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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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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LENOVO (UNITED STATES) Inc.

Petitioner,

v.

INTELLECTUAL VENTURES, II LLC,

Patent Owner,

IPR2024-00109

U.S. Patent Number 8,474,016

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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.

1 APPEARANCES:

2

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4 States) Inc.:

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1 APPEARANCES: (Continued)

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C O N T E N T S

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WITNESS

EXAMINATION BY COUNSEL FOR

3

PRABHAT MISHRA, Ph.D.

PETITIONER

PATENT OWNER

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BY MR. HEINTZ

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BY MR. GOLUB

148

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BY MR. HEINTZ

150

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AFTERNOON SESSION - 92

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10

E X H I B I T S

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EXHIBIT

PAGE

12

NO. 1001

United Patent Number 8,474,016

106

13

NO. 1003

Declaration of Sigurd Meldal,

109

14

Dr. Scient

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NO. 1005

United States Patent

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Application Publication US

17

2003/0226015 A1, Neufeld

18

NO. 1007

United States Patent

131

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Application Publication US

20

2003/0097503 A1, Huckins

21

NO. 1020

IPMI Specification v1.5

108

22

1	E X H I B I T S (Continued)		
2	EXHIBIT		PAGE
3	NO. 2007	Expert Report of Dr. Prabhat	9
4		Mishra in Support of Patent	
5		Owner's Response	
6	NO. 2010	Texas Instruments document	102
7		titled A Basic Guide to I2C	
8	NO. 2011	PCI Local Bus Specification,	102
9		Revision 2.3, March 29, 2002	
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1 P R O C E E D I N G S

2 Whereupon,

3 PRABHAT MISHRA, Ph.D.,

4 was called as a witness by counsel for Petitioner,

5 and having been duly sworn by the Notary Public, was

6 examined and testified as follows:

7 EXAMINATION BY COUNSEL FOR PETITIONER

8 BY MR. HEINTZ:

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

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

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

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

15 A. Yes, that is correct.

16 Q. Sir, have you ever been deposed before?

17 A. In patent settings, no.

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

20 A. Yes.

21 Q. What other settings were those?

22 A. Those are not related to patents.

1 Q. I understand. And can you tell me what
2 was it was relating to?

3 A. Some of them are personal, some of them
4 are witness but not related to patents.

5 Q. Okay. Were any of them criminal matters?

6 A. No.

7 Q. Dr. Mishra, as you know, this deposition
8 is being recorded by the reporter, Ms. Castleberry,
9 so it's important that when we conduct this
10 deposition, that we not speak over each other. So
11 I'll ask that you wait until I finish asking the
12 question before you give your answer, and I will
13 endeavor to wait until you finish your answer before
14 I ask the next question. Is that okay with you?

15 A. Yes.

16 Q. All right. And, sir, I'll assume that if
17 I ask a question and you answer it, you understood
18 the question, and you should also know that if you
19 don't understand a question, you are free to ask me
20 to clarify it or rephrase it. Is that all right?

21 A. Yes.

22 Q. Dr. Mishra, is there any reason that you

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

3 MR. GOLUB: Object to the form.

4 THE WITNESS: No.

5 BY MR. HEINTZ:

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

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

12 BY MR. HEINTZ:

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

15 A. It's open.

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

20 A. That's correct.

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

1 A. Yes, Mr. Heintz.

2 Q. Thank you, sir.

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

6 A. I'm in 104.

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

11 A. That is correct.

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

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

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

22 A. Yes.

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

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

5 BY MR. HEINTZ:

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

8 A. It's done.

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

14 MR. GOLUB: Objection.

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

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

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

21 BY MR. HEINTZ:

22 Q. In paragraph 104, there is a statement

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

4 Do you see that, Dr. Mishra?

5 A. That's correct.

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

10 A. That is correct.

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

13 A. Yes.

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

21 A. Yes.

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

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

3 A. That's correct.

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

9 Do you see that?

10 A. Yes.

11 Q. And that's your opinion, correct?

12 A. That is correct.

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

17 A. Yes and no. So --

18 Q. Okay.

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

1 the entirety of the Neufeld.

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

3 THE WITNESS: Entirety, e-n-t-i-r-e-t-y.

4 So entirely if I look at the document, the scope of

5 Neufeld is about out-of-band remote management

6 system.

7 BY MR. HEINTZ:

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

11 A. That is correct.

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

17 A. You are referring to the second line of
18 91?

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

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

3 A. That is my understanding.

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

7 A. That is my understanding.

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

11 A. I am there.

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

22 A. Yes.

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

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

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

9 MR. GOLUB: Objection.

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

12 MR. GOLUB: It's outside the scope.

13 MR. HEINTZ: Outside the scope of what?

14 MR. GOLUB: It just uses the term
15 disparage.

16 MR. HEINTZ: Okay.

17 BY MR. HEINTZ:

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

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

1 he's not in favor of it.

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

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

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

14 MR. GOLUB: Objection, outside the scope.

15 BY MR. HEINTZ:

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

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

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

1 question, Dr. Mishra?

2 A. I answered it, sir.

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

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

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

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

19 A. That's not what I said.

20 Q. Okay.

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

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

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

7 A. That is correct.

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

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

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

17 A. So -- yes. So there are two places, 11 to
18 14, were cited. I'm trying to figure out which cite
19 is it, on the 49 or at the beginning of 50? Which
20 one are you referring to?

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

22 A. Would you repeat the question, please?

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

4 A. That is correct.

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

7 A. I am at Neufeld.

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

10 A. Just give me a minute.

11 Q. Oh, sure.

12 A. Yes.

13 MR. GOLUB: What page are we on?

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

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

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

19 MR. GOLUB: Okay.

20 MR. HEINTZ: In paragraph 11.

21 MR. GOLUB: Thank you.

22 BY MR. HEINTZ:

1 Q. Okay. So, Dr. Mishra --

2 A. I'm sorry, you meant page 12 or paragraph
3 12?

4 Q. Actually, paragraph 11 --

5 A. That's on page 1.

6 Q. No, it's on page 5.

7 A. Okay. I got it. Paragraph 11. I'm
8 there.

9 Q. Okay. And just so we're all clear, that's
10 the paragraph that begins with the words, "Remote
11 management tools," correct?

12 A. That's correct.

13 Q. Now, that paragraph states about midway
14 through that, "In-Band communication with the server
15 is, accordingly, only possible when the server is
16 able to communicate over its normal network
17 connection. Practically speaking, this limitation
18 restricts in-band communication to times when the OS
19 of the managed server is operational (online),"
20 correct?

21 A. Yes.

22 Q. Okay. And that appears to be the basis

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

4 MR. GOLUB: Objection.

5 BY MR. HEINTZ:

6 Q. -- is that true?

7 A. That's not correct.

8 Q. Okay. What was wrong with that statement?

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

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

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

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

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

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

20 A. Yes.

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

1 A. Yes.

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

6 MR. GOLUB: Objection.

7 THE WITNESS: No.

8 BY MR. HEINTZ:

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

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

13 Q. Okay.

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

17 Q. Okay.

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

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

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

3 A. Yes and no.

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

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

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

16 MR. GOLUB: Objection, misstates the
17 exhibit.

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

21 BY MR. HEINTZ:

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

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

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

10 A. Yes and no.

11 Q. Okay.

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

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

21 A. It's talking about limitation.

22 Q. Okay. In paragraph 13, is there any

1 disparagement of in-band communication of remote
2 management messages?

3 A. Please give me a moment to read.

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

6 A. Yes, Mr. Heintz.

7 No.

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

11 A. Please give me a moment to read.

12 Q. Sure.

13 A. No.

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

16 A. I am there.

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

20 A. Give me a moment to check.

21 Q. Sure.

22 A. No.

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

7 MR. GOLUB: Objection.

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

10 BY MR. HEINTZ:

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

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

21 A. Yes, Mr. Heintz.

22 Q. And the next sentence says, "To facilitate

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

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

9 A. Yes, I do.

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

14 A. Neufeld is talking about the
15 possibilities.

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

20 A. That's one of the possibilities.

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

1 according to paragraph 15, correct?

2 A. There are only four possibilities.

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

6 A. These are the only four possibilities.

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

10 A. What is the context for discussion?

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

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

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

19 BY MR. HEINTZ:

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

22 A. No.

1 Q. Okay. Let's try again.

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

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

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

1 all four of those possibilities, yes or no?

2 A. No.

3 Q. Okay.

4 A. So I'll state the reason.

5 Q. All right.

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

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

21 A. I'm at 91 of my declaration.

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

1 record.

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

7 Do you see that portion of the sentence?

8 A. Yes.

9 Q. Okay. Now, just to set the table, by
10 network N, we are talking about what's disclosed in
11 the Neufeld patent, which is Exhibit 1005, in figures
12 1 and 2, correct?

13 A. I am there.

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

19 A. That is correct.

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

1 A. That is correct.

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

9 A. Yes.

10 Q. Of Neufeld?

11 A. Yes.

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

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

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

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

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

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

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

17 BY MR. HEINTZ:

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

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

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

5 A. I'm not going to speculate.

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

9 MR. GOLUB: Objection, misstates
10 testimony.

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

14 BY MR. HEINTZ:

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

20 A. Can I have a minute?

21 Q. You may.

22 A. Thank you.

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

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

9 MR. GOLUB: Objection, form.

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

13 BY MR. HEINTZ:

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

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

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

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

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

7 A. That is correct.

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

12 MR. GOLUB: Objection, outside the scope.

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

15 BY MR. HEINTZ:

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

21 A. No.

22 Q. You don't understand that, okay.

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

8 A. Yes.

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

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

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

1 that, please?

2 A. Yes, I opened it.

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

7 A. Okay.

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

17 Do you see that sentence?

18 A. Yes.

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

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

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

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

14 MR. GOLUB: Objection.

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

17 BY MR. HEINTZ:

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

1 network M, correct?

2 A. I understand but I respectfully disagree
3 with it.

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

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

14 Q. Okay.

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

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

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

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

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

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

19 BY MR. HEINTZ:

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

22 A. That is correct.

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

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

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

11 A. That is correct.

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

15 A. Thank you.

16 (Recess.)

17 BY MR. HEINTZ:

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

1 correct?

2 A. Yes.

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

9 A. Yes.

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

12 A. Please give me a minute.

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

15 A. What paragraph number, Mr. Heintz?

16 Q. Paragraph 38.

17 A. I am at 38.

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

21 A. Yes.

22 Q. And it's not until paragraph 50 that

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

4 A. Please give me a moment.

5 Q. Sure.

6 A. That is correct.

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

9 A. Okay.

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

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

16 Q. -- "is a remote management controller
17 116," correct?

18 A. Yes.

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

22 A. No.

1 Q. No?

2 A. That sentence doesn't -- is not there.

3 Q. So somehow the PCI bus 16 can be connected
4 to the RMC 116 but the RMC 116 is not connected to
5 the PCI bus 16, is that what you're saying?

6 A. I'm simply saying I don't see that
7 sentence.

8 Q. Okay. Does paragraph 43 of Neufeld
9 disclose that the remote management controller 116 is
10 connected to the PCI bus 16 in figure 2?

11 A. It says the opposite, but yes.

12 Q. Okay. Let's read the next sentence of
13 paragraph 43 and see what you think that means. It
14 says, "The remote management controller 116 connects
15 to the keyboard controller 38, the network N and/or a
16 management network M, a keyboard 52, and a mouse 54
17 to provide functionality for accessing, interacting,
18 and monitoring the managed server 2 from the remote
19 console 5 as will be more fully described below."

20 Did I read that correctly?

21 A. Yes, Mr. Heintz.

22 Q. Okay. So paragraph 43 says the RMC, which

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

4 A. Yes.

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

9 A. That is correct.

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

14 A. Where does it state in here?

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

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

20 Q. Okay. I think I understand your point.
21 How about this. If a remote management
22 command were to come to the remote management

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

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

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

8 A. That's --

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

14 A. That is correct based on Neufeld.

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

19 MR. GOLUB: Objection.

20 BY MR. HEINTZ:

21 Q. That's your opinion, correct?

22 MR. GOLUB: Objection, asked and answered.

1 BY MR. HEINTZ:

2 Q. Correct, Dr. Mishra?

3 A. I already answered it.

4 Q. Did I state your opinion correctly?

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

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

11 A. The paragraph says that.

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

14 A. Not directly.

15 Q. Does it show an indirect connection?

16 A. That is correct.

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

19 A. That is correct.

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

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

3 MR. GOLUB: Objection, misstates the
4 exhibit.

5 BY MR. HEINTZ:

6 Q. Yes or no, Dr. Mishra?

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

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

19 MR. GOLUB: Objection, misstates the
20 exhibit.

21 BY MR. HEINTZ:

22 Q. Dr. Mishra?

1 A. When I formed my opinion, it's on the
2 entirety of the document. The notion of snooping has
3 been highlighted and subsequent references also
4 highlighted this is a passive snooping mechanism,
5 which is still consistent with that sentence because
6 when there is a communication from network N via NIC
7 110, remote management controller would be able to
8 observe them to understand what's going on. So they
9 are not contradicting each other, in my opinion and
10 that sentence, but it's simply saying command NIC 110
11 cannot send the command to remote management
12 controller.

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

17 A. Via network N, all the other components
18 wherever connected to PCI bus, for example, processor
19 2, through north-bridge, video graphics controller.
20 I talked about all of them in detail in my
21 declaration.

22 Q. I understand. So that means that if a

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

3 A. It can see that message.

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

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

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

1 MR. GOLUB: Objection, misstates
2 testimony.

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

7 BY MR. HEINTZ:

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

11 A. I did not say that.

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

16 MR. GOLUB: Objection.

17 BY MR. HEINTZ:

18 Q. Yes or no?

19 MR. GOLUB: Objection, asked and answered.

20 BY MR. HEINTZ:

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

22 A. No.

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

5 A. Yes.

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

9 A. Would you please repeat the question?

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

13 A. I did not say that.

14 Q. Okay.

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

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

20 A. Give me a moment.

21 Q. Sure.

22 A. Yes, that's correct.

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

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

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

10 A. For snooping.

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

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

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

22 MR. GOLUB: Objection, mischaracterizes

1 his testimony.

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

9 BY MR. HEINTZ:

10 Q. So I'm going to ask you point-blank, is
11 there anywhere, other than what you read in paragraph
12 43, where there is any discussion of the RMC 116
13 snooping traffic on network N? You can take as long
14 as you'd like to look at Neufeld to answer that
15 question but I need an answer to that question,
16 Dr. Mishra.

17 A. Give me a few minutes.

18 No, that exact sentence does not appear.

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

1 no?

2 A. It is snooping traffic N.

3 Q. I'm asking if there is disclosure of that

4 anywhere in Neufeld, other than perhaps the way you

5 interpret paragraph 43. So is there any other

6 paragraph in Neufeld where there is any discussion of

7 the RMC snooping traffic on network N?

8 Again, you can have as long as you like to

9 look through Neufeld to answer that question.

10 A. That direct sentence is not there but

11 that's directly implied, because snooping is -- let

12 me do the counting.

13 Q. Okay.

14 A. Snooping has been referred five times,

15 that remote management controller snoops on the PCI

16 bus. Based on my knowledge of teaching computer

17 architecture 20 years, anybody connected to PCI bus,

18 indirectly it snoops. So therefore, I still stand by

19 my statement in the declaration.

20 Q. Where is the first instance of snooping

21 discussed in Neufeld, the first of the five instances

22 you just referred to in your answer?

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

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

5 A. I read: "The remote management controller
6 116, as described in more detail below, includes
7 circuitry for snooping the PCI bus for configured
8 transactions between the processor 10 and the video
9 graphics controller 114 to determine configuration
10 and mode formation, such as whether the video
11 graphic's controller is in text or graphics mode.

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

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

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

17 A. Not directly.

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

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

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

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

12 A. That is correct.

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

15 A. Not directly.

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

19 A. Yes, if you want me to.

20 Q. Yeah. What paragraph are you at?

21 A. So next one is paragraph 72.

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

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

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

8 A. That is correct.

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

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

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

16 A. Not directly.

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

20 A. That is correct.

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

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

3 MR. GOLUB: Objection, misstates
4 testimony.

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

12 BY MR. HEINTZ:

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

17 A. Give me a moment, please.

18 Q. Sure.

19 A. Paragraph 43 simply states it connected.

20 Q. Okay. "It," meaning what?

21 A. It just says it connects.

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

1 A. The remote management controller connects
2 to different components.

3 Q. One of which is network N, right?

4 A. That is correct.

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

7 A. That is correct.

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

13 A. That is correct.

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

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

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

1 correct?

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

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

11 BY MR. HEINTZ:

12 Q. So the most plausible opinion in your
13 estimation is that even though paragraph 43 says that
14 the RMC is connected to the network N for
15 interacting, monitoring and accessing the managed
16 server 2 and even though nowhere is there any express
17 disclosure in Neufeld of snooping network N, that
18 disclosure is -- the most reasonable interpretation
19 of that disclosure is the only reason that the RMC
20 116 is connected to network N is just to snoop
21 network N. Is that your opinion?

22 MR. GOLUB: Objection, misstates the text

1 of paragraph 43 of Neufeld, Exhibit 1005.

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

6 MR. GOLUB: Yeah, to form.

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

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

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

16 BY MR. HEINTZ:

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

19 A. Would you please repeat the question?

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

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

8 MR. GOLUB: Objection, misstates exhibit.

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

18 Now, the reason I formed my opinion is
19 because PCI bus architecture, which I teach every
20 day, has limitation who can talk to whom and how in
21 2002. It also formed the opinion based on what
22 Neufeld repeatedly said how RMC talks to PCI bus in

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

5 BY MR. HEINTZ:

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

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

15 MR. GOLUB: Objection.

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

18 BY MR. HEINTZ:

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

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

4 MR. GOLUB: Objection, misstates exhibit.

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

7 BY MR. HEINTZ:

8 Q. Okay. What does it say?

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

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

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

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

1 A. I'm not sure.

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

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

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

11 MR. GOLUB: Objection.

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

16 BY MR. HEINTZ:

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

19 A. What was the question again?

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

22 A. I do not know.

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

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

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

14 A. I don't want to speculate.

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

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

1 Q. You read Neufeld, didn't you?

2 A. I did Neufeld.

3 Q. And you can't tell from Neufeld whether
4 in-band remote management message communication was
5 known at the time Neufeld was written? You can't
6 figure that out, huh?

7 A. Not at this time.

8 Q. Okay. You read IPMI, didn't you? IPMI
9 version 1.5?

10 A. I did.

11 Q. And you know IPMI version 1.5 was before
12 the '016 patent, right?

13 A. I need to look at the dates.

14 Q. Okay. We'll be talking about that later.
15 We'll do that later.

16 If paragraph 43 -- let me rephrase that.

17 Does the keyboard 52 and the mouse 54
18 provide functionality for interacting and monitoring
19 the managed server 2? I'm sorry. Let me rephrase
20 it.

21 Does the keyboard 52 and the mouse 54
22 provide functionality for accessing and interacting

1 with the managed server 2?

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

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

6 A. I'm at 43 now.

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

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

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

14 Q. Sure.

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

16 Q. It is.

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

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

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

1 mouse 54, right?

2 A. That is correct.

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

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

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

13 A. That is correct.

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

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

20 Q. Correct, network N.

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

1 again?

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

7 A. That is correct.

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

10 A. I am at 129.

11 Q. Okay. In about the middle of the
12 paragraph, you say that, "If the RMC attempts to use
13 this same NIC" -- and we're referring to NIC 110 or
14 2, correct?

15 A. NIC 110.

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

1 Do you see that?

2 A. Yes.

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

7 A. No, not correct.

8 Q. Okay. So what are you describing?

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

11 Q. Okay.

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

1 fundamentally flawed.

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

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

20 A. That is correct.

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

1 MR. GOLUB: Objection, scope.

2 THE WITNESS: No.

3 BY MR. HEINTZ:

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

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

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

1 wanted to do, correct?

2 A. No.

3 MR. GOLUB: Objection.

4 BY MR. HEINTZ:

5 Q. No?

6 A. No.

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

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

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

21 A. That's correct.

22 Q. And snooping means it could look at the

1 content of the messages, correct?

2 A. That's correct.

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

6 A. Sure.

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

9 A. This is hypothetical question, not related
10 to.

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

15 MR. GOLUB: Objection.

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

22 BY MR. HEINTZ:

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

4 MR. GOLUB: Objection.

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

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

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

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

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

19 MR. GOLUB: Objection.

20 THE WITNESS: I don't want to speculate.

21 BY MR. HEINTZ:

22 Q. Does Neufeld disclose any reason why the

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

2 A. Give me a moment to check.

3 Q. Sure.

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

6 Q. I'm sorry, say that again.

7 A. To do some in-band communication.

8 Q. What kind of in-band communication?

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

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

21 A. Not clear to me based on the document.

22 Q. Does Neufeld disclose that remote

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

3 A. Let me check.

4 Q. Okay.

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

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

9 A. Yes.

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

13 A. That will take an hour or two.

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

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

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

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

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

7 MR. GOLUB: Is that the question?

8 BY MR. HEINTZ:

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

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

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

1 A. Yes.

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

5 A. That is correct.

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

11 A. Normally that's the case.

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

14 A. Possible.

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

17 A. M.

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

20 A. That's correct.

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

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

5 A. That is correct.

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

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

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

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

20 BY MR. HEINTZ:

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

1 as in Nancy.

2 A. Please go slow.

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

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

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

9 A. Got it.

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

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

19 A. Okay.

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

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

4 A. Okay. What time we are coming back?

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

10 A. Okay.

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

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

20 BY MR. HEINTZ:

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

1 A. I may skip lunch today.

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

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

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

13 A. Okay.

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

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

20 BY MR. HEINTZ:

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

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

3 A. Thank you.

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

7 A. Thank you.

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

17 THE WITNESS: Thank you.

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

20 MR. GOLUB: Agreed.

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

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

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

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AFTERNOON SESSION

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(12:49 p.m.)

3

EXAMINATION BY COUNSEL FOR PETITIONER (RESUMED)

4

BY MR. HEINTZ:

5

Q. Dr. Mishra, do you have an answer to

6

either of the questions we posed before we went for

7

lunch?

8

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

9

have four pages to go.

10

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

11

A. Yes.

12

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

13

answers?

14

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

15

two questions?

16

Q. Yes.

17

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

18

finish it.

19

Q. Very good. We can just keep the tape

20

running if you like.

21

MR. HEINTZ: Counsel, up to you, so there

22

is no question about where we are on time.

1 MR. GOLUB: Okay. So 30 minutes is 1:20.

2 Is that when we'll come back on?

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

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

8 MR. HEINTZ: Okay. That's fine.

9 MR. GOLUB: But I may go on mute.

10 MR. HEINTZ: And that's fine.

11 (Pause.)

12 THE WITNESS: I'm ready.

13 BY MR. HEINTZ:

14 Q. Go ahead, Dr. Mishra.

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

19 Q. Okay.

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

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

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

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

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

22 Q. Okay.

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

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

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

12 A. That's correct.

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

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

22 Q. All right. I understand. And then you

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

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

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

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

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

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

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

14 A. That is my -- still my understanding.

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

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

1 possible.

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

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

17 Q. I'm sorry.

18 A. -- then it will not work.

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

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

5 A. That's correct.

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

11 MR. GOLUB: Objection, scope.

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

20 BY MR. HEINTZ:

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

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

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

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

18 A. No, Mr. Heintz.

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

22 A. I am at 39.

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

7 Do you see that?

8 A. Yes.

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

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

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

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

1 Q. Okay. Do you need me to put in Exhibit
2 2010, the Texas Instruments I2C document that you
3 cited?

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

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

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

10 BY MR. HEINTZ:

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

13 A. I'm looking at Exhibit 2011.

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

16 BY MR. HEINTZ:

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

19 A. This is PCI local bus specification.

20 Q. Okay.

21 A. 2002 version.

22 So to answer your question, PCI bus

1 specification does briefly mention about encryption
2 and decryption.

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

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

9 A. So 2011, it's page 275.

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

12 Is that native page 275 or exhibit page
13 275?

14 A. The native 275, Exhibit 289.

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

17 A. Yes.

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

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

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

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

7 A. Give me a moment, please.

8 Q. Sure.

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

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

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

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

20 A. Yeah, I completed my answer.

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

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

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

6 Q. Let's do in general first.

7 A. No.

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

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

12 Q. Sorry, you said a set of bates?

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

14 Q. Bits, sorry. Okay.

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

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

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

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

6 BY MR. HEINTZ:

7 Q. Do you have that?

8 A. Yes. 1001?

9 Q. Correct.

10 A. The patent we are talking about, correct?

11 Q. Correct, sir.

12 A. Yes, I have it.

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

17 A. Give me a moment, please.

18 Q. Sure.

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

22 Q. Sure. And that can mean any bus could

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

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

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

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

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

14 A. I am at 40.

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

1 Do you see that?

2 A. Yes, I do.

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

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

11 Q. Okay.

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

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

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

19 THE WITNESS: I've open it.

20 BY MR. HEINTZ:

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

1 Specification v1.5, right?

2 A. Yes.

3 Q. And the date of that is February 20th,
4 2002, correct?

5 A. That's correct.

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

8 A. That is my understanding.

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

13 A. That is correct.

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

16 BY MR. HEINTZ:

17 Q. So figure 12-1 comes from IPMI, Exhibit
18 1020. You understand that, right?

19 A. Give me a moment, please.

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

1 A. Yes, Mr. Heintz.

2 Q. Okay. It's exhibit page 128 or native
3 page 106.

4 A. Native 106?

5 Q. Correct, figure 12-1.

6 A. Of EX 1003?

7 Q. No, sir. IPMI, Exhibit 1020.

8 A. Oh, my apologies.

9 Q. No problem, sir.

10 A. 1020, 106.

11 Q. Correct.

12 A. I am in 106.

13 Q. Okay. You see figure 12-1 there, right?

14 A. Yes, I do.

15 Q. Now, you see that line with two arrows
16 between the LAN controller and the BMC in figure
17 12-1, correct?

18 A. That's correct.

19 Q. And underneath that it says the words
20 "sideband connection," right?

21 A. Yes.

22 Q. And IPMI is giving examples of what that

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

3 A. That's correct.

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

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

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

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

15 A. Sure.

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

22 A. Okay.

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

3 A. That's what is in the diagram.

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

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

13 Q. Okay.

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

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

20 A. There are several embodiments.

21 Q. Okay.

22 A. But the first bus is basically a bus

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

3 Q. Uh-huh.

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

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

10 A. That's correct.

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

14 A. I2C is communicating, yes.

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

20 A. No.

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

1 A. 133 in which exhibit, Mr. Heintz?

2 Q. Your declaration, sir, Exhibit 2007.

3 A. 133.

4 Q. Correct, paragraph 133.

5 A. Give me a moment, please.

6 Q. Certainly.

7 A. I am at 133.

8 Q. All right. So at the beginning of that
9 paragraph, you say, "In grounds 9-15, the petition
10 relies on IPMI (Exhibit 1020) as the primary
11 reference," correct?

12 A. Yes, sir.

13 Q. And then you say, "Petitioner's
14 identification of the components of the platform
15 corresponding to the first bus and bus controller as
16 the claimed network device is fundamentally
17 inconsistent with the language of claim 1."

18 Do you see that?

19 A. Yes.

20 Q. So you're stating in that paragraph that
21 the petition identifies the first bus and the bus
22 controller as being part of the network device. Is

1 that your assertion?

2 A. That's what was my understanding.

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

9 A. Give me a moment, please.

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

14 A. Mr. Heintz?

15 Q. Yes, sir.

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

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

20 A. No. Oh, okay. So --

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

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

3 A. Give me a moment, please.

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

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

8 Q. Okay.

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

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

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

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

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

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

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

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

15 BY MR. HEINTZ:

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

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

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

1 1003 now?

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

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

8 Do you have it yet, sir?

9 A. Yes, I did.

10 Q. Okay.

11 A. So if you look at paragraph 94 of Exhibit
12 1003, native page 31, please.

13 Q. I am there, sir.

14 A. And --

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

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

22 Q. Okay.

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

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

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

17 Q. Okay. I'm there, sir.

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

1 look at where I got this picture from.

2 Q. So I see two pictures on page 85.

3 Which -- are you referring to the second one?

4 A. The second one, yes, please.

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

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

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

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

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

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

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

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

4 Q. Yes.

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

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

11 A. That's what is my understanding.

12 Q. Okay. Well, let's go back to what the
13 petition actually says. I'm looking at where you
14 first directed me to, which is the petition for the
15 109 IPR, right, at page 55 where it says, "IPMI's BMC
16 is the claimed processor" --

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

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

21 A. One minute, please.

22 Q. Sure.

1 A. I'm at 55.

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

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

11 A. That's correct.

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

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

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

21 A. Native page 61 of the petition.

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

1 1- --

2 A. Figure 12-1, yes, please.

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

11 MR. GOLUB: Objection, form.

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

15 BY MR. HEINTZ:

16 Q. I see. Okay. So let's go back to page
17 55, native page 55.

18 A. Of the same exhibit?

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

21 A. I am at 55.

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

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

6 A. I think so.

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

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

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

17 MR. GOLUB: Objection.

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

1 open to interpretation, that's not my problem.

2 BY MR. HEINTZ:

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

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

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

17 A. Identified below. Yes, I see that.

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

21 A. I am there.

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

1 You understand that?

2 A. IPMI discloses this limitation.

3 Q. Right. But --

4 A. Yes.

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

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

9 Q. So the petition has a chart that
10 identifies what these limitations like 1.d are, okay?
11 So let's refresh your recollection. If we go up to
12 the petition, in the PDF version of it starting on
13 native page 9, you know, Roman numeral IX, PDF page
14 10, we've got a chart where the claims are broken
15 down and assigned identifiers, right?

16 A. Okay.

17 Q. Do you see that, sir?

18 A. I'm still going there.

19 Q. Ah, I'm sorry.

20 A. Is it italic 9 or --

21 Q. Roman numeral IX, PDF page 10.

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

1 see it.

2 Q. So there is a claims chart there, right?

3 And for claim 1, limitation 1.d is the first bus and

4 limitation 1.e is a bus controller coupled to the

5 processor via the first bus, right?

6 A. Yeah, I got it.

7 Q. So 1.d is the first bus, 1.e is the bus

8 controller, correct?

9 A. Yes, that's correct.

10 Q. So now we're going to go back to page 55,

11 okay? And we've looked at that sentence a couple of

12 times where in limitation 1.a, right, where it's

13 referring to the first bus and the bus controller

14 that are identified below, right? And that's in the

15 petition, okay.

16 So now we're going to go to the petition

17 in 1.d, right, which is at page 61. Now, 1.d is the

18 first bus, right?

19 A. Okay.

20 Q. And in the paragraph below limitation 1.d,

21 right, you can see that this sideband interface is

22 being identified in the petition as the first bus,

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

4 A. That's correct.

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

9 A. That's correct.

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

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

13 A. What time do we come back?

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

15 A. 2:20?

16 Q. That would be fine.

17 A. Thank you, sir.

18 (Recess.)

19 BY MR. HEINTZ:

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

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

4 A. Yes, sir.

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

8 A. Possible.

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

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

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

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

16 Q. Right. And in the petition on page 62,
17 under heading 6 for limitation 1.e, right, there is a
18 discussion there and I believe you'll see that the
19 petition is asserting that the non-PCI bus controller
20 126 of Huckins is that claimed bus controller in
21 limitation 1.e. That's at the bottom of 62 and onto
22 63, the non-PCI bus controller 126. Do you see that?

1 A. I do.

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

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

6 Q. I am.

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

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

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

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

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

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

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

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

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

13 BY MR. HEINTZ:

14 Q. So if you go to -- when you have Exhibit
15 1007 open, I'll direct your attention to
16 paragraph 26. Paragraph 26.

17 A. 131 is PCI bus based on Huckins --

18 Q. Yes.

19 A. -- I can confirm.

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

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

5 A. I see that.

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

12 MR. GOLUB: Objection to form.

13 BY MR. HEINTZ:

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

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

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

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

12 MR. GOLUB: Objection, form.

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

16 BY MR. HEINTZ:

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

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

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

1 speaker, right?

2 A. Do I have to answer that question?

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

5 Okay. Let's take a look at Huckins again.

6 That's Exhibit 1007.

7 A. I am there.

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

12 A. 130. I do see that.

13 Q. Okay. What's a hub?

14 A. Hub is a place to wait.

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

17 A. No.

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

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

22 Q. Okay.

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

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

5 Are you familiar with the concept of a USB
6 hub?

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

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

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

18 Q. Several years ago?

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

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

3 A. That's correct.

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

9 A. Today, yes.

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

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

22 Q. Sure. So you referred to a multihub

1 scenario. What multiple hubs are you talking about?

2 A. Let me go to my declaration, please.

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

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

7 Q. Okay.

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

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

19 A. Yes, sir.

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

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

3 A. Would you please say the question again?

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

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

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

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

19 Q. Is that your answer?

20 A. Yes, sir.

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

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

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

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

7 A. Okay.

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

10 A. Yes.

11 Q. I want to compare that figure to the
12 figure in the petition at native page 64, PDF page
13 77, which is the modified version of figure 12-1.

14 A. Okay. I'm there.

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

19 A. Correct.

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

1 A. Okay.

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

7 A. Yes.

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

10 A. That's correct.

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

15 A. That construction is wrong.

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

20 A. They are different.

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

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

3 A. That is correct.

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

8 A. Yes.

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

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

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

22 A. To have Huckins, you have to follow the

1 protocol of non-PCI bus controller.

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

6 A. My apologies. I didn't say that. PCI bus
7 131, non-PCI device, between that you need to have a
8 non-PCI bus controller. That's what Huckins states.

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

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

15 Q. Which one doesn't say?

16 A. The PCI-to-I2C bus controller.

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

19 A. I don't want to hypothesize here.

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

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

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

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

13 A. True.

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

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

22 Q. The petition states that whatever this bus

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

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

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

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

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

12 A. Huckins is a non-PCI bus controller.

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

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

21 Q. Okay.

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

1 give me a minute, I'll summarize.

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

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

7 A. Four zero?

8 Q. Yes, sir, four zero.

9 A. I'm at four zero.

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

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

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

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

22 A. Sorry, sir, where is multi?

1 Q. It's about the middle of the paragraph.

2 A. Yes, I found it. The protocol supports
3 multiple target devices, okay.

4 Q. And it also supports a single controller
5 as well as multiple controllers, right?

6 A. Okay.

7 Q. All right. Does an I2C bus have to have
8 at least one controller in order for it to be able to
9 support communications between the devices on the
10 bus?

11 A. I2C is a passive bus. Somebody has to
12 drive values into it. And somebody has to read
13 values from it.

14 Q. So does that mean that there must be a
15 controller for an I2C bus in order for devices to be
16 able to communicate on that bus?

17 A. I showed some usage scenarios. If you --
18 let me see where it is. Oh, it's in my declaration,
19 page 23 at the top.

20 Q. Okay.

21 A. How Texas Instruments uses it to connect
22 to analog-to-digital converter, as you allege,

1 digital-to-analog converter to I2C bus.

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

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

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

13 A. Yes.

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

17 A. Yes.

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

20 (Recess.)

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

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

3 MR. HEINTZ: Sure.

4 (Recess.)

5 EXAMINATION BY COUNSEL FOR PATENT OWNER

6 BY MR. GOLUB:

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

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

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

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

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

1 computation, it's not going to work.

2 "Question: Okay.

3 "Answer: That's what I tried explaining.

4 If you give me a minute, I'll summarize."

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

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

10 BY MR. GOLUB:

11 Q. Well --

12 A. Can I answer?

13 Q. Yes, go ahead.

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

16 You can answer.

17 BY MR. GOLUB:

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

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

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

11 Thank you for giving me the opportunity to
12 summarize.

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

15 EXAMINATION BY COUNSEL FOR PETITIONER
16 BY MR. HEINTZ:

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

20 A. BMC can be connected to I2C bus.

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

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

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

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

7 A. Petition.

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

11 A. I'm there.

12 Q. And actually, let me make it a little
13 easier. Let's go up and look at the actual figure
14 12-1 on native page 61.

15 A. I'm there.

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

18 A. LAN controller is connected to the PCI
19 bus.

20 Q. Yes?

21 A. Yes.

22 Q. And the LAN controller is also connected

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

3 A. That's correct.

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

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

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

11 A. Two components through I2C, you can
12 connect.

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

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

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

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

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

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

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

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

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

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

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

17 A. Yes.

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

22 A. Yes.

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

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

9 Q. All right. Let's assume that it's the
10 exact communication that's discussed in IPMI, which
11 is the sideband remote management messages that are
12 being directed toward the BMC. In that context, with
13 that amount of traffic, do you think there is some
14 problem in IPMI if I put an I2C bus bridge controller
15 between the LAN controller and the BMC in figure
16 12-1?

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

20 MR. HEINTZ: Thank you. No further
21 questions.

22 I believe we're done.

1 MR. GOLUB: I may have some redirect --

2 MR. HEINTZ: Oh.

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

5 (Recess.)

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

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

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CERTIFICATE OF REPORTER

2

3

UNITED STATES OF AMERICA) ss.:

4

STATE OF MARYLAND)

5

I, MARY GRACE CASTLEBERRY, RPR, the officer

6

before whom the foregoing deposition was taken, do

7

hereby certify that the witness whose testimony

8

appears in the foregoing deposition was duly sworn by

9

me; that the testimony of said witness was taken by

10

me to the best of my ability and thereafter reduced

11

to typewriting under my direction; that I am neither

12

counsel for, related to, nor employed by any of the

13

parties for the action in which this deposition was

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taken, and further that I am not a relative or

15

employee of any attorney or counsel employed by the

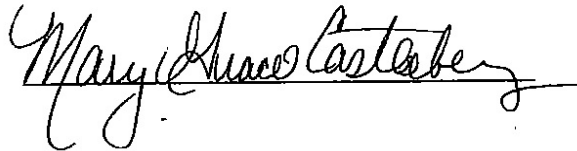
16

parties thereto, nor financially or otherwise

17

interested in the outcome of the action.

18



19

Notary Public in and for
the State of Maryland

20

21

22

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)

NOTICE REGARDING SIGNING DEPOSITION TRANSCRIPT

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,

TP.One Production Department
Production@TP.One



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.

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.

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