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Transcript of **Prabhat Mishra, Ph.D.**

Thursday, June 26, 2025

Lenovo (United States) Inc. v. Intellectual Ventures, LLC

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Reference Number: 156544

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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LENOVO (UNITED STATES) Inc.

Petitioner,

v.

INTELLECTUAL VENTURES, II LLC,

Patent Owner,

_____

IPR2024-00109

U.S. Patent Number 8,474,016

_____

Remote Deposition

Thursday, June 26, 2025

Deposition via Zoom of PRABHAT MISHRA, Ph.D., a witness herein, called for examination by counsel for Petitioner in the above-entitled matter, pursuant to notice, the witness being duly sworn by MARY GRACE CASTLEBERRY, a Notary Public in and for the State of Maryland, taken at 9:34 a.m. EDT, Thursday, June 26, 2025, and the proceedings being taken down by Stenotype by MARY GRACE CASTLEBERRY, RPR, and transcribed under her direction.

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APPEARANCES: (Continued)

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C O N T E N T S

WITNESS	EXAMINATION BY COUNSEL FOR	
PRABHAT MISHRA, Ph.D.	PETITIONER	PATENT OWNER
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E X H I B I T S

EXHIBIT		PAGE
NO. 1001	United Patent Number 8,474,016	106
NO. 1003	Declaration of Sigurd Meldal, Dr. Scient	109
NO. 1005	United States Patent Application Publication US 2003/0226015 A1, Neufeld	11
NO. 1007	United States Patent Application Publication US 2003/0097503 A1, Huckins	131
NO. 1020	IPMI Specification v1.5	108

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EXHIBIT		PAGE
NO. 2007	Expert Report of Dr. Prabhat Mishra in Support of Patent Owner's Response	9
NO. 2010	Texas Instruments document titled A Basic Guide to I2C	102
NO. 2011	PCI Local Bus Specification, Revision 2.3, March 29, 2002	102

P R O C E E D I N G S

Whereupon,

PRABHAT MISHRA, Ph.D.,

was called as a witness by counsel for Petitioner, and having been duly sworn by the Notary Public, was examined and testified as follows:

EXAMINATION BY COUNSEL FOR PETITIONER

BY MR. HEINTZ:

Q. Good morning, Dr. Mishra. How are you today?

A. I'm good. Good morning, Dr. Heintz.

Q. It's just Mr. Heintz. No worries.

Dr. Mishra, we haven't met before just a few minutes ago, correct?

A. Yes, that is correct.

Q. Sir, have you ever been deposed before?

A. In patent settings, no.

Q. Okay. Have you been deposed in other settings?

A. Yes.

Q. What other settings were those?

A. Those are not related to patents.

Q. I understand. And can you tell me what was it was relating to?
A. Some of them are personal, some of them are witness but not related to patents.
Q. Okay. Were any of them criminal matters?
A. No.
Q. Dr. Mishra, as you know, this deposition is being recorded by the reporter, Ms. Castleberry, so it's important that when we conduct this deposition, that we not speak over each other. So I'll ask that you wait until I finish asking the question before you give your answer, and I will endeavor to wait until you finish your answer before I ask the next question. Is that okay with you?
A. Yes.
Q. All right. And, sir, I'll assume that if I ask a question and you answer it, you understood the question, and you should also know that if you don't understand a question, you are free to ask me to clarify it or rephrase it. Is that all right?
A. Yes.
Q. Dr. Mishra, is there any reason that you

couldn't give full and complete answers to my questions today, medical or otherwise?

MR. GOLUB: Object to the form.

THE WITNESS: No.

BY MR. HEINTZ:

Q. Okay. Dr. Mishra, I'm going to ask you to open what's been marked as Exhibit 2007 in the chat window and that's your declaration, I believe, in this case.

(Exhibit No. 2007 was identified for the record.)

BY MR. HEINTZ:

Q. Could you please open that and let me know when you have it open?

A. It's open.

Q. Okay. So I'll ask you to take a quick look through it and confirm that this is in fact the declaration you submitted in this IPR, which is IPR2024-00109.

A. That's correct.

Q. And, sir, that's your signature on the last page of Exhibit 2007, is that correct?

A. Yes, Mr. Heintz.

Q. Thank you, sir.

Dr. Mishra, I'll ask you to turn to paragraph 104, paragraph 104 of Exhibit 2007, and just let me know when you're there.

A. I'm in 104.

Q. This appears in section 11 of your declaration where you discuss the alleged failures by petitioner to demonstrate the unpatentability of the challenged claims for ground 1, correct?

A. That is correct.

Q. In paragraph 104, you state that Neufeld or Neufeld -- and before I begin, how do you prefer to pronounce that last name of that reference, Neufeld or Neufeld?

A. Either way is fine. I actually don't know what's the correct one.

Q. Okay. Neither do I so I'll say Neufeld for today, but I may say Neufeld by mistake. If I do that, I hope you'll understand that I'm referring to the same document. Is that okay?

A. Yes.

Q. All right. And for the record, Neufeld is Exhibit 1005.

(Exhibit No. 1005 was identified for the record.)

BY MR. HEINTZ:

Q. And if you like, you can download Exhibit 1005, which is also in your chat window.

A. It's done.

Q. Okay. So I'm going to refer to, again, Exhibit 2007, paragraph 104, which is your declaration discussing Neufeld. In paragraph 104, you state that Neufeld is directed toward an out-of-band remote management system, correct?

MR. GOLUB: Objection.

MR. HEINTZ: Counsel, what's the basis of the objection?

MR. GOLUB: It doesn't look like you read the sentence correctly.

MR. HEINTZ: All right. Let me try that again.

BY MR. HEINTZ:

Q. In paragraph 104, there is a statement

that appears at the top of page 65 that says, "Neufeld is directed to an out-of-band remote management system."

Do you see that, Dr. Mishra?

A. That's correct.

Q. Then in header A below paragraph 104 in your declaration, that paragraph heading says that Neufeld's managed server does not receive in-band remote management commands. Do you see that?

A. That is correct.

Q. And is that your opinion, that Neufeld does not receive in-band remote management commands?

A. Yes.

Q. Okay. And then going on to paragraph 105 of your declaration, you state that petitioner's assertion that Neufeld discloses or suggests the transmission of in-band remote management commands from the remote management PC to the managed server is directly at odds with the express teachings of the reference, is that correct?

A. Yes.

Q. And in that sentence, by "the reference,"

you're referring to Neufeld, which is Exhibit 1005, correct?

A. That's correct.

Q. All right. And then at the end of paragraph 105, which is on the next page, page 66 of Exhibit 2007, you say that petitioner's attempt to characterize Neufeld as supporting in-band management is inconsistent with the entire thrust of Neufeld. Do you see that?

A. Yes.

Q. And that's your opinion, correct?

A. That is correct.

Q. By "thrust of Neufeld" in that statement, are you referring to your analysis in paragraph 81 where you state your belief that Neufeld disparages in-band systems?

A. Yes and no. So --

Q. Okay.

A. -- yes, Neufeld do disparage in-band systems, and no in the sense this in-band thrust basically means the whole scope of Neufeld is about out-of-band remote management system if we look at

the entirety of the Neufeld.

THE REPORTER: I'm sorry, if we look at --

THE WITNESS: Entirety, e-n-t-i-r-e-t-y. So entirely if I look at the document, the scope of Neufeld is about out-of-band remote management system.

BY MR. HEINTZ:

Q. So it's your opinion in Neufeld that all remote management commands are received only out of band, not in-band, correct?

A. That is correct.

Q. And then just to put a highlight to this, I ask you to turn to paragraph 91 of your declaration. That starts on page 57. Okay? And there you say that Neufeld's, quote, singular focus as an out-of-band remote management system, correct?

A. You are referring to the second line of 91?

Q. Yes. Well, first and second line. It says, "Given Neufeld's singular focus," on the second line, and then continues on the third line, "As an out-of-band remote management solution." You're

saying that Neufeld is singularly focused on an out-of-band remote management solution, correct?

A. That is my understanding.

Q. Because nothing in Neufeld, according to your understanding, discloses anything about in-band remote management commands, correct?

A. That is my understanding.

Q. Let's go back to paragraph 81, Dr. Mishra, and just let me know when you're back at that paragraph.

A. I am there.

Q. All right. So starting on the first line of the paragraph and going on to the second line, you say that Neufeld disparages -- which is both underlined and italicized -- disparages in-band systems in which communication with the server is only possible when the server is able to communicate over its normal network connection in favor of out-of-band communications, which Neufeld characterized as a much more powerful tool. Do you see that?

A. Yes.

Q. Sir, what's your understanding of the meaning of the word "disparage"?

A. So my point was to highlight the fact that Neufeld did not like in-band systems as a mechanism but remote management for various reasons.

Q. Okay. Do you understand, sir, that there can be a difference between pointing out a limitation of a thing and disparaging that thing?

MR. GOLUB: Objection.

MR. HEINTZ: What's the basis of the objection, Counsel?

MR. GOLUB: It's outside the scope.

MR. HEINTZ: Outside the scope of what?

MR. GOLUB: It just uses the term disparage.

MR. HEINTZ: Okay.

BY MR. HEINTZ:

Q. Dr. Mishra, I'll ask you to answer my question if you're able to.

A. I'm not an English native speaker. When I say disparages, I meant he highlighted the drawbacks and limitations saying this is not a good idea, so

he's not in favor of it.

Q. Well, let me ask you again, sir, that you understand there can be a difference between pointing out a limitation of something and disparaging that thing, do you not?

A. Again, I'm not in a native English speaker. If you believe this word should be changed, I'm fine with it.

Q. Okay. Well, let me give you an example. If one is describing an electric car with an electric motor and one states that the motor can only run when the batteries are charged, would you say that's disparaging the use of electric motors in a car?

MR. GOLUB: Objection, outside the scope.

BY MR. HEINTZ:

Q. Dr. Mishra, you are to answer the question if you are able to. The objection by counsel is not an instruction for you not to answer.

A. Again, I'm not sure how it relates to this sentence.

Q. Regardless of whether you understand how it relates to the sentence, are you able to answer my

question, Dr. Mishra?

A. I answered it, sir.

Q. Okay. Well, what is the answer to the question? And I'll repeat it just so you're sure.

A. The example you provided, I do not see a connection to that to what I wrote. I already highlighted if the word disparages from an English dictionary point of view is not correct, I am fine if you want to replace it with highlights or over-highlights, whatever that is.

The concept I'm trying to convey here or I highlight, emphasize here, that Neufeld is not in favor of in-band systems or saying it's a bad idea to go for the in-band systems.

Q. Okay. So you're using disparage in your declaration to mean an assertion that the reference is saying that in-band communications are a bad idea, is that correct?

A. That's not what I said.

Q. Okay.

A. Neufeld indicated using in-band system for remote management is a bad idea. In-band

communication is not a bad idea. Neufeld is not saying that.

Q. I see. So to make this clear, using in-band communications to receive remote management commands is a bad idea according to your understanding of Neufeld, is that correct?

A. That is correct.

Q. Okay. All right. Now, in your declaration, and this is again in paragraph 81, you cite paragraphs 11 through 14 of Neufeld in support of that statement, correct?

A. You are referring to the last line, "A capability that is only possible with an out-of-band remote management system." Is that the context?

Q. Well, maybe not exactly. I'm looking at paragraph 81 of your declaration on page 49, okay?

A. So -- yes. So there are two places, 11 to 14, were cited. I'm trying to figure out which cite is it, on the 49 or at the beginning of 50? Which one are you referring to?

Q. I'm referring to the one on page 49.

A. Would you repeat the question, please?

Q. Sure. You are citing paragraphs 11 through 14 of Neufeld in support of your statement that Neufeld disparages in-band systems, correct?

A. That is correct.

Q. Now, I would like you to take a look at Neufeld now which I believe you downloaded earlier.

A. I am at Neufeld.

Q. Okay. Now, in paragraph 11 of Neufeld, the statement appears that --

A. Just give me a minute.

Q. Oh, sure.

A. Yes.

MR. GOLUB: What page are we on?

MR. HEINTZ: We are on Exhibit 1005 which is Neufeld, Mr. Golub.

MR. GOLUB: That's the exhibit number but what page number are we on?

MR. HEINTZ: Oh. Well, we're on page 5.

MR. GOLUB: Okay.

MR. HEINTZ: In paragraph 11.

MR. GOLUB: Thank you.

BY MR. HEINTZ:

Q. Okay. So, Dr. Mishra --
A. I'm sorry, you meant page 12 or paragraph 12?
Q. Actually, paragraph 11 --
A. That's on page 1.
Q. No, it's on page 5.
A. Okay. I got it. Paragraph 11. I'm there.
Q. Okay. And just so we're all clear, that's the paragraph that begins with the words, "Remote management tools," correct?
A. That's correct.
Q. Now, that paragraph states about midway through that, "In-Band communication with the server is, accordingly, only possible when the server is able to communicate over its normal network connection. Practically speaking, this limitation restricts in-band communication to times when the OS of the managed server is operational (online)," correct?
A. Yes.
Q. Okay. And that appears to be the basis

for your statement in your declaration, paragraph 81, that paragraph 11 of Neufeld is disparaging in-band communication of remote management commands --

MR. GOLUB: Objection.

BY MR. HEINTZ:

Q. -- is that true?

A. That's not correct.

Q. Okay. What was wrong with that statement?

A. This paragraph is simply defining what is in-band communication. So you have to take 11 to 14 entirety to understand that he talks about in-band communication, he talks about out-of-band communication, then he talks about why out-of-band communication remote management is beneficial.

Q. Okay. But I'm not asking about why Neufeld says out-of-band communication is beneficial. I'm asking you about the basis for your statement in paragraph 81 that Neufeld disparages in-band communication of remote management messages. Now, I see in paragraph 11 it does more than define what remote -- sorry, what in-band communication of remote management messages is. That's in the first part of

the paragraph. In the second part of the paragraph, there is a statement that says, you know, in short, that you can only use in-band communications when, as a practical matter, the OS of the managed server is operational (online), right? And you've quoted parts of that sentence in your declaration at paragraph 81.

So my question for you is, is it those statements that I read earlier in paragraph 11 that form the basis for your assertion that Neufeld disparages in-band systems for remote management communication?

A. I'm repeat my answer again. I didn't quote 0011. I quoted 0011 to 14.

Q. Okay. So let's go to paragraph 81. Let's see if what you just said is accurate. So in paragraph 81, starting on line 2 and going on to line 3, I see a quote that reads, "Only possible when the server is able to communicate over its normal network connection." You see that, right?

A. Yes.

Q. That's a quote from paragraph 11 of Neufeld, correct?

A. Yes.

Q. So with respect to paragraph 11, the part of paragraph 11 that supports your assertion that Neufeld disparages in-band systems is the quoted language I just read to you, correct?

MR. GOLUB: Objection.

THE WITNESS: No.

BY MR. HEINTZ:

Q. No, okay. What was wrong with that statement?

A. With due respect, Mr. Heintz, you are quoting half of the sentence.

Q. Okay.

A. The full sentence starts with in-band, then I talked about in favor of out-of-band, then I cited 11 to 14.

Q. Okay.

A. So "disparages" does not apply only to that quoted part.

Q. I think I understand your position. So do I understand correctly that when the patent discusses out of band being a much more powerful tool, that's

also disparaging in-band communication of remote management messages, is that right?

A. Yes and no.

Q. Okay. Why is it right and why is it not right?

A. So it talks about why in-band communication is not suitable, so that's the yes part. And the no part is out-of-band, the whole scope of Neufeld is provide a good solution for out-of-band remote management system.

Q. Okay. Let me go to paragraph 12. Is the statement that out-of-band communication is a much more powerful tool for server management in paragraph 12 a disparagement of in-band communication of remote management messages?

MR. GOLUB: Objection, misstates the exhibit.

THE WITNESS: Are you referring to, Mr. Heintz, paragraph 12 of Neufeld or paragraph 12 of my declaration?

BY MR. HEINTZ:

Q. I'm sorry for the lack of clarity,

Dr. Mishra. I'm referring to the statement in paragraph 12, and I'll read it in its entirety. It's the first sentence that states, "Out-of-band communication, which is not performed across the managed server's normal connection to the network, is a much more powerful tool for server management."

And the question is, is that statement a disparagement of in-band communication of remote management requests?

A. Yes and no.

Q. Okay.

A. Yes, because in the previous paragraph it talked about the limitation of in-band, and this paragraph is talking about out of band is much more powerful. No, in the sense it's not directly referring in-band in this sentence.

Q. But yes in the sense that your belief is because Neufeld is saying that out of band is much more powerful, that's a disparagement of in-band, correct?

A. It's talking about limitation.

Q. Okay. In paragraph 13, is there any

disparagement of in-band communication of remote management messages?

A. Please give me a moment to read.

Q. Sure. And to be clear, I mean paragraph 13 of Neufeld.

A. Yes, Mr. Heintz.

No.

Q. How about paragraph 14. Is anything in there a disparagement of in-band communication of remote management messages?

A. Please give me a moment to read.

Q. Sure.

A. No.

Q. Okay. Let's go to paragraph 15 of Neufeld, Dr. Mishra.

A. I am there.

Q. Okay. That's not one of the paragraphs of Neufeld that you cited in paragraph 81 of your declaration, correct?

A. Give me a moment to check.

Q. Sure.

A. No.

Q. Paragraph 15 says that an important goal in the development of remote server management tools is to increase the number of server problems that may be analyzed and repaired remotely (that is, without requiring direct, on-site intervention by a member of the management team), correct?

MR. GOLUB: Objection.

Mr. Heintz, you missed a word when you read.

BY MR. HEINTZ:

Q. All right. I'll read it again and I think -- let me withdraw that. I'll read the sentence again.

"An important goal in the development of remote server management tools is to increase the number of server problems that may be analyzed and repaired remotely (that is, without requiring direct, on-site intervention by a member of the network management team)," is that correct, Dr. Mishra? Did I read that correctly?

A. Yes, Mr. Heintz.

Q. And the next sentence says, "To facilitate

that goal, it is highly" -- sorry. Let me rephrase.

"To facilitate that goal, it is highly desirable to have a network management tool that is able to capture the maximum amount of information from a managed server in the maximum range of operational states of the server," and then four examples are given. One of those examples is in-band online. Do you see that?

A. Yes, I do.

Q. Doesn't that sentence say that it's highly desirable to have a server that can engage in all four forms of communication of remote management commands including in-band online?

A. Neufeld is talking about the possibilities.

Q. And he's saying having the maximum number of possibilities of those four options, including in-band online, is highly desirable. Isn't that what Neufeld is saying in paragraph 15?

A. That's one of the possibilities.

Q. And it's not just one of the possibilities. It's a highly desirable possibility

according to paragraph 15, correct?

A. There are only four possibilities.

Q. And doesn't paragraph 15 say it's highly desirable to have the maximum amount of those possibilities in a system?

A. These are the only four possibilities.

Q. Right. So it's possible to have a system that only engages in out-of-band communications, which would be possibilities 3 and 4, correct?

A. What is the context for discussion?

Q. The context is the statements in paragraph 15 of Neufeld, what Neufeld is describing in paragraph 15.

MR. GOLUB: Could you restate the question, please?

MR. HEINTZ: Counsel, there is nothing unclear about the question. If the witness needs it restated, I'm happy to do so.

BY MR. HEINTZ:

Q. Dr. Mishra, do you understand the question?

A. No.

Q. Okay. Let's try again.

So it's possible to have a system in which remote management commands are only communicated using options 3 and 4 in paragraph 15, which would be out-of-band online and out-of-band offline. That's a possibility, correct, Dr. Mishra?

A. This is totally out of context. This is simply setting the context why Neufeld is proposing this invention for out-of-band management. This one is simply saying, to set the context, how many ways you can manage a network, or under what scenarios you need to manage. If you consider in-band and out-of-band online and offline, there are only four possibilities. This paragraph is simply telling the obvious.

Q. Well, sir, it does more than that, doesn't it? What it says is it's highly desirable to have a network management tool that is able to capture the maximum amount of information from a managed server in the maximum range of operational states, and then it lists all four. Isn't that a statement in Neufeld stating that the best system is the one that can do

all four of those possibilities, yes or no?

A. No.

Q. Okay.

A. So I'll state the reason.

Q. All right.

A. The whole context of my declaration is to talk about Neufeld is all about out-of-band management. In that context, this paragraph has no meaning. This paragraph is simply saying the obvious. When you are doing the network management, you want to know what is happening to your server, whether it's doing in-band communication, out-of-band communication, whether they're offline or online. Irrespective of how you want to manage, you want to monitor these scenarios. You want to know these scenarios. This has nothing to do with my statement in the declaration.

Q. Okay. Let's go to paragraph 91 of your declaration. You looked at that a little bit earlier but I want to go back to that now.

A. I'm at 91 of my declaration.

Q. Correct. And again, that's 2007, for the

record.

Now, on the fifth line, you state, "Moving Neufeld's remote management commands to Network N as suggested by petitioner would transform Neufeld from an out-of-band solution to an in-band solution," and then the sentence goes on.

Do you see that portion of the sentence?

A. Yes.

Q. Okay. Now, just to set the table, by network N, we are talking about what's disclosed in the Neufeld patent, which is Exhibit 1005, in figures 1 and 2, correct?

A. I am there.

Q. Okay. So in figure 1, there is a remote management PC, which is reference number 5, and that's connected to a managed server, which is reference number 2, via two networks, a management network M and another network labeled N, correct?

A. That is correct.

Q. Okay. And then in figure 2, we can see again the managed network M and the other network N, correct?

A. That is correct.

Q. And again with reference to paragraph 91 of your declaration, Exhibit 2007, that statement about moving remote management commands to network N and that being a transformation of Neufeld from an out-of-band solution to an in-band solution, you're referring to the networks N and M in figures 1 and 2, correct?

A. Yes.

Q. Of Neufeld?

A. Yes.

Q. But that statement that moving Neufeld's remote management commands to network N as suggested by petitioner would transform Neufeld from an out-of-band solution to an in-band solution is only true if it's a binary choice, if Neufeld can only have remote management commands on either network N or network M, correct?

A. My understanding of Neufeld is remote management is through network M only.

Q. I understand. And it's that understanding that you're relying on to make this statement about

transforming Neufeld from an out-of-band system to an in-band system, correct?

A. Would you repeat in the right context? You quoted only one part of the sentence. I give a long description. I would like to start at the beginning. If you want, I can explain why I said that, what I said, if you want me to.

Q. You know, I read your declaration. I think it's pretty clear why you said it. You said it because, in your opinion, Neufeld must either be an in-band system or an out-of-band system. You do not believe that Neufeld teaches at all that both in-band and out-of-band communication of remote management requests is within his system, correct?

MR. GOLUB: Objection, misstates testimony and misstates his declaration.

BY MR. HEINTZ:

Q. Again, Dr. Mishra, you're to answer that question if you're able.

A. Neufeld teaches us how to do out-of-band remote management system. It does not teach us how to do in-band.

Q. Regardless of whether Neufeld teaches us how to do in-band communication, is it your understanding that Neufeld's system is not capable of in-band communication of remote management messages?

A. I'm not going to speculate.

Q. So you don't know whether Neufeld's system is capable of doing in-band remote management message communication, is that right?

MR. GOLUB: Objection, misstates testimony.

THE WITNESS: Neufeld does not teach us in-band remote management system. It teaches us out-of-band remote management system.

BY MR. HEINTZ:

Q. When you say teaches us, do you mean that there is no disclosure in Neufeld of any in-band communication of remote management messages, or do you mean that Neufeld doesn't disclose how to perform in-band communication of remote management messages?

A. Can I have a minute?

Q. You may.

A. Thank you.

Neufeld does not teach us how to perform in-band remote management system.

Q. All right. Notwithstanding that Neufeld doesn't teach how to perform in-band management -- sorry, in-band communication of remote management commands, does Neufeld disclose that the system described in Neufeld does in fact include in-band communication of remote management commands?

MR. GOLUB: Objection, form.

THE WITNESS: Mr. Heintz, would you rephrase the question that connects to my declaration?

BY MR. HEINTZ:

Q. Well, I don't know that it connects to your declaration or not. I'm not sure what your opinion is so I'm trying to find out. So let's wind this back.

A. I would -- my apology. Please proceed.

Q. There is a distinction between teaching how to do something and teaching whether the system does in fact do it. Do you understand that distinction?

A. I'm not an attorney. From a technical perspective, it talks about out-of-band remote management system, full stop.

Q. Yes. And then you told me, full stop, that Neufeld does not teach us how to do in-band communication of remote management commands, correct?

A. That is correct.

Q. Do you understand that there is a distinction between a reference teaching how to do something and a reference teaching simply that the thing is done without explaining how it's done?

MR. GOLUB: Objection, outside the scope.

THE WITNESS: I'm not a legal scholar. I don't understand that distinction.

BY MR. HEINTZ:

Q. Okay. This isn't a legal concept, Dr. Mishra, okay? You understand -- let me ask you this. Do you understand in patent law that a reference need not teach what's well known in the art in order to disclose it?

A. No.

Q. You don't understand that, okay.

Let's go back to paragraph 91 of your declaration. Again, you talk about moving Neufeld's remote management commands to network N as suggested by petitioner would transform Neufeld from an out-of-band solution to an in-band solution. And there is more in the sentence after but that part of the sentence I read correctly, right?

A. Yes.

Q. Do you understand that the petition is stating that the remote management commands can be sent via both an in-band on network N and out of band via network M?

A. The way I understood is the petitioner's expert is trying to construct how to use Neufeld to create an in-band remote management system. By this statement simply objecting to that fact that any person of ordinary skill, in legal term, POSITA, would simply understand what Neufeld teaches us. And based on that, this construction contradicts what Neufeld teaches us.

Q. Okay. I've put in the chat room the petition in IPR2024-109 as filed. Would you open

that, please?

A. Yes, I opened it.

Q. All right. So I'm going to ask you to look at the paragraph that begins on the bottom of page 8 and goes on to the top of page 9. And again, we're looking at the petition as filed.

A. Okay.

Q. The sentence at the bottom of page 8 begins, "Neufeld discloses a remote management embodiment in which a managed server 2 (including a CPU 3 and a monitor 4) is remotely managed by a network administrator on a remote manager PC 5 that communicates in-band with the server 3 via the server's standard network N as well as out-of-band via a management network M as shown in Neufeld's figure 1."

Do you see that sentence?

A. Yes.

Q. So do you now understand that its petitioner's position that Neufeld is not just an out-of-band system and not just an in-band system, but in fact it's petitioner's position that Neufeld's

system is capable of both in-band and out-of-band communication of remote management messages?

A. I understand petitioner's position but I don't agree with it.

Q. I understand that. Given that it's petitioner's position that Neufeld discloses both in-band communication of remote management messages and out-of-band communication of remote management messages, your statement in paragraph 81 about petitioners transforming Neufeld from an out-of-band solution to an in-band solution is not actually accurate in light of petitioner's stated position, correct, Dr. Mishra?

MR. GOLUB: Objection.

THE WITNESS: It's a long question. Would you rephrase, please?

BY MR. HEINTZ:

Q. Sure. You understand now that petitioner's position is that Neufeld's system engages in both in-band communication of remote management messages via network N and out-of-band communication of remote management messages via

network M, correct?

A. I understand but I respectfully disagree with it.

Q. I understand you disagree. But the question is, given that you understand that petitioner's position is that both in-band and out-of-band communication of remote management messages is performed in Neufeld's system, it's not true that that position would transform Neufeld from an out-of-band solution to an in-band solution as you state in paragraph 91 of your declaration, correct?

A. Mr. Heintz, the question is long. I'll give a short answer.

Q. Okay.

A. And the short answer is, a person of ordinary skill in 2003 reading Neufeld will figure out -- and I give A, B, C, D, four reasons why this construction is wrong, why petitioner's assertion is wrong, I established in all of these four categories. I can walk you through those categories why I disagree with it.

Q. Well, I thought we were going to get a

short answer to my question. I got a long statement which was not an answer to my question. So I'm going to ask my question again and I'll ask you to please try to answer the question as asked.

Given that you now understand that petitioner's position is that Neufeld's system includes both in-band and out-of-band communication of remote management messages, it is not true that, under petitioner's position, Neufeld is being transformed from an out-of-band system to an in-band system, correct?

MR. GOLUB: Objection, misstates his -- misstates the witness' declaration.

THE WITNESS: I still stand by my statement. Neufeld is out-of-band remote management system. That's what it teaches. And any construction trying to suggest it otherwise is flawed.

BY MR. HEINTZ:

Q. Your position is Neufeld teaches only out-of-band communication, right?

A. That is correct.

Q. And that also means that Neufeld's system as described in Neufeld is only capable of out-of-band communication of remote management messages, correct?

A. Anybody in 2003 with ordinary skill would make that interpretation.

Q. Okay. And that's true even though figure 1 of Neufeld shows the remote management PC connected to the server via both the network N and the network M, right?

A. That is correct.

Q. Okay. Sir, we've been going about an hour. I'm about to start a new line of questioning. Would you like to take a break now?

A. Thank you.

(Recess.)

BY MR. HEINTZ:

Q. Dr. Mishra, before we left for the break, we established that you now understand that it's petitioner's position that Neufeld's system is capable of receiving remote management commands via the managed network M and the other network N,

correct?

A. Yes.

Q. Okay. And in this next series of questions I want to clarify that when I'm talking about Neufeld's system, I'm talking about the system shown in figures 1, 2 and 3 and described in the corresponding portions of Neufeld. Do you understand that?

A. Yes.

Q. So in Neufeld, starting at paragraph 38, a discussion of figure 2 begins. Do you see that?

A. Please give me a minute.

Q. Certainly. And just to be clear, when I'm talking about Neufeld, it's Exhibit 1005.

A. What paragraph number, Mr. Heintz?

Q. Paragraph 38.

A. I am at 38.

Q. Okay. So paragraph 38 and the next series of following paragraphs is referring to figure 2 in Neufeld. Do you understand that?

A. Yes.

Q. And it's not until paragraph 50 that

figure 3 is being discussed in Neufeld -- I'm sorry, paragraph 48 that the figure 3 is being discussed in Neufeld, correct?

A. Please give me a moment.

Q. Sure.

A. That is correct.

Q. So I would like to direct your attention to paragraph 43 of Neufeld.

A. Okay.

Q. That paragraph begins by explaining that, as shown in figure 2, there is a remote management controller 116 that's attached to the PCI bus 16. Do you see that?

A. It -- 43 doesn't say it. 43 says, "Further attached to the PCI bus 16" --

Q. -- "is a remote management controller 116," correct?

A. Yes.

Q. So paragraph 43 is saying that the remote management controller 116 is connected to the PCI bus 16, right?

A. No.

Q. No?
A. That sentence doesn't -- is not there.
Q. So somehow the PCI bus 16 can be connected to the RMC 116 but the RMC 116 is not connected to the PCI bus 16, is that what you're saying?
A. I'm simply saying I don't see that sentence.
Q. Okay. Does paragraph 43 of Neufeld disclose that the remote management controller 116 is connected to the PCI bus 16 in figure 2?
A. It says the opposite, but yes.
Q. Okay. Let's read the next sentence of paragraph 43 and see what you think that means. It says, "The remote management controller 116 connects to the keyboard controller 38, the network N and/or a management network M, a keyboard 52, and a mouse 54 to provide functionality for accessing, interacting, and monitoring the managed server 2 from the remote console 5 as will be more fully described below."
Did I read that correctly?
A. Yes, Mr. Heintz.
Q. Okay. So paragraph 43 says the RMC, which

is the remote management controller 116, is connected to the network N and/or a management network M, correct?

A. Yes.

Q. Okay. Remote management commands that come to the RMC via management network M are what we've been referring to as out-of-band communications, correct?

A. That is correct.

Q. And remote management commands that come to the remote management controller 116 via the network N would be an example of in-band remote management commands, correct?

A. Where does it state in here?

Q. I'm sorry, I don't understand your question.

A. The sentence that in-band is through network N, the sentence you said, I'm trying to figure out where does it say in this document.

Q. Okay. I think I understand your point.

How about this. If a remote management command were to come to the remote management

controller 116 through the network N, that would be an example of an in-band communication of a remote management command, correct?

A. No. The current construction and the diagrams provided does not have that capability.

Q. Okay. But I asked you if, Dr. Mishra. If it were to happen --

A. That's --

Q. Let me rephrase the question. You're saying that it's your opinion that it's not possible for a remote management command to come to remote management controller 116 via network N and through NIC 110 of figure 2?

A. That is correct based on Neufeld.

Q. Okay. It's not possible for Neufeld's system to send a remote management command through the network N, the NIC 110 over the PCI bus 16 to the remote management controller 116?

MR. GOLUB: Objection.

BY MR. HEINTZ:

Q. That's your opinion, correct?

MR. GOLUB: Objection, asked and answered.

BY MR. HEINTZ:

Q. Correct, Dr. Mishra?

A. I already answered it.

Q. Did I state your opinion correctly?

A. It is not possible, based on Neufeld construction, remote management commands to come from network N to remote management controller 116.

Q. Paragraph 43 of Neufeld says that the remote management controller 116 is connected to network N, correct?

A. The paragraph says that.

Q. Does figure 2 show a connection between remote management controller 116 and network N?

A. Not directly.

Q. Does it show an indirect connection?

A. That is correct.

Q. Is that indirect connection via the PCI bus 16 and the NIC 110?

A. That is correct.

Q. And paragraph 43 says that the reason the remote management controller is connected to the network M is to provide functionality for accessing,

interacting and monitoring the managed server 2 from the remote console 5, correct?

MR. GOLUB: Objection, misstates the exhibit.

BY MR. HEINTZ:

Q. Yes or no, Dr. Mishra?

A. The question in this case refers to remote management controller and network N. Based on the construction in Neufeld, I highlighted in my declaration that remote management controller uses PCI bus in snooping mode. Therefore, command cannot come from network N.

Q. Paragraph 43 doesn't say that the only reason that the remote management controller 116 is connected to the network N is for snooping. In fact, it says that the reason for that connection, along with the others, is to provide functionality for accessing, interacting and also monitoring, correct?

MR. GOLUB: Objection, misstates the exhibit.

BY MR. HEINTZ:

Q. Dr. Mishra?

A. When I formed my opinion, it's on the entirety of the document. The notion of snooping has been highlighted and subsequent references also highlighted this is a passive snooping mechanism, which is still consistent with that sentence because when there is a communication from network N via NIC 110, remote management controller would be able to observe them to understand what's going on. So they are not contradicting each other, in my opinion and that sentence, but it's simply saying command NIC 110 cannot send the command to remote management controller.

Q. So you said that the reason the remote management controller 116 is connected to the PCI bus is to snoop messages that are being sent via network N, correct?

A. Via network N, all the other components wherever connected to PCI bus, for example, processor 2, through north-bridge, video graphics controller. I talked about all of them in detail in my declaration.

Q. I understand. So that means that if a

message is sent via network N, RMC 116 can see that message, correct?

A. It can see that message.

Q. Right. And if that message were a remote management command that was sent to remote management controller 116, that means RMC could receive that command, doesn't it, Dr. Mishra?

A. In my declaration, I talked about my understanding of patent laws, and I stated that it is based on the understanding what is in the document. It's not based on what could have been done based on the knowledge today. So based on that understanding, because Neufeld says remote management controller performs snooping. And in computer architecture, snooping basically means you monitor passively the activities on that bus.

Q. Okay. So earlier you told me that it would not be possible in Neufeld's system for the RMC to receive a management message, a remote management message via the network N, but now you also tell me that the RMC can in fact see all of the traffic that comes in on network N. Do I have that correct?

MR. GOLUB: Objection, misstates testimony.

THE WITNESS: Earlier what I said is related to Neufeld talks about out of management -- out-of-band remote management. So that sentence and the sentence you said are not correct.

BY MR. HEINTZ:

Q. Okay. You told me that it's not possible for Neufeld's remote management controller 116 to receive a remote management command via network N.

A. I did not say that.

Q. Oh, you didn't say that. Okay. I'm asking you that question now. Is it possible for Neufeld's remote management controller 116 to receive a remote management command over network N?

MR. GOLUB: Objection.

BY MR. HEINTZ:

Q. Yes or no?

MR. GOLUB: Objection, asked and answered.

BY MR. HEINTZ:

Q. So, Dr. Mishra, is the answer yes or no?

A. No.

Q. It's not possible. But it -- you also told me that the remote management controller 116 can also see all of the messages that come in over network N, is that correct?

A. Yes.

Q. Okay. All right. Now, you said earlier that the reason RMC 116 is connected to network N is for snooping, is that right?

A. Would you please repeat the question?

Q. Yes. You told me earlier that the reason that RMC 116 is connected to network N is to enable RMC to snoop traffic on network N, is that right?

A. I did not say that.

Q. Okay.

A. I said, based on Neufeld construction, RMC is connected to PCI bus. I never said RMC is connected to network N.

Q. Ah. Well, paragraph 43 says RMC connects to management -- to network N, doesn't it?

A. Give me a moment.

Q. Sure.

A. Yes, that's correct.

Q. So why in your opinion is RMC 116 connected to network N?

A. So it comes from computer architecture. I'm teaching that every day. In 2003, the PCI is for enabling a processor to communicate to a lot of peripheral devices. It is not for devices to talk to each other.

Q. Okay. So why is 116 connected to network N?

A. For snooping.

Q. Okay. Where in Neufeld, other than your understanding of paragraph 43, is there any discussion of the RMC 116 snooping messages on network N?

A. To avoid this confusion, I was saying RMC is connected to PCI bus. It is snooping PCI bus.

Q. But does that mean that you can't identify anywhere in Neufeld other than your strained interpretation of paragraph 43 where Neufeld discusses that the RMC 116 snoops traffic on network N?

MR. GOLUB: Objection, mischaracterizes

his testimony.

THE WITNESS: In my declaration, I clearly stated Neufeld talked about snooping of PCI bus based from RMC. Anybody with ordinary skill of art wants to put this information together, network being connected to PCI bus. And RMC snooping the PCI bus indirectly implies that if an information coming through NIC 110, RMC is only snooping it.

BY MR. HEINTZ:

Q. So I'm going to ask you point-blank, is there anywhere, other than what you read in paragraph 43, where there is any discussion of the RMC 116 snooping traffic on network N? You can take as long as you'd like to look at Neufeld to answer that question but I need an answer to that question, Dr. Mishra.

A. Give me a few minutes.

No, that exact sentence does not appear.

Q. I'm just asking about the exact sentence. I'm asking is there anywhere in Neufeld, whether it's the exact words or not, where there is any disclosure of the RMC 116 snooping traffic on network N, yes or

no?

A. It is snooping traffic N.

Q. I'm asking if there is disclosure of that anywhere in Neufeld, other than perhaps the way you interpret paragraph 43. So is there any other paragraph in Neufeld where there is any discussion of the RMC snooping traffic on network N?

Again, you can have as long as you like to look through Neufeld to answer that question.

A. That direct sentence is not there but that's directly implied, because snooping is -- let me do the counting.

Q. Okay.

A. Snooping has been referred five times, that remote management controller snoops on the PCI bus. Based on my knowledge of teaching computer architecture 20 years, anybody connected to PCI bus, indirectly it snoops. So therefore, I still stand by my statement in the declaration.

Q. Where is the first instance of snooping discussed in Neufeld, the first of the five instances you just referred to in your answer?

A. The first three are in paragraph 47 of Neufeld.

Q. Okay. What does Neufeld disclose is being snooped by the RMC 116 in paragraph 47?

A. I read: "The remote management controller 116, as described in more detail below, includes circuitry for snooping the PCI bus for configured transactions between the processor 10 and the video graphics controller 114 to determine configuration and mode formation, such as whether the video graphic's controller is in text or graphics mode.

"More specifically, the remote management controller 116 snoops indexed input/output ports of the video graphics controller to provide a set of shadow registers corresponding to mode information. These I/O ports are particularly helpful for legacy video graphics array compatibility mode. In addition, the shadow registers of the remote management controller provide a set of registers for the I/O processor 156 to access independently of the operating system running on processor 10, thereby preventing any conflicts that could arise if both

processors were trying to access the indexed I/O ports simultaneously. The remote management controller also snoops and stores configuration information sent by the processor 10 to the video graphics controller 114. This information is used to identify the location of the linear aperture as well as the location of other configurable resources in the video graphics controller 114. The remote management controller 116 also includes circuitry to route keystrokes to the keyboard controller 38 from either the local keyboard 52 or from the remote console 5 via the modem or the NIC 10" -- my understanding it is incorrect, should be corrected -- "which may be coupled to the network M."

Q. Okay. Did anything you just read have anything to do with snooping traffic on network N?

A. Not directly.

Q. Okay. Now, you said those were the first three instances of snooping. You said there were two other instances. You said there were a total of five. What are the other two instances of snooping that are discussed in Neufeld?

A. The fourth one is on paragraph 58. "The remote server management controller may be adapted to snoop video traffic via PCI bus 172, which is mainly an extension of the PCI bus 16."

And the fifth one is, in 72, "The IRC registers 196 receive raw data snooped from the PCI bus" --

Q. I'm sorry. Hold on for a second, Doctor. I have to interrupt you. So you were reading from paragraph 58. That was the fourth instance of snooping, is that correct?

A. That is correct.

Q. And did that instance have anything to do with snooping network traffic from network N?

A. Not directly.

Q. And are you going on to a different paragraph now and reading the fifth instance of snooping discussed in Neufeld?

A. Yes, if you want me to.

Q. Yeah. What paragraph are you at?

A. So next one is paragraph 72.

Q. 72. I'm sorry. I lost you there. I

think you need to -- if you wouldn't mind, Doctor, slow down just a little bit because it's tough for the reporter to keep up with you, and certainly for me.

So we're now focusing on paragraph 72 and this is the fifth instance of snooping that's discussed in Neufeld, correct?

A. That is correct.

Q. So where in paragraph 72 is there discussion of snooping?

A. It's in the fifth line. "The IRC registers 196 receive raw data snooped from the PCI bus 172."

Q. Okay. Is that discussing snooping of network traffic via network N?

A. Not directly.

Q. Okay. Those are the five instances in your answer earlier that you identified where there is discussion of snooping in Neufeld, correct?

A. That is correct.

Q. And I believe you just told us that none of those five instances have anything to do with

network traffic via -- received via network N, correct?

MR. GOLUB: Objection, misstates testimony.

THE WITNESS: It does not directly indicate the traffic from M -- N but since N is connected through PCI bus through NIC 110, this is implied if I consider the whole Neufeld. The way -- these are the only usages Neufeld discloses. So my opinion is formed based on what has been disclosed in Neufeld.

BY MR. HEINTZ:

Q. Paragraph 43 doesn't say that the remote management controller 116 is connected to the network N just to monitor the traffic on network N, does it?

A. Give me a moment, please.

Q. Sure.

A. Paragraph 43 simply states it connected.

Q. Okay. "It," meaning what?

A. It just says it connects.

Q. What's the "it" that you're referring to?

A. The remote management controller connects to different components.

Q. One of which is network N, right?

A. That is correct.

Q. And the paragraph goes on to say why that those connections are made, correct?

A. That is correct.

Q. And the reasons that are listed explicitly in paragraph 43 are to provide functionality for accessing, interacting and monitoring the managed server 2 from the remote console 5 as will be described more fully below, correct?

A. That is correct.

Q. Now, would you describe snooping as a form of monitoring?

A. Snooping is a form of monitoring, based on Neufeld teaching.

Q. Right. But this paragraph 43 of Neufeld doesn't say that the connection between the RMC 116 and the network N is just for monitoring, meaning perhaps snooping. It also says it's there for accessing and interacting with the managed server 2,

correct?

MR. GOLUB: Objection, misstates the text of the exhibit.

THE WITNESS: In addition to monitoring, it has the word accessing, interacting and monitoring. I again go back to my declaration where I took the context of what PCI bus is used for at that time, what Neufeld is saying about how RMC talks to PCI bus, and that what I thought is the most plausible opinion.

BY MR. HEINTZ:

Q. So the most plausible opinion in your estimation is that even though paragraph 43 says that the RMC is connected to the network N for interacting, monitoring and accessing the managed server 2 and even though nowhere is there any express disclosure in Neufeld of snooping network N, that disclosure is -- the most reasonable interpretation of that disclosure is the only reason that the RMC 116 is connected to network N is just to snoop network N. Is that your opinion?

MR. GOLUB: Objection, misstates the text

of paragraph 43 of Neufeld, Exhibit 1005.

MR. HEINTZ: Okay, Counsel, I'm -- you understand that in depositions in IPRs, you're supposed to give short, one-word answers like objection to form, do you not?

MR. GOLUB: Yeah, to form.

MR. HEINTZ: So you -- I've been giving you a little bit of leeway but you're going beyond that and you're starting to suggest answers to your witness now. I'm instructing you to stop or we're going to go need to talk to the Board, all right?

MR. GOLUB: If you want to call the Board, that's your call.

MR. HEINTZ: Okay. I'm just giving you a heads-up.

BY MR. HEINTZ:

Q. Dr. Mishra, can you please answer the question?

A. Would you please repeat the question?

Q. I will. So the most plausible opinion in your estimation is that even though paragraph 43 says that the RMC is connected via network N for

interacting, monitoring and accessing the managed server 2, and even though nowhere in Neufeld is there an express disclosure of snooping network N, the most reasonable interpretation of the disclosure in paragraph 43 is the only reason that the RMC 116 is connected to the network N is to snoop network N. Is that your opinion?

MR. GOLUB: Objection, misstates exhibit.

THE WITNESS: So this is an English sentence. I'm not a native English speaker. This sentence talks about different connections, talks about different word. And it doesn't necessarily mean all the words applies to all the components. It's quite possible that it's referring to interacting with management network M, referring monitoring to network N. So that's the English sentence reference.

Now, the reason I formed my opinion is because PCI bus architecture, which I teach every day, has limitation who can talk to whom and how in 2002. It also formed the opinion based on what Neufeld repeatedly said how RMC talks to PCI bus in

different instances. It is true it never said how RMC talks or what it does with the packets specifically coming from network N, but I have to go with whatever information given.

BY MR. HEINTZ:

Q. Let's go to paragraph 47. Actually, let me stop there.

And you have that opinion even though paragraph 15 of Neufeld, as we discussed earlier, says that it's highly desirable to have the managed server communicate in the maximum range of operational states, including in-band online communication, correct, for remote management messages?

MR. GOLUB: Objection.

THE WITNESS: Would you repeat the full question, please?

BY MR. HEINTZ:

Q. Sure. You have that opinion even though paragraph 15 of Neufeld, as we discussed earlier, says that it's highly desirable to have the managed server communicate in the maximum range of

operational states, including in-band online communication for remote management messages, correct?

MR. GOLUB: Objection, misstates exhibit.

THE WITNESS: It doesn't say that, Mr. Heintz.

BY MR. HEINTZ:

Q. Okay. What does it say?

A. Paragraph 15 talks about desirable situation. For the remote management to happen, you want to manage under all possible scenarios. That's all it says. But when it goes forward, then Neufeld talks about what is proposed or what solution they're providing through out-of-band remote management.

Q. At the time of Neufeld, was in-band remote management known in the art?

A. In-band remote management or secured remote management is the patent why we are here today.

Q. So let me ask the question again. At the time of Neufeld, was in-band remote management known in the art, yes or no?

A. I'm not sure.

Q. You're not sure? Do you have expertise in this field?

A. My declaration states what documents and exhibits I have read to form my opinion. There could be other documents I haven't looked at.

Q. So it's your opinion that the '016 patent was the first time that in-band remote -- sorry, that in-band communication of remote management messages became known in the art, is that right?

MR. GOLUB: Objection.

THE WITNESS: That's for patent lawyers and it has gone through long history of accept, reject, accept, reject, and it's not for me to make an opinion on it.

BY MR. HEINTZ:

Q. So you just don't know the answer to the question as you sit here now, correct?

A. What was the question again?

Q. Whether in-band communication of remote management messages was known at the time of Neufeld.

A. I do not know.

Q. Even though Neufeld is talking about in-band remote communication of management messages?

A. When I read the Neufeld, my understanding is Neufeld talks about why in-band management is not beneficial for monitoring, because if the system fails, the data traffic that's going through and management traffic mixing, it would have not be able to monitor, one, secondly, there are security implications.

Q. So because Neufeld was talking about it and pointing out limitations with it, doesn't that tell you that in-band communication of remote management messages was known prior to Neufeld?

A. I don't want to speculate.

Q. I mean, do you have to speculate? If you're telling me Neufeld is the one who invented out-of-band communication and you don't even know whether in-band communication was known, that means no management messages were known prior to Neufeld, right, just logically, Dr. Mishra?

A. Again, I don't want to speculate on things I haven't read.

Q. You read Neufeld, didn't you?
A. I did Neufeld.
Q. And you can't tell from Neufeld whether in-band remote management message communication was known at the time Neufeld was written? You can't figure that out, huh?
A. Not at this time.
Q. Okay. You read IPMI, didn't you? IPMI version 1.5?
A. I did.
Q. And you know IPMI version 1.5 was before the '016 patent, right?
A. I need to look at the dates.
Q. Okay. We'll be talking about that later. We'll do that later.
If paragraph 43 -- let me rephrase that.
Does the keyboard 52 and the mouse 54 provide functionality for interacting and monitoring the managed server 2? I'm sorry. Let me rephrase it.
Does the keyboard 52 and the mouse 54 provide functionality for accessing and interacting

with the managed server 2?

A. Which paragraph and which exhibit, Mr. Heintz?

Q. Sure. We're back at paragraph 43 of Neufeld or Neufeld, which is Exhibit 1005.

A. I'm at 43 now.

Q. Okay. So does keyboard 52 and mouse 54 -- let me rephrase that. I'm sorry.

Does the connection of RMC 116 to keyboard 52 and mouse 54 provide functionality for accessing and interacting with the managed server 2?

A. Keyboard 52. Let me look at the figure, please.

Q. Sure.

A. Which -- is it in figure 2, correct?

Q. It is.

A. Figure 2, keyboard and mouse connected to -- sorry. Repeat the question again, please.

Q. Sure. Let me try to do it in little chunks for you. Maybe that will make it easier.

Paragraph 43 says that RMC 116 is connected to, among other things, keyboard 52 and

mouse 54, right?

A. That is correct.

Q. Does that connection provide functionality for the RMC 116 to access and interact with the managed server 2?

A. Managed server 2. Which one is managed server 2 again? Oh, 3 is inside so all of it, okay. Yeah, yeah, that's true.

Q. Okay. Does the connection of RMC 116 through management network M provide functionality for accessing and interacting with the managed server 2 from the remote console 5?

A. That is correct.

Q. Okay. And it's your opinion that the connection of RMC 116 to network N does not provide functionality for accessing and interacting with the managed server 2 from the remote console 5, is that correct?

A. You indicated network N, right, not M?

Q. Correct, network N.

A. So remote management controller -- sorry. Sorry, Mr. Heintz. Can you repeat the question

again?

Q. Sure. Is it your opinion that the connection between RMC 116 and network N, as in Nancy, does not provide functionality for accessing and interacting with the managed server 2 from the remote console 5?

A. That is correct.

Q. I would like to go to paragraph 129 of your declaration. Again, that's Exhibit 2007.

A. I am at 129.

Q. Okay. In about the middle of the paragraph, you say that, "If the RMC attempts to use this same NIC" -- and we're referring to NIC 110 or 2, correct?

A. NIC 110.

Q. Right. So the sentence reads, "If the RMC attempts to use this same NIC 110" -- the 110 isn't there but that's what you're telling me it means -- "it must either pass its management data through the host's networking stack or rely on a specialized sideband interface, such as NC-SI, that supports out-of-band communication."

Do you see that?

A. Yes.

Q. So there you're explaining how it would be possible for the RMC 116 to receive management messages from remote management console 5 via the network N and through NIC 110, correct?

A. No, not correct.

Q. Okay. So what are you describing?

A. So this sentence of paragraph 129, if I go up a little bit --

Q. Okay.

A. Slightly up. Give me a moment while I'm going up. 119 talks about different reasons why the construction of petitioner's experts is flawed. And in that context, this specific argument is basically talks about that using Neufeld out-of-band architecture -- that's what my understanding of Neufeld -- is used, is mischaracterized by RMC's passive monitoring as in-band command reception, which we discussed today earlier, that through passive monitoring, in-band command cannot be received, therefore this combination is flawed,

fundamentally flawed.

In that regard, that paragraph is basically explaining -- first I explained why it's fundamentally flawed, because of the way that -- that's paragraph 121. Then I go on to say if this has to happen, then the things that are required, which is not in place, so in computer science, we call it proved by contradiction, so that if statement is not saying it is possible. This is simply saying if I want to do this, then this is needed. And for that to happen, this is needed. And then eventually I show that that's not possible. Therefore, this construction is not possible.

Q. Okay. So let me try to unpack that long answer. We're talking about paragraph 129 now. 129 describes a bunch of things that would have to happen if remote management messages were to be sent via network N and received at remote management controller 116, correct?

A. That is correct.

Q. One of skill in the art would know how to do what's described in paragraph 129, correct?

MR. GOLUB: Objection, scope.

THE WITNESS: No.

BY MR. HEINTZ:

Q. A person of ordinary skill in the art wouldn't know how to, for instance, pass management data through the host networking stack or rely on a specialized sideband interface, such as NC-SI, that supports out-of-band communication?

A. Person of ordinary skill is defined based on what is stated in the documents that those people are reading. If the statement starts with RMC's snooping on the PCI bus, somebody would not attempt to use it otherwise based on Neufeld.

Q. Dr. Mishra, that's not my question, okay? My question is, let's say somebody read paragraph 43 and read it to mean that in fact the RMC 116 is going to receive management messages from the management PCI 5 via network N, right? My question to you is, if that were to happen, one way that could be achieved, or two ways that could be achieved, are described in paragraph 129 and a POSITA would know how to make that happen if that's what the POSITA

wanted to do, correct?

A. No.

MR. GOLUB: Objection.

BY MR. HEINTZ:

Q. No?

A. No.

Q. So what you're describing in 129 is some solution that's known to you but it's beyond the skill of a POSITA, is that correct?

A. It's not necessarily known to me today. Even if you go back to 2002, the scenario I'm talking about, that's not possible using the PCI bus in 2002. Because the software stack, whatever all the arguments I made, based on the PCI architecture where processor controls, operating system comes into the story to manage communication between NIC 110 and RMC 16 was not possible using the PCI bus in 2003.

Q. You told me earlier that it's perfectly possible for the RMC 116 to snoop all the messages that come across network N, right?

A. That's correct.

Q. And snooping means it could look at the

content of the messages, correct?

A. That's correct.

Q. And if a management message were to come through on the PCI bus via network N, RMC could see that management message, correct?

A. Sure.

Q. Sure. So why couldn't the RMC act on such a management message if it so desired?

A. This is hypothetical question, not related to.

Q. Well, you can call it what you want. If there were a management message that came through on network N and RMC 116 snooped it, then RMC 116 could act on that message, correct?

MR. GOLUB: Objection.

THE WITNESS: Neufeld construction is about out of band. For a message to come to RMC, even if -- again, it's if, hypothetical. I don't stand by my -- this opinion. Even if it comes, then a person of ordinary art is constructing something against Neufeld construction.

BY MR. HEINTZ:

Q. But paragraph 43 says that RMC 116 is connected to network N to interact and monitor and access the managed server 2, right?

MR. GOLUB: Objection.

THE WITNESS: Neufeld also has many errors. Even expert, the petitioner's expert also acknowledged some of them. And I've proposed a correction to it. So once you take all of into consideration, RMC cannot take command from NIC 110.

BY MR. HEINTZ:

Q. It cannot or it just doesn't because of your belief?

A. It's not my belief. It's my technical opinion based on the facts in 2003.

Q. Why is the remote management controller -- sorry. Let me rephrase that.

Why is the remote management PC 5 connected to the network N?

MR. GOLUB: Objection.

THE WITNESS: I don't want to speculate.

BY MR. HEINTZ:

Q. Does Neufeld disclose any reason why the

remote management PC 5 is connected to the network N?

A. Give me a moment to check.

Q. Sure.

A. Based on what I looked at, it's for some in-band communication.

Q. I'm sorry, say that again.

A. To do some in-band communication.

Q. What kind of in-band communication?

A. The network N can be virtually any sort of network -- it's in paragraph 0035. "The network N can be virtually any sort of network capable of transmitting data between two devices. Without limitation, some example of networks include a local area network, a wide area network, a hardwired point-to-point connection, a point-to-point connection over a telecommunications line, a wireless connection, and an internet connection."

Q. So how does that answer the question of why remote management PC 5 is connected to the network N?

A. Not clear to me based on the document.

Q. Does Neufeld disclose that remote

management PC 5 performs any function other than remote management of the server 2?

A. Let me check.

Q. Okay.

A. Based on my quick review, it performs remote management of PC 2.

Q. And your quick review doesn't disclose any other function for remote management PC 5, correct?

A. Yes.

Q. Do you want to take a longer time to look at Neufeld to see if there is any other function disclosed for the PC 5?

A. That will take an hour or two.

Q. I've got the time, Dr. Mishra. So you can spend as long as you would like to answer that question.

A. Would you look at two hours to read to see if it does anything other than remote management?

Q. If that's how long it's going to take you, despite the fact that you've studied this patent in detail prior to this deposition and you formed all these opinions based on this patent, if it takes that

much time, I want you to do it because I think this is an important question.

A. All right. So give me two hours and I'll come back with the question. Again, just to repeat the question, does Neufeld perform anything other than remote management?

MR. GOLUB: Is that the question?

BY MR. HEINTZ:

Q. That wasn't quite it, right? So the question was, does Neufeld disclose any function for the remote management PC 5 other than performing management of the server 2?

A. The security options, monitoring and managing security options if that is what you are asking.

Q. Okay. So I guess I'm -- when I'm talking about remote management, I'm talking about, as discussed in paragraph 43, interacting, monitoring and accessing the server 2, right? So let's just be clear about this. This is a pretty simple question, I think, right? If you look at figure 1 of Neufeld, there is a remote management PC number 5, right?

A. Yes.

Q. The remote management PC is used by a network administrator to perform remote management of the managed server 2, right?

A. That is correct.

Q. And that involves sending commands like, you know, reset the server or telling the server to send information about the server's state to the remote management PC 5 so the user can see what's going on, right?

A. Normally that's the case.

Q. And the remote management PC can perform updates of the software on the managed server, right?

A. Possible.

Q. Right. All of those things could be done on management network M, correct?

A. M.

Q. M. M, as in Mary, management network M, correct?

A. That's correct.

Q. And your opinion is all of those management commands and all of that management

information that's exchanged between the remote management PC 5 and the managed server 2, including but not limiting to RMC 116, all of that occurs only on management network M, correct?

A. That is correct.

Q. So why is remote management PC 5 connected to the managed server 2 via the network N, as in Nancy? Okay, that's the question. And the next question is -- I mean, that's the question. And maybe a second question is what functions does remote management PC 5 perform other than remote management functions for the managed server 2?

MR. GOLUB: Can we ask questions one at a time here?

MR. HEINTZ: Well, he's going to go off for two hours so we don't want to spend, you know, unnecessary time.

THE WITNESS: I would request you to repeat the two questions, please, so that I write it.

BY MR. HEINTZ:

Q. Okay. Why is remote management PC 5 connected to the managed server 2 via network N? N,

as in Nancy.

A. Please go slow.

Q. Okay. What's the last word you have written down?

A. "Why is remote management PC 5 connected" --

Q. -- to the managed server 2 via the network N? N, as in Nancy.

A. Got it.

Q. Okay. The second question is, does Neufeld disclose any function had for remote management PC 5 other than performing management for the managed server 2?

Okay. And I want to make this perfectly clear. When I'm talking about server 2, that includes the RMC 116, right? That's -- in figure 2, the RMC 116 is part of the server, which is number 3 in figure 2, okay?

A. Okay.

Q. All right. So it's 11:42. We've been going a little more than an hour. We can take a break for lunch but do you want to come back like in

an hour and then we'll see where you are? You can have lunch and do whatever you want to do and we'll see where you are?

A. Okay. What time we are coming back?

Q. So it's 11:42 Eastern now. I propose we come back at 12:45. And if all we're going to do and check in and, Dr. Mishra, you're still looking, that's fine but maybe you'll be done by then. Maybe not.

A. Okay.

MR. GOLUB: Just so we're clear here, if you want Dr. Mishra to study or read stuff in order to answer questions, that's on the clock of your seven hours. So if you want to take a break, that's fine, but his time spent reading and whatever, that's going to be on the record so --

MR. HEINTZ: I understand, Counsel, and I don't have any problem with that. So why don't we just get this all out in the open right now.

BY MR. HEINTZ:

Q. How long will it take you to have lunch, Dr. Mishra, given that it's almost 12:00?

A. I may skip lunch today.

Q. I'm sorry, sir, you broke up there. I couldn't hear that.

A. I may skip lunch today to prepare for -- go through carefully the document in one hour.

Q. I'm not asking you to do that. I'm more than happy -- why don't we take a half an hour break for lunch and then you can start looking at the document in half an hour, okay? And then if we come back at 12:45, Counsel, that would mean half an hour was for lunch and half an hour was reading the document, okay?

A. Okay.

MR. GOLUB: And just to be clear, that half hour will count to your seven hours.

MR. HEINTZ: Yeah, I'm agreeing with you. I'm not -- you know, that's the point. I agree with your point, Counselor. I'm trying to just get this set.

BY MR. HEINTZ:

Q. So at 12:45, we'll come back, all right? A half hour of that time, which is an hour from now,

will be charged to my time for the deposition, and a half hour will be for the lunch break.

A. Thank you.

Q. Dr. Mishra, if you want to have lunch during that half hour, you're free to do so. I don't want you to skip lunch, okay?

A. Thank you.

MR. HEINTZ: You don't need to do that on my part. We'll come back at 12:45. We'll see if Dr. Mishra has any answers to those questions. If he doesn't, I'll break for another hour which can count on the clock and we'll see what Dr. Mishra comes up with. If you want to just stay on the clock and listen to silence, I can do that too. Whatever you prefer, Counsel. I'm not trying to make this hard, okay?

THE WITNESS: Thank you.

MR. HEINTZ: All right. So we'll come back at 12:45. We'll see where we are. Agreed?

MR. GOLUB: Agreed.

MR. HEINTZ: Okay. See you in an hour.

(Whereupon, at 11:45 p.m., the deposition

in the above-entitled matter was recessed, to reconvene at 12:49 p.m., this same day.)

AFTERNOON SESSION

(12:49 p.m.)

EXAMINATION BY COUNSEL FOR PETITIONER (RESUMED)

BY MR. HEINTZ:

Q. Dr. Mishra, do you have an answer to either of the questions we posed before we went for lunch?

A. I have read up to page 11 so far. I still have four pages to go.

Q. That's page 11 of Neufeld, is that right?

A. Yes.

Q. Okay. Through page 11, do you have any answers?

A. If I have to answer until page 11, these two questions?

Q. Yes.

A. Give me another half an hour and I'll finish it.

Q. Very good. We can just keep the tape running if you like.

MR. HEINTZ: Counsel, up to you, so there is no question about where we are on time.

MR. GOLUB: Okay. So 30 minutes is 1:20. Is that when we'll come back on?

MR. HEINTZ: Yeah, or we can just stay on the record. I mean, it might be that Dr. Mishra will finish earlier than half an hour.

MR. GOLUB: Okay. We can stay on the record. It's fine.

MR. HEINTZ: Okay. That's fine.

MR. GOLUB: But I may go on mute.

MR. HEINTZ: And that's fine.

(Pause.)

THE WITNESS: I'm ready.

BY MR. HEINTZ:

Q. Go ahead, Dr. Mishra.

A. So you asked two questions. Why is remote management PC 5 connected to the managed server 2 via the network N. The Neufeld does not clearly answer that question.

Q. Okay.

A. I do not want to speculate but since you gave me so much time, out of respect, my speculation would be that for normal communication, network N can

be used in-band but for remote management, which is the core aspect of it, network M can be used.

Q. Okay. And the second question was what functions does Neufeld disclose is being performed by the remote management PC 5? Do you have an answer to that question?

A. Let me repeat the question. Does Neufeld disclose any functions for remote management PC 5 other than performing management for the managed server 2 including RMC 16?

So this particular answer is no with the footnote that the majority of the Neufeld is about securing through remote management systems. In majority of it, it talks about different kind of scenarios where it may fail so that it can handle it. And specifically it's gone into details talking about authentication by different parties with different privilege level with different time of the day, et cetera, which I still believe is part of the remote management, what it's supposed to do. That's the whole thing about.

Q. Okay.

A. So monitoring, as you allege, taking action, for various security reasons and it primarily focused on authentication as one of the core security features.

Q. Okay. Give me a second. I've got the read through your answer because that was quite a bit but I think I have some questions.

So for the first question, you said that network N could be used for what you called normal communication between the remote PC 5, the remote management PC 5 and the managed server 2, correct?

A. That's correct.

Q. What kind of normal communication would that be if the only function that the remote management PC performs is remote management of the server?

A. I'm not sure. As I said, the document many times referred to network N and I believe, as in my declaration, in few of these places, it should have been network M. But that's my technical opinion.

Q. All right. I understand. And then you

talked about the network N -- well, let me rephrase it.

Is it your opinion that Neufeld discloses using the network N for some sort of authentication function?

A. No, that's not what I said. I said the Neufeld -- the core idea is, in my technical opinion, is it's basically configuring different security options through remote management, accessing, monitoring and, if anything goes wrong, taking actions. But the majority of Neufeld is about authentication, or at least majority of embodiments it talked about.

Q. Is any of that authentication in Neufeld being conducted over network N, as in Nancy?

A. It does not explicitly say that because when you move to security option, it start talking about what are the threats and which time threat level is minimum, for example, during daytime or when the operating system is working correctly, people are logging in using their normal credentials, versus offline, offsite, management happening from nonsecure

location, then authentication attached to it, stricter. Neufeld calls it authentication level 1, authentication level 2, depending on when, where and how. So it zooms in to the different security options, what needs to happen.

Q. Okay. But so we're clear, your opinion is if we're talking about remote management via the remote management PC 5 and that remote management PC 5 is in some location away from the secure environment where the server is kept, that remote management communication is only going to be conducted via network M, the management network M, correct?

A. That is my -- still my understanding.

Q. Okay. So let me ask you a question, Dr. Mishra. If you're in a situation like that and the interface to remote management network M on the PC 5 malfunctions for some reason, then under your belief, it's not possible to conduct any remote management of the server via the PC 5, correct?

A. If we focus on Neufeld, that should be the answer. If you talk about hypothetical, anything is

possible.

Q. No, I'm talking about the system in Neufeld as you understand it. Under your understanding, if that remote management PC 5 is remote from where the server is and there's some problem with the connection between that PC 5 and the remote management network M, then it becomes impossible to perform any remote management using the PC 5 in Neufeld's system, correct?

A. That's a long question, Mr. Heintz. As I said, hypothetically, anything is possible but my technical opinion, I can give you the reason again as in my declaration. For snooping, as you allege, doing the actions, security options, remote management controller 116 is in place. If you are saying if 116 fails --

Q. I'm sorry.

A. -- then it will not work.

Q. I'm not saying if 116 fails, okay? I'm just trying to make a simple scenario for you. You've got the managed server 2 in 116 and everything on that end is functioning just fine, okay? Now I've

got a remote PC 5. The remote PC 5 is located away from where the server is, far away so you can't connect to it by anything other than network N or network M. You understand that?

A. That's correct.

Q. In that situation, if there is a malfunction on the interface between the remote PC 5 and the network M, the management network M, it will then become impossible to conduct management operations using the remote PC 5, agreed?

MR. GOLUB: Objection, scope.

THE WITNESS: I have to say that's not possible. If you want to know different possibilities, the network administrator has to go to that building, physically access it. Because the basic idea in Neufeld states what is limitation of in field. It would create security vulnerability, and it proposing security solutions. So taking into that consideration, I have to say it's not possible.

BY MR. HEINTZ:

Q. Right. But if the petitioners are correct and it is possible for the remote PC 5 to send

management requests both in-band and out of band, then in the scenario I just described, you could still conduct remote management using the PC 5, isn't that correct?

A. No. Then you need to construct RMC 16, you have to connect to it. So you have to create the exact replica of how management 5 is connected to PCI. You have to create a similar replica on the other side. That's not Neufeld. That's what I'm saying.

Q. Yeah, I know what you're saying. But if you're wrong about what Neufeld teaches and petitioners are correct that Neufeld is actually teaching both in-band and out-of-band communication, in that scenario, it would be possible for the remote user on PC 5 to perform management functions using the PC 5 with the managed server 2, isn't that right?

A. No, Mr. Heintz.

Q. Okay. Fine. Let's go to paragraph 39 of your declaration. Again, that's Exhibit 2007. Just let me know when you're there, Dr. Mishra.

A. I am at 39.

Q. Okay. At the bottom of page 22, at the end of paragraph 39, there is a sentence that reads, "The I2C bus," or the I squared C bus, whichever you prefer, "neither requires encryption nor provides any support for encryption, authentication, or any security functionality."

Do you see that?

A. Yes.

Q. Why did you feel it was necessary to make that statement?

A. So I'm trying to create the context what I2C does from a layman's -- I'm sorry, from a POSITA's perspective so that when I go down and talk about the petitioner's expert's construction, I can use this discussion what a person of ordinary skill of art will know. I'm just simply trying to say that I2C bus specification nowhere talks about encryption.

Q. Okay. Does the PCI bus specification provide any support for encryption, authentication or any security functionality?

A. I need to look at it. Give me a minute, please.

Q. Okay. Do you need me to put in Exhibit 2010, the Texas Instruments I2C document that you cited?

A. No, I have that. Thank you. Thank you, Mr. Heintz.

Q. Okay. I'm going to put it in the chat room just in case you want it, so it's of record.

(Exhibit No. 2010 was identified for the record.)

BY MR. HEINTZ:

Q. Can you tell me what document you're looking at?

A. I'm looking at Exhibit 2011.

(Exhibit No. 2011 was identified for the record.)

BY MR. HEINTZ:

Q. 2011, okay. And for the record, what is that?

A. This is PCI local bus specification.

Q. Okay.

A. 2002 version.

So to answer your question, PCI bus

specification does briefly mention about encryption and decryption.

Q. Okay, give me a second. I want to get this of record here.

Okay. I've put -- oops. There. I assume shortly you'll have Exhibit 2011 in the chat room. Can you talk to me about where you're reading from Exhibit 2011?

A. So 2011, it's page 275.

Q. Give me one moment. I just want to catch up to you.

Is that native page 275 or exhibit page 275?

A. The native 275, Exhibit 289.

Q. Okay, got it. Almost there. Just give me a moment. Sorry, Exhibit page 289, you said, right?

A. Yes.

Q. All right. I'm on exhibit page 289. Where are you referring?

A. Base class 10h, there is a sentence. "This base class is defined for all types of encryption and decryption controllers. Several

sub-class values are defined. There are no register-level interfaces defined."

Q. Okay. So how is this supporting encryption on the bus? What functionality is the bus providing to support encryption, authentication or security functionality?

A. Give me a moment, please.

Q. Sure.

A. PCI bus specification supports certain types of interfaces. So this is basically one of the way of interfacing the supported encryptions.

Q. Well, this base class 10h says there are no register-level interfaces defined, so how is the bus supporting encryption, authentication and security functionality? I don't understand.

A. Every bus comes with a protocol. Without the protocol, it's simply a set of wares.

Q. Is it -- I'm sorry, did that complete your answer?

A. Yeah, I completed my answer.

Q. Is it necessary for a bus to provide support encryption, authentication or security

functionality for communications involving encryption, authentication or security functionality to be transported across the bus?

A. In the context of my declaration or in general?

Q. Let's do in general first.

A. No.

Q. So it's perfectly possible to send encrypted communications over an I2C bus, right?

A. When you encrypt a set of bits, it remain another set of bits, so the answer is yes.

Q. Sorry, you said a set of bates?

A. Bits, b-i-t-s.

Q. Bits, sorry. Okay.

So the answer is it's perfectly possible for encrypted communications to be conducted over a bus that doesn't provide any support for encryption, authentication or security functionality, correct?

A. At the old technology level, it's basically bits or voltages. Bus doesn't know whether this is encrypted, not encrypted. It's a set of bits.

Q. Okay. I put in at the beginning of the day Exhibit 1001, which is the '016 patent. I think you should find that in your chat board.

(Exhibit No. 1001 was identified for the record.)

BY MR. HEINTZ:

Q. Do you have that?

A. Yes. 1001?

Q. Correct.

A. The patent we are talking about, correct?

Q. Correct, sir.

A. Yes, I have it.

Q. My question for you is, is there any disclosure in the '016 patent of any bus that provides support for encryption, authentication or security functionality?

A. Give me a moment, please.

Q. Sure.

A. No, it doesn't inherently but it talks about that encrypted management request is received by the bus.

Q. Sure. And that can mean any bus could

receive an encrypted management request and pass them along, correct?

A. In the context of this patent, it specifically the first bus is receiving that encrypted communication.

Q. Right. But that first bus doesn't provide any special support for encrypted communication, correct?

A. This patent doesn't talk about it at least.

Q. Okay. All right. Now, I would like to go back to your declaration, paragraph 40 this time. Again, we're talking about Exhibit 2007.

A. I am at 40.

Q. All right. So in paragraph 40, you say -- sorry. I'm just trying to read the quote I've identified. Oh, yes. It's at the bottom of page 23 in your declaration. It says, "In other words, a POSITA will not think of utilizing I2C bus as the first bus (modified figure 12-1, page 73 of Exhibit 1003) that has significant communication requirements."

Do you see that?

A. Yes, I do.

Q. Doesn't -- let's lay the groundwork. This discussion is talking about the IPMI reference which is Exhibit 1020, correct?

A. That is correct. So this is creating the context that the way IPMI has been modified to include I2C bus to perform certain functionalities, based on my technical opinion, those functionalities are not possible --

Q. Okay.

A. -- given the simple nature of I2C bus or their used in scenario at 2003.

Q. Got it. So let's open up IPMI, which is Exhibit 1020. That should also be in the chat room for you.

(Exhibit No. 1020 was identified for the record.)

THE WITNESS: I've open it.

BY MR. HEINTZ:

Q. Now, the first cover of that says IPMI, Intelligent Platform Management Interface

Specification v1.5, right?

A. Yes.

Q. And the date of that is February 20th, 2002, correct?

A. That's correct.

Q. Okay. And that is prior to the earliest claimed priority date of the '016 patent, correct?

A. That is my understanding.

Q. Okay. Now, in paragraph 40, you talked about a POSITA not thinking of using an I2C bus as the first bus, and you're referring to modified figure 12-1 on page 73 of Exhibit 1003, correct?

A. That is correct.

(Exhibit No. 1003 was identified for the record.)

BY MR. HEINTZ:

Q. So figure 12-1 comes from IPMI, Exhibit 1020. You understand that, right?

A. Give me a moment, please.

Q. If you're looking for the -- are you looking for the page where the figure appears in IPMI?

A. Yes, Mr. Heintz.
Q. Okay. It's exhibit page 128 or native page 106.
A. Native 106?
Q. Correct, figure 12-1.
A. Of EX 1003?
Q. No, sir. IPMI, Exhibit 1020.
A. Oh, my apologies.
Q. No problem, sir.
A. 1020, 106.
Q. Correct.
A. I am in 106.
Q. Okay. You see figure 12-1 there, right?
A. Yes, I do.
Q. Now, you see that line with two arrows between the LAN controller and the BMC in figure 12-1, correct?
A. That's correct.
Q. And underneath that it says the words "sideband connection," right?
A. Yes.
Q. And IPMI is giving examples of what that

sideband connection can be and the two examples are an SMBus or an I2C bus, right?

A. That's correct.

Q. So whatever traffic -- let me rephrase that.

You understand that what is being communicated between the LAN controller and the BMC in this figure are remote management messages, correct?

A. Between LAN and BMC, it is on chip. It could be its own traffic. I mean, on-chip communication.

Q. You understand the BMC is the management controller, correct?

A. Sure.

Q. Right. So what's being exchanged between the LAN controller and the BMC are management communications that are coming in via the network, the normal network, right, and are being diverted by the LAN controller over the sideband interface to the baseboard management controller?

A. Okay.

Q. You agree with that? You understand that's what IPMI teaches, right?

A. That's what is in the diagram.

Q. So in the diagram, an I2C bus is perfectly capable of handling whatever volume of messages is required for management requests that are incoming to the BMC, correct?

A. Yes and no. This is one embodiment, but I2C bus has a capability. These are just showing some examples. If you put the I2C bus and you connect a few components, that would work. There is nothing wrong in it.

Q. Okay.

A. But if you put an I2C bus and you ask it to do too much, that's where in my declaration I talked about that's not feasible.

Q. So what is the first bus in the '016 patent that you're referring to in paragraph 40 of your declaration? Where does that first bus connect?

A. There are several embodiments.

Q. Okay.

A. But the first bus is basically a bus

inside the apparatus that talk with the SM -- give me a moment, please.

Q. Uh-huh.

A. SMACC chip or the apparatus or the processor in the apparatus and the corresponding bus controller. That's the first bus.

Q. Okay. And over that first bus, management messages are exchanged, correct, remote management messages, correct?

A. That's correct.

Q. And here, in IPMI in figure 12-1, we're seeing another bus over which management messages, remote management messages are communicated, correct?

A. I2C is communicating, yes.

Q. And so a person of skill in the art reading IPMI would understand that the I2C interface is perfectly capable of handling the message traffic for remote management messages that are being communicated to the BMC in figure 12-1, correct?

A. No.

Q. Okay. Let's go to paragraph 133 of your declaration.

A. 133 in which exhibit, Mr. Heintz?
Q. Your declaration, sir, Exhibit 2007.
A. 133.
Q. Correct, paragraph 133.
A. Give me a moment, please.
Q. Certainly.
A. I am at 133.
Q. All right. So at the beginning of that paragraph, you say, "In grounds 9-15, the petition relies on IPMI (Exhibit 1020) as the primary reference," correct?
A. Yes, sir.
Q. And then you say, "Petitioner's identification of the components of the platform corresponding to the first bus and bus controller as the claimed network device is fundamentally inconsistent with the language of claim 1."
Do you see that?
A. Yes.
Q. So you're stating in that paragraph that the petition identifies the first bus and the bus controller as being part of the network device. Is

that your assertion?

A. That's what was my understanding.

Q. Okay. So I would like you to look at the petition, okay, which I included in the chat room, and I would like for you to identify for me where in the petition you believe that the first bus and the bus controller are identified as being part of the network device, okay?

A. Give me a moment, please.

Q. Yes, certainly. And, sir, you can always take time. You don't have to ask me for taking time. You take as much time as you want to answer my question I ask you.

A. Mr. Heintz?

Q. Yes, sir.

A. I would like to draw your attention to Exhibit 1003, native page number 31.

Q. 1003. So you're talking now about the declaration --

A. No. Oh, okay. So --

Q. So the petition is in the chat room. It says -- I think it's the second to last thing I

added. It says IPR2024-00109 petition as filed '016 patent.

A. Give me a moment, please.

Q. Certainly, sir. And I'm sorry, I think it's the fifth thing from the bottom of the pile.

A. I would like to draw your attention to petition native page 55.

Q. Okay.

A. Section 2, below the figure, it reads, "IPMI discloses this limitation. IPMI's BMC is the claimed processor, portions of IPMI's platform other than the BMC and the components of the platform corresponding to the first bus and bus controller identified below are the claimed network device."

Q. Is that where you think that the petition identifies the first bus and the bus controller as being part of the claimed network device?

A. There are a few other places. I believe this is the first one I found. I can look for more.

Q. Let's take this one to begin with. Sir, I know you've told me a couple of times you're not a native English speaker and I respectfully submit to

you that you've misunderstood this paragraph. What this paragraph says is that IPMI's BMC is the claimed processor. Then it says portions of IPMI's platform other than the BMC and the components of the platform corresponding to the first bus and bus controller identified below are the network device.

What that means, sir, in English is that the network device is things other than the BMC and the components that are the bus controller and the first bus.

MR. GOLUB: I object. That is not a question. And you are not here to lecture --

MR. HEINTZ: I was about to finish my question, so if you'll let me do that, Counselor.

BY MR. HEINTZ:

Q. Do you now see, Dr. Mishra, now that I've pointed out to you, that that is in fact the way the sentence reads?

A. It's possible a similar confusion is there also in the expert -- petitioner's expert's document. If you'll allow me a few minutes, I'll look at it.

Q. I'm sorry, you want to look at Exhibit

1003 now?

A. Yes, please, if that's okay with you.

Q. That's certainly fine. Let's see, do I have Exhibit 1003 here yet? Okay. Let me put Exhibit 1003 into the chat room so we have that on the record. I've pressed the button to send it so I think you'll see it momentarily.

Do you have it yet, sir?

A. Yes, I did.

Q. Okay.

A. So if you look at paragraph 94 of Exhibit 1003, native page 31, please.

Q. I am there, sir.

A. And --

Q. This is about Neufeld. We're talking about IPMI, so maybe you're confused.

A. I'm trying to give an idea of where expert's petitioner -- sorry, petitioner's expert. My apologies. Petitioner's expert tried to highlight bus 166 under the clause "a bus controller coupled with a processor via the first bus."

Q. Okay.

A. So there are a few other places I can look for why I got the impression that first bus is different to the network device.

Q. Well, I understand -- actually, I don't understand but I just want to make sure you understand, Dr. Mishra, I'm asking you now about your statement in your declaration of paragraph 133 where you're talking about your belief that what the petition identifies in IPMI as the first bus, okay? We're not talking about Neufeld now. Your declaration is talking about IPMI, Exhibit 1020, and what portions -- and your belief that the petition says that the first bus and the bus controller are part of the network device in IPMI, okay?

A. I would request you to look at my declaration, native page 85, please.

Q. Okay. I'm there, sir.

A. So the picture, the annotated picture taken from IPMI and then annotated, that this first bus was pointed at this sideband bus. So where in the petition or petitioner's expert created this picture, which I'm simply putting it here. I can

look at where I got this picture from.

Q. So I see two pictures on page 85. Which -- are you referring to the second one?

A. The second one, yes, please.

Q. Okay. And you want to know where that picture appears?

A. I believe it's from -- I took it from expert's -- my apologies, petitioner's expert's reconstruction of claim.

Q. All right. So I'm guessing, to the extent it helps you, you're talking about perhaps page 73 of Exhibit 1003?

A. No, page 70- -- okay. You may be right.

Q. Well, native page 73, exhibit page 87.

A. Yes, sir, yes, sir. That's the page I'm referring to.

Q. Okay. And so I'm clear, you're saying that this figure is one of the reasons that you say in paragraph 131 that petitioner identified the components corresponding to the first bus and the bus controller as being part of the claimed network device, is that right?

A. Yes, sir. If you see in the picture, the big box, on the top left corner it says managed system.

Q. Yes.

A. So that's why I am -- when I map it to the patent and discussion, the managed system is the network device.

Q. I see. So this figure shows that the BMC is part of the managed system too, and you think that's petitioner's theory?

A. That's what is my understanding.

Q. Okay. Well, let's go back to what the petition actually says. I'm looking at where you first directed me to, which is the petition for the 109 IPR, right, at page 55 where it says, "IPMI's BMC is the claimed processor" --

A. Sir, give me a moment. Which page, please?

Q. Yeah, native page 55, which is PDF page 68 of petition.

A. One minute, please.

Q. Sure.

A. I'm at 55.

Q. So the second sentence in the paragraph that reads 2, and then limitation 1.a under that heading, right? It says, "IPMI's BMC is the claimed processor, portions of IPMI's platform other than the BMC and the components of the platform corresponding to the first bus and bus controller identified below are the claimed network device."

Now, that sentence clearly states that the BMC is not part of the claimed network device, right?

A. That's correct.

Q. But if you look at that figure you just pointed to me, the BMC is in managed server 2, right? So it can't be that petitioners are claiming the BMC is part of the network device, right?

A. In this sentence, you are right, sir. I agree. But if I go down in the petition, even if I stay in the petition and keep going down, if we go to native page 61, we still have that confusion.

Q. Okay. I'm looking at page 61. Are you --

A. Native page 61 of the petition.

Q. Right. Are you pointing to figure 12-1 or

1- --

A. Figure 12-1, yes, please.

Q. Okay. So again, right, the box is labeled managed system, right? And we saw earlier in the petition that the petition is clearly saying that BMC is not part of the network device, right? Your belief that because that box is labeled managed system and includes the BMC, that petitioner is saying the BMC is part of the network device is clearly inconsistent with what's on page 55, right?

MR. GOLUB: Objection, form.

THE WITNESS: This figure and that sentence is contradictory and I believe that's not my problem.

BY MR. HEINTZ:

Q. I see. Okay. So let's go back to page 55, native page 55.

A. Of the same exhibit?

Q. Yes, sir. This is the petition we're in now, okay?

A. I am at 55.

Q. All right. So, again, I'm looking under

the heading number 2, which was for limitation 1.a, right? The second sentence that we've read a couple of times now, you agree with me that that sentence clearly states that petitioner is alleging that the BMC is not part of the claimed network device, right?

A. I think so.

Q. And you also would agree, I believe, that the same sentence also makes clear that neither the first bus nor the bus controller, as identified below, are part of the claimed network device, right?

A. If you think that's what the sentence is saying.

Q. Well, the sentence says that portions of the platform other than, one, the BMC and, two, the components corresponding to the first bus and the bus controller are the claimed network device?

MR. GOLUB: Objection.

THE WITNESS: I can read that differently and say the components of the platform corresponding to the bus and bus controller identified below are the claimed network device. I know I'm not a native English speaker, but if the sentence construction is

open to interpretation, that's not my problem.

BY MR. HEINTZ:

Q. Well, so in your belief, in the way you're interpreting the sentence as a non-native speaker, you think what this means is that portions of IPMI's platform other than the BMC -- well, okay. So in your understanding, the BMC is not part of the claimed network device, right?

A. It's hard to tell from this sentence. I tried reading three times.

Q. All right. Okay. Just to finish this line of questioning off, there is a discussion in this sentence on page 55 that says, "The components of the platform corresponding to the first bus and the bus controller identified below." You see that, right?

A. Identified below. Yes, I see that.

Q. So I would like to go to the discussion of the limitation 1.d which is below this starting at native page 61, the top of native page 61.

A. I am there.

Q. Okay. So limitation 1.d is the first bus.

You understand that?

A. IPMI discloses this limitation.

Q. Right. But --

A. Yes.

Q. -- this limitation is 1.d, which is the first bus. Do you remember that from the petition?

A. This section 5, I lost track of it. Where does it come from?

Q. So the petition has a chart that identifies what these limitations like 1.d are, okay? So let's refresh your recollection. If we go up to the petition, in the PDF version of it starting on native page 9, you know, Roman numeral IX, PDF page 10, we've got a chart where the claims are broken down and assigned identifiers, right?

A. Okay.

Q. Do you see that, sir?

A. I'm still going there.

Q. Ah, I'm sorry.

A. Is it italic 9 or --

Q. Roman numeral IX, PDF page 10.

A. PDF page 10. I'm at PDF page 10. Yes, I

see it.

Q. So there is a claims chart there, right? And for claim 1, limitation 1.d is the first bus and limitation 1.e is a bus controller coupled to the processor via the first bus, right?

A. Yeah, I got it.

Q. So 1.d is the first bus, 1.e is the bus controller, correct?

A. Yes, that's correct.

Q. So now we're going to go back to page 55, okay? And we've looked at that sentence a couple of times where in limitation 1.a, right, where it's referring to the first bus and the bus controller that are identified below, right? And that's in the petition, okay.

So now we're going to go to the petition in 1.d, right, which is at page 61. Now, 1.d is the first bus, right?

A. Okay.

Q. And in the paragraph below limitation 1.d, right, you can see that this sideband interface is being identified in the petition as the first bus,

right? You can see the label, first bus, in red pointing to the sideband interface in the figure 1-2, correct?

A. That's correct.

Q. And then in figure 12-1, again you can see the notation in red to the sideband interface -- sorry, the sideband connection which, for example, is the SMBus or the I2C bus in figure 12-1, right?

A. That's correct.

Can I take a 10-minute bio break, please?

Q. Oh, certainly. I apologize for keeping you longer. I didn't realize how late it was.

A. What time do we come back?

Q. You tell us how long you'd like.

A. 2:20?

Q. That would be fine.

A. Thank you, sir.

(Recess.)

BY MR. HEINTZ:

Q. So, Dr. Mishra, I think where we left it is you agreed that the petition for limitation 1.d, the first box is identifying that sideband interface

between the network controller and the BMC in IPMI in both figures 1-2 and 12-1 as annotated on page 61 of the petition, correct?

A. Yes, sir.

Q. And then the next limitation of the petition is 1.E which is the controller, the bus controller, correct?

A. Possible.

Q. Well, we looked at the chart earlier, right, 1-D was the bus controller?

A. I forgot. I can go back and check.

Q. I'm sorry, 1-E is the bus controller. Go ahead and take a look, satisfy yourself.

A. 1.e, a bus controller coupled with a process controller via the first bus.

Q. Right. And in the petition on page 62, under heading 6 for limitation 1.e, right, there is a discussion there and I believe you'll see that the petition is asserting that the non-PCI bus controller 126 of Huckins is that claimed bus controller in limitation 1.e. That's at the bottom of 62 and onto 63, the non-PCI bus controller 126. Do you see that?

A. I do.

Q. And that non-PCI bus controller is connected to a bus 131 which is a PCI bus, right?

A. 131 which is -- are you referring to figure 1 in page 63?

Q. I am.

A. But it doesn't say PCI bus. It says I/O controller hub.

Q. No, no. I'm sorry, maybe I misspoke. Non-PCI bus controller 126, right? That's the bus controller. And then 131 is a PCI bus. And I think if you look at the top of page 62 -- sorry, 63, you'll see it says over a PCI bus 131 as illustrated in the figure below.

A. 131. I still can't find 131 in the figure.

Q. It's not on the figure. I'm sorry, in the figure, it's connected to box 126. It's highlighted between the I/O hub controller and the non-PCI bus controller.

A. I get what you said. I'm saying I don't see any PCI bus designation in this diagram.

Q. Agreed, sir. I'm telling you that on page 63 in the text, in the first two lines there is a reference to PCI bus 131. Do you see that?

A. Okay. That 131 is PCI bus, okay. All right.

Q. Yes. And let's -- I mean, just so there is no question about this, I'm going to put Huckins, which is Exhibit 1007, into the chat room, and you could just verify for yourself that Huckins is -- 131 is a PCI bus.

(Exhibit No. 1007 was identified for the record.)

BY MR. HEINTZ:

Q. So if you go to -- when you have Exhibit 1007 open, I'll direct your attention to paragraph 26. Paragraph 26.

A. 131 is PCI bus based on Huckins --

Q. Yes.

A. -- I can confirm.

Q. Okay. So the point here, Dr. Mishra, is this portion of the declaration identifies the first bus -- I'm sorry, the bus controller that connects

the first bus to the processor is this non-PCI bus controller 126 in Huckins which connects on the one hand to PCI bus 131 and on the other hand to some other non-PCI bus 132, right? Do you see that?

A. I see that.

Q. And you also understand from having studied the petition that the allegation is, in the petition, that this non-PCI bus controller 126 is the thing that's being used to implement the sideband interface to the BMC, which is the non-PCI device 133 in the figure on page 63 of the petition?

MR. GOLUB: Objection to form.

BY MR. HEINTZ:

Q. And please feel free to read this description for limitation 1.e and satisfy yourself that that's what is being alleged in the petition.

A. So I understand what petition alleges and actually I insert it in my declaration why this construction is fundamentally flawed.

Q. I understand your opinion. The point I'm trying to make is when you read the discussion at page 55 of the petition, okay, in connection with

limitation 1.a, right, that second sentence which is referring to portions of the platform other than the BMC and the components of the platform corresponding to the first bus and bus controller, you can understand that what the petition is alleging is that the bus controller and the first bus are not part of the claimed network device. The claimed network device is being discussed in this paragraph as components other than the BMC and the first bus and the bus controller that are identified below. Do you recognize at least that that's a possibility?

MR. GOLUB: Objection, form.

THE WITNESS: I already answered it, Mr. Heintz, that I don't agree with that view of the petition.

BY MR. HEINTZ:

Q. I thought you told me it could be read both ways. Did I misunderstand your answer?

A. All I said, it's not my fault that the sentence is written in an ambiguous manner.

Q. Right. And of course it's your opinion that it's ambiguous and you're a non-native English

speaker, right?

A. Do I have to answer that question?

Q. You know what? I'll withdraw the question for you. How's that?

Okay. Let's take a look at Huckins again. That's Exhibit 1007.

A. I am there.

Q. All right. And I would like you to look at figure 1. And in particular, this time we'll look at component 130 which is identified in figure 1 as the I/O controller hub. Do you see that?

A. 130. I do see that.

Q. Okay. What's a hub?

A. Hub is a place to wait.

Q. Place to wait. You think that's what hub means in the context of figure 1 of Huckins?

A. No.

Q. What is a hub in the context of figure 1 of Huckins?

A. So exactly Huckins I need to read on how they interpreted it.

Q. Okay.

A. So if you want exactly what I can say, give me a minute, let me read.

Q. We don't need to do that. I can ask you a general question.

Are you familiar with the concept of a USB hub?

A. It basically manages sets of the protocol and manages the communication with the connected devices.

Q. Right. So in simple terms, if I had a PC with one USB port, I could connect that one USB port to a USB hub and then connect multiple USB devices to that USB hub so that the multiple devices can all communicate with the PC through the one USB hub, correct?

A. Yes and no. Today, yes. Several years ago, no.

Q. Several years ago?

A. The protocol would not have been supportive to have a -- first of all, multiple USB hubs didn't exist then in 2003. Secondly, the protocol was not advanced enough to support it.

Q. Okay. Today that would be true of a USB hub, right?

A. That's correct.

Q. And so today, if I disconnected the USB hub and took one of the devices and connected it directly into the USB port of the PC, that device could communicate via the USB port of the PC with the processor on the PC without any problem, correct?

A. Today, yes.

Q. Does Huckins say anywhere that a non-PCI bus controller 126 cannot communicate directly with the PCI bus?

A. I can look at it but in the context of declaration, my declaration, my argument was this complicated design of the PCI bus as the second bus is not practical. The LAN system is supposed to be fast/quick. That's what it's designed for. Now we are having kind of LAN, then a non-PCI controller, then a hub to connect to LAN again. This multihub scenario is not by core principle of LAN design. Again, I'm talking about 2002-'3 understanding.

Q. Sure. So you referred to a multihub

scenario. What multiple hubs are you talking about?

A. Let me go to my declaration, please.

Q. Sure. And when you get there, tell me what part you're looking at so I can follow along.

A. So if you look at my declaration, native page 88.

Q. Okay.

A. I kind of showed if the construction has to hold true, the construction of the petition or petitioner's expert, something like this has to happen. 134 network controller goes to hub, then goes to non-PCI bus controller, then goes to non-PCI device, then it talks to the BMC. So that's what I talked about. Maybe I should have used multiple hop instead of multiple hub.

Q. So you're saying there's multiple hops instead of multiple hubs. Is that what you're saying now?

A. Yes, sir.

Q. So your opinion -- let me -- I understand your opinion. My question is a little simpler, okay? My question was, does Huckins say that the non-PCI

bus controller 126 cannot communicate directly with the PCI bus 131?

A. Would you please say the question again?

Q. Sure. Does Huckins say that the non-PCI bus controller 126 cannot communicate with the PCI bus 131 directly?

A. It actually says contrary. So non-PCI bus controller talks to PCI so that it can connect non-PCI devices.

Q. Right. So the non-PCI bus controller does not have to go through the I/O controller hub to connect to the PCI bus, right?

A. Yes and no. If we look at the construction the way the -- my apologies. The petitioner's expert constructed how non-PCI device coming through BMC, non-PCI controller, then PCI bus, I tried to show if we want to use Huckins, based on somebody who read Huckins, how they will attempt it.

Q. Is that your answer?

A. Yes, sir.

Q. Okay. So I would like to compare the figure on paragraph -- above paragraph 146 on page 88

of your declaration with the figure from the petition at page 64.

A. Sorry, sir. You had two parts of the question. Where do I go now first?

Q. So I want to compare the figure in your declaration on page 88 --

A. Okay.

Q. And that's the figure where you've got this part of Huckins and the BMC shown, right?

A. Yes.

Q. I want to compare that figure to the figure in the petition at native page 64, PDF page 77, which is the modified version of figure 12-1.

A. Okay. I'm there.

Q. Okay. So in figure 12-1, the modified version of figure 12-1, there is a connection between the BMC and the PCI-I2C bus controller bridge, correct?

A. Correct.

Q. And that's a direct connection, in other words, the BMC is directly connected to the PCI-I2C bus controller bridge, right?

A. Okay.

Q. Now, in your version of this figure in paragraph 88, you got the BM -- sorry, on page 88 of your declaration, right? You've got the BMC on the right-hand side and then you've got that connected to non-PCI device 133, right?

A. Yes.

Q. And then non-PCI device 133 is connected to the non-PCI bus controller 126, right?

A. That's correct.

Q. So that's different than what's being alleged in the petition. In the petition, the BMC is directly connected to the thing called the PCI-I2C bus controller bridge, right?

A. That construction is wrong.

Q. I know what you say, but I'm just trying to make it clear that what you are showing in your figure is different than what's shown in the petition, correct?

A. They are different.

Q. Right. And in Huckins, right, the non-PCI bus controller 126 is directly connected to the

non-PCI device 133 via the bus 132 which is the non-PCI bus, right?

A. That is correct.

Q. So Huckins tells you if I've got a non-PCI bus controller, I can connect that non-PCI bus controller via the non-PCI bus directly to some non-PCI device, like a BMC, right?

A. Yes.

Q. Okay. So is there something wrong in the petition, in the modified version of figure 12-1, where the BMC is directly connected to the PCI-I2C bus controller bridge via the I2C bus?

A. It is wrong. If you want to go through Huckins, then we have to follow the design of Huckins. Is it possible today? Maybe. But given if somebody want to connect a non-PCI device in those days and are aware of Huckins, then they'll take the design of Huckins and then try to connect it.

Q. Okay. So you're saying that looking at Huckins, I have to have some device between the BMC and the PCI-I2C bus controller bridge?

A. To have Huckins, you have to follow the

protocol of non-PCI bus controller.

Q. What protocol in Huckins about a non-PCI bus controller says that I've got to have a device between the non-PCI bus controller and the non-PCI device?

A. My apologies. I didn't say that. PCI bus 131, non-PCI device, between that you need to have a non-PCI bus controller. That's what Huckins states.

Q. Okay. And in figure 12-1 in the petition, between the PCI bus and the non-PCI device, the BMC, I've got a PCI-I2C bus controller bridge. That's exactly what Huckins shows, isn't it?

A. This one doesn't say it's a non-PCI bus controller.

Q. Which one doesn't say?

A. The PCI-to-I2C bus controller.

Q. You don't think that an I2C bus controller is a non-PCI bus controller?

A. I don't want to hypothesize here.

Q. The words on the page are PCI-I2C bus controller bridge. You understand that that means that I've got a device that connects on one side to a

PCI bus and on another side to a non-PCI bus like an I2C bus, and that thing in the box is a bus controller and a bridge. Do you understand that?

A. I see the connection but it does not say this is a non-PCI bus controller.

Q. You understand the petition is saying I'm going to take Huckins' 126 non-PCI bus controller and I'm going to use it as the PCI-I2C bus controller, right? In other words, Huckins has a non-PCI bus controller that connects on one side to a PCI bus 131 and to some other bus, 132, on the other side. Do you understand that's what's disclosed in Huckins?

A. True.

Q. Okay. And in the figure 12-1 as modified, I've got that Huckins device which is connected on one side to a PCI bus and on the other side to a non-PCI bus, the I2C interface. That is the design of Huckins reflected in figure 12-1, isn't it?

A. If the petition states it's a non-PCI bus controller, then this is correct. The petition doesn't explicitly state that.

Q. The petition states that whatever this bus

controller is, it's a PCI-I2C bus controller, right?

A. And then it says it's following the design of Huckins. And in page 63, just above, the Huckins design is described.

Q. Where does it say that it's following the design of Huckins? Where are those words on page 63?

A. It says, "PCI-I2C bus controller and bridging device of the type described in Huckins as shown in the modified version figure 12-1 below."

Q. And Huckins is a non-PCI bus controller, right?

A. Huckins is a non-PCI bus controller.

Q. So if the petition says it's the type disclosed in Huckins, isn't the petition making it very clear that what we're talking about is a non-PCI bus controller, i.e., an I2C bus controller?

A. I would still say this is fundamentally flawed. So what you are saying is right in terms of connections. But in terms of computation, it's not going to work.

Q. Okay.

A. That's what I tried explaining. If you

give me a minute, I'll summarize.

Q. That's not my question. If your counsel wants to ask you that question on cross, he can do so, but that's not my question.

All right. Let's go to your paragraph 40 in your declaration, Exhibit 2007.

A. Four zero?

Q. Yes, sir, four zero.

A. I'm at four zero.

Q. In paragraph four zero, you say that the I2C -- and I'm sorry, do you prefer that we call that as I2C or I squared C?

A. Both are fine. I wrote I2C. People write I squared C, both actually.

Q. I like taking it easy too. I'm tired of pressing -- making subscript, taking the extra step so I say I2C. Okay.

You say that the I2C is a two-wire serial communication protocol and that this protocol can support multiple controllers that send and receive commands and data. Do you see that in paragraph 40?

A. Sorry, sir, where is multi?

Q. It's about the middle of the paragraph.
A. Yes, I found it. The protocol supports multiple target devices, okay.
Q. And it also supports a single controller as well as multiple controllers, right?
A. Okay.
Q. All right. Does an I2C bus have to have at least one controller in order for it to be able to support communications between the devices on the bus?
A. I2C is a passive bus. Somebody has to drive values into it. And somebody has to read values from it.
Q. So does that mean that there must be a controller for an I2C bus in order for devices to be able to communicate on that bus?
A. I showed some usage scenarios. If you -- let me see where it is. Oh, it's in my declaration, page 23 at the top.
Q. Okay.
A. How Texas Instruments uses it to connect to analog-to-digital converter, as you allege,

digital-to-analog converter to I2C bus.

Q. So does that implementation have at least one bus controller for the I2C bus?

A. Yes. So clock in is the clock that's coming in from somewhere, so that's the voltage line. So voltages going up. That's charging the line capacitance. And that voltages going so flow through. Because it's such a simple bus, its control mechanism is not the way we visualize other bus controller like PCI we talked today.

Q. Sure. But it is a bus controller, correct?

A. Yes.

Q. And there's going to be a bus controller for every I2C bus, right? Not necessarily multiple but there will be at least one?

A. Yes.

MR. HEINTZ: Why don't we take five minutes but I think I'm done.

(Recess.)

MR. HEINTZ: Okay, I'm back. I have no further questions. I'll pass the witness.

MR. GOLUB: I would like about five minutes, okay, to figure it out.

MR. HEINTZ: Sure.

(Recess.)

EXAMINATION BY COUNSEL FOR PATENT OWNER

BY MR. GOLUB:

Q. Dr. Mishra, a few minutes ago you were asked some questions and you wanted to basically summarize your answer. I'm going to read back the portion of the transcript where you said that and then just give you a chance to answer, okay?

So the question was, "And Huckins is a non-PCI controller, right?

"Answer: Huckins is a non-PCI bus controller.

"Question: So if the petition says it's the type disclosed in Huckins, isn't the petition making it very clear that we're talking about a non-PCI bus controller, i.e., an I2C bus controller?

"Answer: I would still say this is fundamentally flawed. So what you are saying is right in terms of connections. But in terms of

computation, it's not going to work.

"Question: Okay.

"Answer: That's what I tried explaining. If you give me a minute, I'll summarize."

So, Dr. Mishra, what I'm asking you to do is provide the summary that you were talking about at that point during your examination.

MR. HEINTZ: Objection. It's not a question.

BY MR. GOLUB:

Q. Well --

A. Can I answer?

Q. Yes, go ahead.

MR. HEINTZ: Objection. Not a question, calls for a narrative.

You can answer.

BY MR. GOLUB:

Q. Go ahead, Dr. Mishra. You can give the summary now.

A. So we can connect two components together but for them to work, they have to respect their protocol. So the PCI in 2002 basically is driven by

CPU or some controller hub which initiates different addresses and then manages the communication mechanism. That's why in Huckins, there was that I/O controller hub. It was not for no reason. That I/O controller hub actually controlling the PCI which is then further communicating with non-PCI controller which is connecting to the non-PCI device. In my construction, I wanted to show a scenario for BMC to be connected to the PCI bus, there has to be some hub or some additional controller in place.

Thank you for giving me the opportunity to summarize.

MR. GOLUB: I don't have any further questions.

EXAMINATION BY COUNSEL FOR PETITIONER

BY MR. HEINTZ:

Q. Well, I've got a question. The BMC can be connected to the I2C bus controller bridge as shown in figure 12-1, correct?

A. BMC can be connected to I2C bus.

Q. Okay. And in IPMI as shown in the modified version of figure 12-1 on page 64 of the

petition that we discussed earlier, the LAN controller is connected to the PCI bus, right?

A. Give me one more reference, please. Which page and which exhibit, Mr. Heintz?

Q. Sure. So I'm talking about the petition in this case.

A. Petition.

Q. This is the 109 IPR, right? And we were looking at figure 12 -- modified figure 12-1 on page 64, native page 64 of the petition.

A. I'm there.

Q. And actually, let me make it a little easier. Let's go up and look at the actual figure 12-1 on native page 61.

A. I'm there.

Q. The LAN controller is connected to the PCI bus, right?

A. LAN controller is connected to the PCI bus.

Q. Yes?

A. Yes.

Q. And the LAN controller is also connected

to the sideband connection, which is the SMBus or an I2C bus in figure 12-1, right?

A. That's correct.

Q. There is no problem connecting the BMC to the LAN controller via the I2C bus, correct?

A. But that was not my objection in my declaration.

Q. That's okay. I'm just asking you, in IPMI, there is no issue in connecting the BMC to the LAN controller via an I2C bus, right?

A. Two components through I2C, you can connect.

Q. Okay. Now, do you think that there is something in IPMI that precludes there being an I2C bus bridge between the BMC and the LAN controller?

A. Yes. And that is the normal utilization of I2C bus in 2002, how it is used. In my declaration, I even cited how is it used even a few years ago in Texas Instruments, only to connect small components and a small device. And I cited why those restrictions are there, the capacitive restrictions, noise, communication noise, signal-to-noise ratio. I

talked about all of that. I can take you to my corresponding paragraph if you allow.

Q. I just want to make sure that you understood my question and you answered it the way you intended. My question was do you think that there is something in IPMI that precludes there being an I2C bus bridge between the BMC and the LAN controller. Your answer to that is yes?

A. There is -- using it as a first bus, the way it's envisioned in claim 1 of the patent, it's wrong. Putting a bus between two components, it's right.

Q. Okay. So I'm not asking you about the patent. I'm asking about IPMI and I'll try to read my question again to you. Do you think there is something in IPMI that precludes there being an I2C bus bridge between the BMC and the LAN controller? You answered that question yes. Is that the way you intended to answer?

A. There is no problem as long as capacitive load can be supported by I2C bus. How much load you are providing to the I2C bus, so therefore it is

correct if you are connecting a small number of components within a chip, sensors, actuators, a number of devices, that's how it's used today, even today.

Q. Well, in IPMI, right, that I2C bus in figure 12-1 is only a connection between the LAN controller and the BMC, right?

A. That's not how VLSI circuits works, the integrated circuits design principles. When you connect a bus, it's not the component it's connected to. That component could be connected to other components. All of it forms the capacitive load on that bus.

Q. All right. So let me try to understand. We're looking at figure 12-1 of IPMI which is reproduced on page 61 of the petition, right?

A. Yes.

Q. There is an I2C bus and what's connected to that I2C bus, the so-called sideband connection, is the BMC and the LAN controller, period. Those two devices are only what's shown on figure 12-1, right?

A. Yes.

Q. Are you saying that in that implementation where I only have two components connected to the I2C bus, that there would be some kind of problem if between the LAN controller and the BMC, I had an I2C bus bridge?

A. Depends on what communication LAN controller and the BMC is doing. There may or there may not be any problem.

Q. All right. Let's assume that it's the exact communication that's discussed in IPMI, which is the sideband remote management messages that are being directed toward the BMC. In that context, with that amount of traffic, do you think there is some problem in IPMI if I put an I2C bus bridge controller between the LAN controller and the BMC in figure 12-1?

A. If the remote management components are minimal, BMC is connected to minimal number of components, it's possible.

MR. HEINTZ: Thank you. No further questions.

I believe we're done.

MR. GOLUB: I may have some redirect --

MR. HEINTZ: Oh.

MR. GOLUB: -- based on that so I would like just a couple of minutes to look back.

(Recess.)

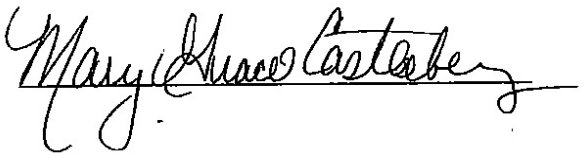
MR. GOLUB: I don't have any more questions.

(Whereupon, at 3:02 p.m., the taking of the instant deposition ceased.)

CERTIFICATE OF REPORTER

UNITED STATES OF AMERICA) ss.:
STATE OF MARYLAND)

I, MARY GRACE CASTLEBERRY, RPR, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties for the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.



Notary Public in and for
the State of Maryland

My commission expires: 06/18/2027

Notice Date: Friday, 11. July 2025

156544

Attention: Prabhat Mishra, Ph.D.

Re:Lenovo (United States) Inc. v. Intellectual Ventures, LLC
Deposition of Prabhat Mishra, Ph.D. (6/26/2025)

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The above referenced transcript is available for review. Within 30 days, or the applicable timeframe of your legal jurisdiction, the witness may read the testimony to verify its accuracy. Any changes can be noted on the following errata page.

Once the transcript has been reviewed, the witness should sign and date the certificate of deponent page. The signed certificate, errata, and original transcript (if provided) must be returned to TP.One per the rules of civil procedure.

If the transcript and errata are not returned within the allotted time, the unsigned transcript may be used as if signed by the witness.

Thank you,

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Deponent Errata Page 156544

Notice Date: 07/11/2025

Deposition Date: 6/26/2025

Deponent: Prabhat Mishra, Ph.D.

Case Name: Lenovo (United States) Inc. v. Intellectual Ventures, LLC

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CERTIFICATE OF DEPONENT 156544

I hereby certify that I have read and examined the foregoing transcript, and the same is a true and accurate record of the testimony given by me. Any additions or corrections that I feel are necessary, I will attach on a separate sheet of paper to the original transcript.

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Signature of Deponent

I hereby certify that the individual representing himself/herself to be the above-named individual, appeared before me this _____ day of _____, 20__, and executed the above certificate in my presence.

_____

NOTARY PUBLIC IN AND FOR

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County Name

MY COMMISSION EXPIRES:

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