without being plugged out, instead of being plugged out, which is typical in a cloud environment, that information -- or it's in suspended state, that information is preserved, sir.

BY MR. LUMISH:

Q I'm not sure -- well, withdrawn.

Isn't this describing taking a computer that was found, for example, here in a crime scene, and when it says "plugged out," meaning unplugged it from its electrical power source and then taking it to a laboratory in order to do what's called an "offline analysis" of the data on the hard drive?

A So I want to point out that, depending on the state of this specific computer, it says that it can have data that has been lost. For example, if the computer was in suspended state and you

plug it out, you will not necessarily have memory loss, physical memory loss.

If you perform that operation and you unplug while, potentially, the virtual machine is -- so the computer is active, it doesn't talk about virtual machine in this case, you might lose data.

Q I asked you something different, though.

Isn't this introduction describing having a computer that was found at a crime scene, unplugging it from its electrical power source and bringing it to a laboratory for what's called offline analysis?

A That's what it says here, yes.

Q And what it also says is if you do that, if you plug it out of electrical power, unplug it from its power source, there is a drawback that the data in physical memory would be lost, right?

A Again, that's what it says here, but I want to point out that it refers to -- it's not inclusive of all the potentials in this case. There are cases where you can unplug a system

because the system was either in suspended state or it was idle for a long time, all the physical memory, data or -- either physical memory has been captured to virtual memory. There are many, many scenarios that I can think of. But this statement might not necessarily be correct.

Q Physical memory can include the page file, right?

A Where do you see that, sir?

Q I'm asking you. I don't see it in the document. I'm asking you the question.

A Physical memory, page file. I believe the page file is part of a snapshot. A page file is a presentation. As far as I can understand it, it's a presentation of a physical memory. There might be operating systems or cases where a page file is also in physical memory, but it's not necessarily true. So typically, a page file would not be in physical memory.

Q Can you read for me, please, if you go to the top of the second column on that first page of Huseinovic, it starts with: "By using a VMWare

Workstation." Look at that and please let me know when you're done.

A You want me to read that paragraph, sir?

Q Just to yourself, and please let me know when you're finished.

A I'm finished.

Q This is describing, and to paraphrase it and simplify it, two options to save physical memory, state and data; is that right?

A It talks about a very specific product called VMWare Workstation. And within that product, there were two options to save physical memory.

Q And one is, it talks about, and, again, I'm paraphrasing, but using a suspend option to preserve a vmem file?

A I see that, yes.

Q And the second is to take a virtual machine snapshot, right?

A A virtual machine snapshot that consists of multiple files, yes.

Q Can we agree that you couldn't perform

either of those options if the computer were powered off?

A If the computer is powered off, it doesn't have physical memory state necessarily.

Q Right. So if the computer is powered off, you couldn't perform either of those options. Is that true or false?

A I don't know about the specific product.

Q How about on a virtual machine? If the virtual machine were powered off, you couldn't perform either of these two options to preserve data from it?

A So if you had not taken a snapshot or the physical memory, as cited here, prior to powering off the machine, if you power off the machine, then there will be no physical memory footprint to perform that operation. But it might be the case that you performed the snapshot prior to powering off the machine. It really depends on the order of events.

MR. LUMISH: Let's go off the record for a second.

(A recess was had.)
BY MR. LUMISH:
Q So back to your declaration, please, Doctor. So, again, using as an example, Exhibit 1002 from the '31 procedure, you -- let me ask you to look at Paragraph 10.
A Of my exhibit? Of my declaration? Which declaration are you referring to?
Q 1002 from the '031 proceeding, but let me tell you, for the record, the paragraphs I'm about to point you to are in all of the three declarations, and all of the same paragraph numbers, and I believe they're identical in text.
A I'm opening one of them. That's what I want to know.
Q The one I told you the first time. So the '031 is a good one to use as an example.
A I have it here.
Q So starting on Paragraph 10, you say: "I have further been advised that the ultimate conclusion of whether a claim is obvious should be based upon several factual determinations. That

is, a determination of obviousness requires inquiries into" and then you innumerate four things.

Do you see that?

A Yes.

Q I assume this is legal background that was provided to you from counsel?

A That's exactly true.

Q I just want to point your attention to the word "requires." You said that determination of obviousness requires. So you understand that the four things that follow that colon after "requires inquiries into" are mandatory things for establishing obviousness, right?

A It is based upon several factual determinations, yes.

Q And the fourth one, the fourth on the list is: "Any secondary evidence bearing on obviousness," right?

A Correct.

Q Now, your section here on legal background goes into more detail about those secondary

considerations. If you turn to Paragraph 17, you say there: "With regard to secondary considerations of non-obviousness, I've been advised that any objective evidence may be considered as an indication that the claimed invention would not have been obvious at the time the claimed invention was made. I understand that the purpose of secondary considerations is to prevent a hindsight analysis of the obviousness of the claims."

And then in Paragraph 18, you list what you call several factors.

Do you see that?

A I do.

Q Okay. So then 18 and then in 19, you also talk about the nexus requirement of these secondary considerations.

Here's the big question: You have these multiple paragraphs, Paragraphs 10 and 17 through 19 in all three of your declarations, laying out the requirement to consider secondary considerations and then what they are and how to

do it. But there's nowhere in any of your declarations where you actually consider any of these factors or work through any evidence or analysis to establish that you're not using hindsight and that the secondary considerations don't show that; is that true?

MR. ARGENTI: Objection. Form.

BY THE WITNESS:

A When I performed my analysis, I considered all of these to be part of my declaration and my opinion. I formed my opinion based on all these principles. And although you referred to these secondary considerations, I also looked into the secondary considerations, too.

BY MR. LUMISH:

Q You didn't put it in your declaration, though, right? There are no paragraphs in your declaration addressing secondary considerations, other than Paragraphs 10 and 17 through 19; isn't that true?

A Even if that's true, which I have to check, it doesn't automatically mean that I did

not consider them.

Q In particular, there is no discussion in any of your declarations of copying as a secondary consideration and how it plays into your obviousness analysis, right?

A Can you repeat the question? What do you mean by "copying"?

Q Copying. Copying by somebody else of Orca, its patents, its technology.

A I was not asked to consider -- I considered factors of -- for example, I considered all of these as part of my declarations. I don't know exactly what -- the specific item that you talk about, I need to understand better what you're referring to and what it is for me to even make an opinion or tell you if I have seen it or have not seen it.

As part of this process, I saw a lot of documents and I performed a lot of analysis. Some of that analysis is reflected in my declaration, some of it is not, not because -- because, I mean, I had limited -- I had to prepare a declaration.

So I have seen a lot of documents and I have taken into consideration, several factors from the secondary considerations.

So unless you point me to something specific, I won't be able to tell you.

Q There's nothing I can point you to because it's not in your declaration, Doctor. Let me try it this way: If you look at Paragraph 18, you list factors.

Do you see that?

A I do.

Q And so the first one you say is: "The factors include the commercial success of the invention."

Do you see that one?

A I do.

Q There is nowhere else in your declaration anywhere where you elaborate on or provide analysis of commercial success of the invention by Orca, by Wiz, by anybody, as part of the question of whether the claims are obvious.

Is that true?

A Again, I might have looked at documents. I might not have included as part of my declaration. I might not have opined on them. It doesn't mean that I have not considered them.

Q Well, in fact, the opposite. You've already told me you did consider it, right?

A I said that, again, I cannot -- I have seen a lot of documents. My declaration is -- stands as it is.

I don't -- I didn't put all of my -- I didn't analyze every single document in my declaration that I have come across, but I considered a lot of this information, because it's very broad, as you can see here. It talks about skepticism of the invention, licensing of the invention, copying of the invention.

Q I'm going to get to all those.

A Oh, no problem. I reviewed files and inspected results of the invention, so I basically look -- I considered different -- a lot of information because I was also performing the prior analysis of prior art, as you can imagine.

Of course, a lot of documents from different sources came in front of me.

Q Let's focus on my question, though.

You testified that you have considered all these factors, but can we agree there is no paragraphs after Paragraph 19, where you address any of those factors?

A If you say so. I have to look at my entire declaration to see, but if you say so that I have not considered them -- sure. I have considered them, but I have not potentially included them as part of my declaration --

Q You considered commercial success, for example, but you didn't put any analysis or opinions or give us any of your reasoning behind it anywhere in your declarations, right?

A As I said, I performed a very comprehensive analysis. Some of the documents that I ran across, they are not reflecting, necessarily, in my declaration.

I have only so many exhibits and so much discussion. My declaration is very large as it

is, so if it was something that I came across and is not part of my declaration, it doesn't mean that I did not consider it.

Q What documents of commercial success did you consider but not then explain in your declarations?

A I don't have anything in front of me, and I would be helpless to give you a specific, but as I told you, performing the analysis of the patents, I ran across many documents, discussing the technologies and products of both companies, as part of what I was doing and as part of my prior art.

And I would say basically, while I might not have covered -- no, actually, I cannot opine if I covered everything or not. I believe that I ran across, as I said, many different documents, and I don't want to give a statement about which portions and what.

I believe that I covered everything in my analysis and considered everything. It might not have made it into my declaration, though. Yes,

you are correct. It may not have made it into my declaration.

Q I'm really confused. So now you just said you considered all these things in your analysis, so you considered copying. You considered commercial success. You considered all of those things that are here in Paragraph 18, but you didn't write about any of them?

A It says also in 19, that there must be a significant nexus between the claimed invention and the evidence of secondary considerations.

I understand this nexus is served to provide the link between the merits of the claimed invention and the evidence of secondary.

That in order for secondary -- Paragraph 19 says that I have been further advised that in order for evidence of secondary considerations to be significant, there must be a sufficient nexus between the claimed invention and the evidence of secondary consideration.

I understand that this is an exercise to provide the link between the merits of the claimed

invention and the evidence of secondary considerations provided. It might have been the case that there was not significant nexus.

Q I'm not asking might have been. There is nowhere in your declarations where you say there is not a sufficient nexus between this factor for secondary considerations and the claimed invention, right?

A As I said in my declaration, I don't mention anything, so I --

Q You didn't mention anything. And then before you said something, like you didn't do all of them, you didn't do any of them. There's no place in your declarations where you walked through any one of these factors and gave any analysis or reasoning for why it does or does not arise to being a secondary consideration of nonobviousness and whether there was or wasn't a nexus to the claimed invention; isn't that right?

A In my declaration, there might be no mention, but it does not automatically means that I did not consider them.

Q Yeah, I mean, it's the opposite. You've told me you did consider it, but you didn't put it in your declaration.

Is that true or false?

A I said that I cannot recall all the elements that went into my analysis of that specific secondary consideration, but since I don't have it in my declaration, it's not in my declaration.

Q On commercial success, you mentioned earlier that the company you helped found, Quokka, had, you thought about $10 million in revenues last year.

Do you consider it to be a commercial success?

MR. ARGENTI: Objection. Scope. Form.

BY THE WITNESS:

A I'm not sure how this is relevant to the specific declarations and, you know, mantra --

BY MR. LUMISH:

Q That's for the judge to decide, Doctor.

Can you answer my question?

A Again --

MR. ARGENTI: Objection. Scope. Form.

BY THE WITNESS:

A Again, I would say that there are different metrics that someone can value commercial success. In some cases, being small, is -- and have revenue that is commensurate to your size, is a commercial success.

Other cases, people look into revenue or -- but there are too many metrics. And commercial success is defined differently for different sectors of --

BY MR. LUMISH:

Q That's not what I'm asking. I'm not asking you how it's defined and how many metrics are there. My questions are very simple.

Do you consider Quokka's $10 million in revenues in 2024 to show that it's a commercial success?

MR. ARGENTI: Objection. Scope. Form.

BY THE WITNESS:

A You have to tell me under which metrics.

I'm not an expert on commercial --
BY MR. LUMISH:
Q Metrics of revenue, $10 million in revenue --
A Compared to what?
Q -- is the only metric.
A Compared to what.
Q That's it.
A Other companies that perform the same task? No, I mean, it is irrelevant metric, sir. It's not an absolute metric. Commercial success, it might be the number of people you affect. It might -- it's not only merit based on the fact that you're here and everything. You have to have metrics that go into definition of what is commercial success.
Q You're chairman of the board of Quokka, right?
A That's correct, sir.
Q Does the board consider Quokka a commercial success?
MR. ARGENTI: Objection. Scope. Form.

BY THE WITNESS:

A Again, I want to preface it that every board has different metrics to associate success with the company. A lot of -- someone can say commercial success is that the company is alive after being through a period of semi-recession that we have just went through.

Others would want -- a VC might want revenue that is -- there are different metrics, so I mean, you're asking me a question --

Q I'm not asking about any of that. I'm not asking about anything anybody else does or thinks or any other metrics.

I'm asking you if Quokka's board, of which you are the chair, thinks that the $10 million of revenue that Quokka has obtained last year, is a commercial success?

MR. ARGENTI: Objection. Scope. Form.

BY THE WITNESS:

A Apparently, what is a commercial success as I would -- I keep saying it, but I think I'm not hear, depends on many factors.

Again, the $10 million that you just mentioned, is one of the factors, and I need to understand better -- and Quokka has many other metrics that go into the definition if it's a success or not. For example, growth; for example, you know, customer retention; for example, turnover, including turnover of customers, turnover of personnel; growth, you know, the ability to attract capital, the ability to sustain the company and grow.

And different people have different metrics about that and ability to compete within a environment. There are so many big things that go to what constitutes a commercial success, which if I give you a specific answer, I would be imprecise.

MR. LUMISH: I object to all the nonresponsive answer. And I just, to take it from the repeated answer that you keep giving me, you're not going to actually answer my question, so I'll move on.

BY MR. LUMISH:

Q On the factors that we talked about before, you don't have anything in your report to discuss any of the copying of the invention, right?

A I don't believe so.

Q You don't have any discussion of any actual industry praise for Orca or its technology or its invention, correct?

A I believe that is correct.

Q You don't have anything where you discuss anything you perceive as a long felt need for the -- or the lack of a long felt need for the claimed invention, right?

A I don't believe so.

Q You don't have any discussion of any skepticism or the lack of skepticism in the industry for the claimed invention?

A I don't believe so.

Q You don't have any discussion of any failure of others or the lack of a failure of others related to the claimed invention?

A I believe that's correct.

Q You don't have any discussion of any licensing of the invention?

A I believe that's correct.

Q You don't have any discussion of -- and this is not in your factors, but you don't have any discussion of any acquiescence or acceptance of the patented inventions; is that true?

A I was not asked to opine on that.

MR. LUMISH: Leyhbert, can I ask you, please, one more document. This, I think will be the last one in your set there. There's a document, it starts with the word "guide." It is 003 New. Thank you.

AV TECH SHARP: Okay. One second, please.

(A certain document was marked Deposition Exhibit 2076 for identification, as of 03/04/2025.)

MR. LUMISH: And this will be Exhibit 2076.

AV TECH SHARP: That's correct. Yes, sir.

BY MR. LUMISH:

Q While he's bringing that up, let me ask

you about a couple of other things.

Are you familiar with CRN as a publication entity in the security industry?

A CRN, I believe -- I think I've run across it. I think they also published some books that I might have in my book collection.

Q Is CRN a source of materials that you yourself review in doing your work?

A I don't recall. I might have. I believe I ran across some documents. I'm not sure if they made it into my declarations.

Q Do you have any opinions as to whether CRN is an authoritative or a reliable source of information?

A I cannot opine on that off the cuff. I have to check. There is a lot of information in some of these entities and organizations. You know, they go through phases, so I wouldn't be able to give you an exact answer about that for the specific time frame that -- that -- if you give me a time frame and time, I might be able to, but I don't have something I can opine.

Q Currently. The last few years.

How about Crunchbase, are you familiar with it?

A Crunchbase, is that a website, I think? It's a website, right?

Q It's a source. I don't know if it's only a website, but it has a website.

A I believe it's a website with a paid service. I have ran across it, yes.

Q Is it something you yourself read and rely on in any way in your work?

MR. ARGENTI: Objection. Scope.

BY THE WITNESS:

A I cannot opine on that. Like, I mean, I ran across it, but I wouldn't say I use it as part of my work.

BY MR. LUMISH:

Q Do you have any opinions as to whether it's an authoritative or reliable source of information, Crunchbase?

MR. ARGENTI: Objection. Scope.

BY THE WITNESS:

A I wouldn't be able to opine on that. I'm sorry.
BY MR. LUMISH:
Q How about TechCrunch? Are you familiar with TechCrunch?
MR. ARGENTI: Same objection.
BY THE WITNESS:
A I have run across it. Again, I think it's another website that has information. I might have run across it as part of my involvement in the tech industry. I wouldn't be able to opine if it's a good source of information or not.
BY MR. LUMISH:
Q How about SINET or the Security Innovation Network?
MR. ARGENTI: Objection. Scope.
BY THE WITNESS:
A Again --
MR. ARGENTI: Form.
BY THE WITNESS:
A Again, I won't be able to opine about the validity of the source until I've been able to be

provided with more time to investigate and/or take a look at the documents from them. I have used some of the -- I've run across documents from that source, but I don't know how accurate or reliable they are.

BY MR. LUMISH:

Q Is SINET a source you go to for information in doing your work?

A I wouldn't say that.

Q Have you ever heard of Security Current or the awards they give out called the CISO Choice Awards?

A I'm not familiar with that.

Q Are you familiar with CB Insights, capital C, capital B, Insights?

A I'm not familiar with that.

Q Are you familiar with BetaNews?

A I've read some news from there. I don't know how reliable or accurate they are.

Q Do you read that site or that source as part of doing your work?

A I read it as part of browsing the web and

reading material, but I don't do it as part of my everyday work, no.

Q But you don't have any opinions as to whether it's an authoritative or reliable source?

A I wouldn't be able to opine on that because I didn't have enough time to look at it, and I have not -- I don't use it as part of my everyday work.

Q Are you familiar with SC Media?

A I might have run across some of the articles that they have published, but, again, it's not part of my everyday work. I receive a lot of information as part of my everyday activities. I don't rely on sources that are, again, not being validated. I use IEEE. I use other sources, which, you know, they are reviewed and peer-reviewed as part of my job, ACM, other sources.

Q What was the first one you said before ACM?

A IEEE.

Q IEEE. And are there other sources you do

review in addition to those two?

MR. ARGENTI: Objection. Scope.

BY THE WITNESS:

A I wouldn't be able to be exhaustive. I gave you two examples. They are not the only ones.

BY MR. LUMISH:

Q That doesn't mean that you can't give me any more. Are there any more that you're aware that you use as part of your work, other sources of information?

MR. ARGENTI: Objection. Scope.

THE WITNESS: Not off the top of my head. I have others. I'm happy to -- if you give me enough time, I'm happy to go look at my daily and provide a potential list if you would like, but I don't have it now on top of my head. You're asking a question I have not opined on, and I have not thought about.

BY MR. LUMISH:

Q IEEE and ACM are providing technical information often in an academic setting, right?

A Not also. The IEEE is also part of standards that many commercial companies -- and also it has a lot of publications that are -- that highlight commercial successes and technology successes.

It's actually the Institute of Electrical -- and I might be paraphrasing it -- of electrical -- IEEE is -- again, please don't -- Institute of Electrical Engineers, and it has a lot of different publications. They're usually from magazines all the way to peer-reviewed articles and journals.

Q So back to SC Media, you don't have any opinion as to whether it's an authoritative or reliable source?

MR. ARGENTI: Objection. Scope.

BY THE WITNESS:

A I wouldn't be able to help with you that. I'm sorry.

BY MR. LUMISH:

Q And it's published, I understand, by something called the Cyber Risk Alliance. Are you

familiar with the Cyber Risk Alliance?

A I might have seen it, but I would not be able to tell you if it's a -- I wouldn't even know who is part of that alliance and what it entails.

Q And are you familiar with something called the Software Analyst Substack?

A No.

Q There are two authors of that; one is named Francis Odum, and the other is James Berthoty -- or Berthoty, I should say.

Do you know either of those gentlemen?

A No, sir.

Q Never heard of them?

A I might have run across their names, but I have not interacted with them, and I have not -- to the best of my knowledge, I have not read articles from the two of them, but I might have, you know, as part of what I read every day.

Q I'm sorry. Go ahead.

A I don't believe I have.

Q So no opinions from you as to whether Software Analyst Substack or Mr. Odum or

Mr. Berthoty are authoritative and reliable sources of information?

MR. ARGENTI: Objection. Scope.

BY THE WITNESS:

A I wouldn't be able to.

MR. LUMISH: Okay. Let's get that last document.

AV TECH SHARP: It's already available just in case.

MR. LUMISH: It should be in the chat at the link there.

MR. ARGENTI: I'll lodge my objections again that this is not a document that Dr. Stavrou addresses in his declaration testimony. So I will object to any and all questions regarding this document as outside the scope of cross-examination.

I will also preserve objections on a relevance basis, prejudice, authentication, and to the extent that it's used for hearsay purposes.

BY MR. LUMISH:

Q Exhibit 2076, you'll see is a printout

from the Software Analyst Substack site that I mentioned to you before, and the title of this document is: Redefining CNAPP: A Complete Guide To the Future of Cloud Security.

I just want to know if you've ever seen this guide before?

A Never.

Q Never heard of it?

A Nope.

Q And so you don't have any opinions as to whether this publication from the Software Analyst Substack group is reliable or authoritative?

A I wouldn't be able to help you with that, no.

MR. LUMISH: All right. Let me give my colleague one chance here to tell me otherwise.

I'm out of questions for you today, Dr. Stavrou. Unless Mr. Argenti has questions for you, I think we're done for the day.

MR. ARGENTI: Why don't we take a short break, and I can come back and confirm?

MR. LUMISH: Thank you.

MR. ARGENTI: Let's call it ten minutes for now. I may be back before then.

MR. LUMISH: I'll just keep watching the screen. I'm going to go off screen, but whenever you come back on, I'll be ready.

MR. ARGENTI: Sounds good.

MR. LUMISH: Thank you.

(A recess was had.)

MR. ARGENTI: I just have one thing I want to ask about as a follow-up. Are we back on the record yet?

EXAMINATION

BY MR. ARGENTI:

Q Dr. Stavrou, can you turn in your '031 declaration to Paragraph 149, please, Page 123 of your declaration?

A Yes, sir.

Q At the end of the first sentence, where you refer to Budko, do you remember earlier today, you were asked about that sentence, and you said you thought it was a typo?

A Yes, sir.

Q Would you like to correct that typo now?
A I believe I also said that this reference -- give me one second. Just give me one second, please.
MR. LUMISH: I'll just object as to form.
BY THE WITNESS:
A It's a typo. The sentence should have ended: "In my opinion, this would have been obvious further in view of Price," not Budko. I think it was a typo.
MR. ARGENTI: No further questions.
MR. LUMISH: All right. Nothing for me.
(Deposition concluded at 5:23 p.m. CST.)

CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC

I, Theresa A. Vorkapic, Certified Reporter and Notary Public within and for the State of Illinois do hereby certify:

That Angelos Stavrou, Ph.D., the witness whose deposition is hereinbefore set forth,

Was duly sworn by me before the commencement of such deposition and that such deposition was taken before me and is a true record of the testimony given by such witness.

I further certify that the adverse party, patent owner, was represented by counsel at the deposition.

I further certify that the deposition of Angelos Stavrou, Ph.D., occurred virtually on Wednesday, March 5, 2025, commencing at 9:06 a.m. to 5:23 p.m. CST.

I further certify the inspection, reading and signing of said deposition was waived on the record by agreement of all parties.

I further certify that I am not related to any of the parties to this action by blood

or marriage, I am not employed by or an attorney to any of the parties to this action, and that I am in no way interested, financially or otherwise, in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 6th day of March, 2025.



Theresa A. Vorkapic
My commission expires November 6, 2027.
NOTARY PUBLIC IN AND FOR THE
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