Transcript of Nigel A. Jones

Date: September 24, 2025
Case: BMW of North America, LLC -v- Foras Technologies Ltd. (PTAB)

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WORLDWIDE COURT REPORTING & LITIGATION TECHNOLOGY

BMW EXHIBIT 1037
BMW v. FORAS
IPR2024-01347

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

- - - - - - - - - - - - - - x
BMW OF NORTH : Case Nos. IPR2024-01346,
AMERICA, LLC, : IPR2024-01347
Petitioner, :
v. : U.S. Patent Nos.
FORAS TECHNOLOGIES LTD., : 7,624,302; 7,627,781
Patent Owner. :
- - - - - - - - - - - - - - X

Deposition of NIGEL A. JONES
Conducted Virtually
Wednesday, September 24, 2025
10:01 a.m. EDT

Job No.: 600699
Pages 1 - 143
Reported by: Debra A. Whitehead

2

Deposition of NIGEL A. JONES, conducted virtually.

Pursuant to notice, before Debra Ann Whitehead, E-Notary Public in and for the Commonwealth of Virginia.

3

A P P E A R A N C E S

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C O N T E N T S

EXAMINATION OF NIGEL A. JONES PAGE
By Ms. Zhang 5

EXHIBITS MARKED IN TODAY'S SESSION
(none marked)
EXHIBITS MARKED IN PRIOR SESSIONS
(not attached)

FROM IPR2024-01346 PAGE
Exhibit 1001 15
Exhibit 1005 75
Exhibit 1008 98
Exhibit 1028 105
Exhibit 2004 19
FROM IPR2024-01347 PAGE
Exhibit 1001 13
Exhibit 1005 75
Exhibit 1008 98
Exhibit 1028 105
Exhibit 2004 10
Exhibit 2005 20

5

1 P R O C E E D I N G S
2 NIGEL A. JONES,
3 having been duly sworn, testified as follows:
4 EXAMINATION BY COUNSEL FOR PETITIONER
5 BY MS. ZHANG:
6 Q Good morning, Mr. Jones.
7 **A Good morning.**
8 Q Would you please state and spell your
9 full name, for the record.
10 **A Nigel Andrew Jones. N-I-G-E-L**
11 **A-N-D-R-E-W J-O-N-E-S.**
12 Q Thank you. Have you been deposed before?
13 **A Yes.**
14 Q For how many times?
15 **A I think this is number five zero for me.**
16 Q And were any of those depositions in
17 inter partes review proceedings, or IPRs?
18 **A No.**
19 Q So you have never testified in an IPR
20 proceeding?
21 **A If by testifying you mean a deposition,**
22 **that is correct.**

6

1 Q I do have some general housekeeping.
2 Since we are doing a remote deposition,
3 please bear with me.
4 Please note it is important for the court
5 reporter that we do not talk over each other at
6 the same time. So please let me finish my
7 question before you answer, and I will do my best
8 to wait until your answer is done before asking my
9 next question.
10 Is that okay?
11 **A Yes.**
12 Q And you also need to give audible answers
13 instead of simply nodding your head, so the court
14 reporter can record your answers.
15 Is that okay?
16 **A Understood.**
17 Q And if at any time you do not understand
18 a question, please let me know. I will do my best
19 to rephrase or make my question clear. If you
20 answer a question, I will assume you understood
21 the question.
22 Is that okay?

7

1 **A Yes.**
2 Q And if you ever feel like you need to
3 take a break, let me know. If there's a question
4 pending, please finish answering the question
5 before taking a break.
6 Is that okay?
7 **A Yes.**
8 Q What did you do to prepare for today's
9 deposition?
10 **A I reviewed the patents. I reviewed the**
11 **prior art submitted by the petitioner. I reviewed**
12 **my declarations. And I met with counsel for**
13 **Foras.**
14 Q And who are the counsel for Foras you met
15 with?
16 **A The two gentlemen on the deposition**
17 **today. So Mr. Auchter and Mr. Lindner.**
18 Q And did you speak with anyone else?
19 **A You mean in preparation for this**
20 **deposition?**
21 Q Correct.
22 **A I don't think so.**

8

1 Q When did you meet with Mr. Auchter and
2 Mr. Lindner?
3 **A I met with them several times within the**
4 **last week.**
5 Q By "several times," can you specify how
6 many times you met?
7 **A I think it was three times with both of**
8 **them, and once just with Mr. Auchter.**
9 Q And for how long did you meet each time?
10 **A Typically between one and two hours.**
11 Q Did you review any other documents
12 besides the patents, the prior art, and your
13 declarations?
14 **A So to be clear, I don't agree that what**
15 **you characterized as the prior art is necessarily**
16 **prior art. So it's the prior art cited by BMW**
17 **that I reviewed.**
18 **I don't recall reviewing any other**
19 **documents. That's not true.**
20 **Oh, no. I'm sorry. Yes, that is true.**
21 Q Are you an expert opining what is and
22 what is not prior art?

9

1 MR. AUCHTER: Objection.
2 THE WITNESS: I'm sorry, what was the
3 objection?
4 MR. AUCHTER: Form.
5 THE WITNESS: To form. Thank you.
6 **A I'm just trying to make clear that when**
7 **you use the term "prior art," I was just**
8 **clarifying that you were referring to what BMW has**
9 **cited as prior art. I'm not necessarily agreeing**
10 **with that characterization. I was just clarifying**
11 **your question.**
12 **I believe at the start of the deposition**
13 **you asked me to do so for that.**
14 Q So it's your view certain references
15 submitted with the petition is not prior art.
16 Is that correct?
17 **A As I explained in my declaration -- let**
18 **me take you to the relevant part. So this is for**
19 **the '302.**
20 Q Let me hand you your declaration.
21 Do you have the link for downloading the
22 exhibits?

10

1 **A It was in the email. I'll have to open**
2 **up my email to get that. One minute, please.**
3 Q I just uploaded Exhibit 2004 on the link.
4 Please let me know when you can open that
5 document.
6 (IPR2024-01347 Exhibit 2004, previously
7 marked, not attached.)
8 **A Okay. I just opened the link for the**
9 **exhibit share, and I am seeing my '302**
10 **declaration.**
11 Q Okay. So you recognize this document as
12 your declaration for the IPR of the '302 patent.
13 Correct?
14 MR. LINDNER: Counsel, for the record, I
15 just wanted to check what was your plan for
16 handling the exhibit numbers, given that there's
17 overlap between the two different IPRs?
18 MS. ZHANG: Yeah. If that's okay for
19 you, I will identify the IPR and identify the
20 number of the exhibit.
21 MR. LINDNER: Okay. So you'll just do
22 that for each question referring to any of the

11

1 exhibits?
2 MS. ZHANG: Yeah, I do want to confirm
3 with Mr. Jones there's some shorthand for
4 referring to those documents.
5 MR. LINDNER: Okay.
6 **A Could I have the previous question,**
7 **please, if there's one still outstanding?**
8 Q Yes. You recognize this document as your
9 declaration in the '302 IPR. Correct?
10 **A Yes.**
11 Q Yes. And as Mr. Lindner noted, I would
12 like to note that you understand that your
13 testimony will be part of two IPRs. Correct?
14 **A My understanding is it's one IPR related**
15 **to '302 and the other IPR related to the '781**
16 **patents.**
17 Q Yes. The IPR for the '302 patent is IPR
18 Case Number IPR2024-01347 involving U.S. Patent
19 Number 7,624,302.
20 And if I refer to that --
21 **A Excuse me. That's not my understanding**
22 **of the IPR number. Maybe I misheard you or maybe**

12

1 **I have the wrong IPR number on my declaration.**
2 **But what you just said does not match my**
3 **declaration.**
4 Q Okay. So let's look at cover page of
5 your declaration.
6 **A Yes.**
7 Q And I see that on the front page you
8 identified the case number as IPR2023-01347.
9 **A That's correct.**
10 Q Where did you get that number?
11 **A I'm sorry?**
12 Q Where did you get this case number?
13 **A It was given to me by counsel.**
14 Q Okay. I can represent to you that this
15 case number is incorrect. The IPR case number for
16 the '302 patent is IPR2024-01347.
17 **A Okay.**
18 Q And this is for Patent 7,624,302.
19 **A So is that a question or a statement?**
20 **I'm unclear.**
21 Q Not a question yet.
22 MS. ZHANG: I'm going to upload the '302

13

1 patent to the exhibit link.
2 (IPR2024-01347 Exhibit 1001, previously
3 marked, not attached.)
4 Q Please let me know when you see it.
5 **A So I'm just seeing the first exhibit. Do**
6 **I have to do something to get the list of**
7 **exhibits?**
8 Q No, you don't. So this is Exhibit 1001
9 in the IPR2024-01347. And this is the '302
10 patent.
11 Do you recognize this document?
12 **A You misunderstood my question. At the**
13 **link I clicked on for the share file I am seeing**
14 **one and only one exhibit, and that was the first**
15 **exhibit you uploaded. I am not seeing any more**
16 **exhibits. So my question to you is, what do I**
17 **have to do to see the list of exhibits as they**
18 **currently exist at the link?**
19 Q I have only uploaded two exhibits to the
20 link, so you should only see two exhibits in the
21 share folder, at the website.
22 **A I understand that. I only see one**

14

1 **exhibit.**
2 (Discussion off the record; technical
3 difficulty.)
4 **A Okay. I now have what appears to be the**
5 **'302 patent on my screen.**
6 Q Okay. Do you recognize this document?
7 **A Yes.**
8 Q And is it okay we keep referring to this
9 as the '302 patent?
10 **A Yes.**
11 Q And you have reviewed this document
12 before?
13 **A Yes.**
14 Q And you have reviewed it in its entirety?
15 **A Yes.**
16 Q And do you understand what this document
17 discloses?
18 **A I'm sorry, what was the question?**
19 Q Do you understand what this document
20 discloses?
21 **A Yes.**
22 Q And now as we discussed, the IPR case

15

1 number for the '302 patent is IPR2024-01347. And
2 if I refer to this IPR as the '302 IPR, do we
3 understand what I'm talking about?
4 **A Yes.**
5 Q And the second IPR today is IPR Case
6 Number 2024-01346, involving U.S. Patent Number
7 7,627,781.
8 And if I refer to that IPR as the '781
9 IPR, do you understand what I'm talking about?
10 **A Yes.**
11 Q Okay. I'm uploading another exhibit from
12 the '781 IPR. And as Debbie mentioned, you might
13 need to refresh your browser to see it.
14 (IPR2024-01346 Exhibit 1001, previously
15 marked, not attached.)
16 MR. AUCHTER: And if I could interject
17 for a moment, you may also have to reload the
18 share file repository at least after the first
19 document. I had the exhibit, but I was no longer
20 able to go back to the directory.
21 **A Okay, I now have three documents. Two of**
22 **them are labeled Exhibit 1001.**

16

1 Q The second Exhibit 1001, can you open it?
2 **A Okay.**
3 Q And do you recognize this document?
4 **A So to be clear, it is unclear what you**
5 **meant by "second," because there's no particular**
6 **order here. But I have clicked on one of the**
7 **exhibits labeled Exhibit 1001, and I recognize it**
8 **as the '781 patent.**
9 Q Okay. You see the exhibit name. Right?
10 Exhibit 1001 dash U.S. Patent Number 7,627,781.
11 Correct?
12 **A Well, in my view, the full name is**
13 **truncated. So all I see is Exhibit 1001, dash,**
14 **U.S. Patent N, and then an ellipsis.**
15 Q So you open it and you see, you recognize
16 it as the '781 patent?
17 **A Correct.**
18 Q Have you reviewed this document before?
19 **A Yes.**
20 Q And you have reviewed it in its entirety?
21 **A Yes.**
22 Q And you understand the disclosure in this

17

1 document?
2 **A I'm sorry, please say that again?**
3 Q You understand what this document
4 discloses?
5 **A Yes.**
6 Q And now, if I refer to this IPR as the
7 '781 IPR, you understand what I'm talking about?
8 **A Yes.**
9 Q And who retained you for these IPRs?
10 **A BC Law Group.**
11 MS. ZHANG: I'm going to upload two
12 documents to the share file link. Give me one
13 minute.
14 MR. AUCHTER: While you're doing that, I
15 would like to note for the record that I, also,
16 have the same display that Mr. Jones had, inasmuch
17 as all it says is, EXP 1001, hyphen, U.S. Patent
18 N, followed by an ellipses for both exhibits. So
19 the full names are not appearing on the screen.
20 MS. ZHANG: Thank you, Mr. Auchter.
21 Q I just uploaded Exhibit 2004 in the '302
22 IPR. Please take a second to open it.

18

1 **A Okay.**
2 Q This is the declaration you provided in
3 the '302 IPR. Correct?
4 **A Yes.**
5 Q And is it okay if I refer to this
6 document as your '302 declaration?
7 **A Yes.**
8 Q Please turn to Page 20.
9 At the end of Page 20 please confirm
10 that's your signature.
11 **A Can we have an agreement that when you**
12 **refer to page numbers, you're referring to the**
13 **page number as printed on the document?**
14 Q Yes. If that works for you. I can also
15 refer to the page number of the exhibit, if you
16 prefer that.
17 **A Well, so just the point I'm making is**
18 **that Page 20 of my '302 declaration has stamped in**
19 **the bottom right-hand corner Page 22.**
20 Q Right. So it's Page 20 in your
21 declaration, Page 22 of the exhibit.
22 **A Of the exhibit. So in general, when**

19

1 **you're going to refer to page numbers, you are**
2 **referring to the page number of the document and**
3 **not the exhibit.**
4 **Is that correct?**
5 Q Yes, I can do that.
6 **A Okay. So, yes, that is my signature.**
7 MS. ZHANG: Okay. I uploaded another
8 document. This is Exhibit 2004 in the '781 IPR.
9 (IPR2024-01346 Exhibit 2004, previously
10 marked, not attached.)
11 Q Please let me know if you can see it.
12 **A Okay, I have it open.**
13 Q And can you confirm this is the
14 declaration you provided in the '781 IPR?
15 **A Yes.**
16 Q And is it okay if I refer to this
17 document as your '781 declaration?
18 **A Yes.**
19 Q And if you could turn to Page 23 of your
20 declaration.
21 **A I am there.**
22 Q And confirm, is that your signature?

20

1 **A Yes, it is.**
2 Q Okay. I am handing you another document.
3 This is Exhibit 2005 of the '302 IPR.
4 (IPR2024-01347 Exhibit 2005, previously
5 marked, not attached.)
6 Q Please let me know when you can open it.
7 **A Okay. I have it open.**
8 Q This is a copy of your CV. Correct?
9 **A It's a copy of my CV as of March the 1st,**
10 **2025.**
11 Q It accurately reflects your education,
12 professional positions, and experience. Correct?
13 **A Well, I guess, no. That's my point, is**
14 **that since that date I have testified in several**
15 **other matters.**
16 Q So it accurately reflects your education,
17 professional positions, and experience by March
18 1st, 2025. Correct?
19 **A Correct.**
20 Q So it says you are currently president of
21 RMB Consulting, Inc.
22 Is that still correct?

21

1 **A Yes.**
2 Q What type of consulting do you do in this
3 role?
4 **A So my consulting is in matters related to**
5 **electrical engineering and software. A lot of**
6 **that consulting is litigation-based.**
7 Q And for how long have you been in this
8 position or in this role?
9 **A I formed RMB Consulting in 1995.**
10 Q What percentage of your work time is
11 devoted to consulting work?
12 **A 100 percent.**
13 Q So let's look at Paragraph 9 of your '302
14 declaration.
15 **A Okay, I'm there.**
16 Q You state that you have 40 years of
17 experience designing complex electronic systems in
18 a number of fields. Correct?
19 **A Yes.**
20 Q What complex electronic systems are you
21 referring to here?
22 **A You mean, are you looking for a list of**

22

1 **everything I designed in 40 years?**
2 Q Yeah, if you could give us some examples,
3 that would be helpful.
4 **A All right. I started off designing strip**
5 **chart recorders. I moved on to designing PID**
6 **controllers.**
7 **From there I moved on to designing basis**
8 **weight beta gauges. And that involved consumable**
9 **electromechanical systems, largely software as**
10 **well as the electronics design.**
11 **I then moved into designing life-support**
12 **systems. I had designed control systems for a**
13 **very sophisticated burner. I have designed**
14 **products in use in consumers. I've designed smart**
15 **batteries. I've worked on a sophisticated**
16 **microwave telecommunications link. I've designed**
17 **networking cards.**
18 **I -- oh, I designed a system for a link**
19 cat (phonetic) changer. I designed a system for
20 controlling an encrypted circuit board
21 manufacturing line. I have designed a
22 near-infrared moisture gauge.

23

1 Oh, yes. I've done designs for
2 electromagnetic and radiofrequency-based cable
3 system detectors.
4 Yeah. I think that gives you a flavor.
5 I am not saying that's exhaustive, but that's just
6 what comes to mind.
7 Q Thank you. And did any of that work,
8 your design work of complex electronics systems,
9 involve studying or design the architecture of a
10 computer system?
11 **A Yes.**
12 Q Can you give an example?
13 **A So as I mentioned here, I have extensive**
14 **experience designing life-support systems, which**
15 **are safety critical systems where errant behavior**
16 **in a processor could lead to loss of life. So**
17 **I've worked on life-support systems. I worked on**
18 **them for 20 years.**
19 Q Does that system have multiple
20 processors?
21 **A Yes.**
22 Q And did you do any work related to the

24

1 design of the architecture of those processors?
2 **A I'm sorry, your question is ambiguous.**
3 **Can you clarify it, please?**
4 Q Did you do any work involving the design
5 of the architecture of those processors?
6 **A So you asked me to clarify your question.**
7 **So are you asking me did I design silicon that**
8 **makes up the microprocessor?**
9 Q No. My question is, did you do any work
10 involving the design of the architecture of the
11 processors in the life-support system that you
12 worked on?
13 **A I understand words you spoke. I am**
14 **seeking clarification.**
15 **To me the question did I design the**
16 **architecture of the processor suggests to me that**
17 **you're asking did I design the actual processor,**
18 **in other words its instruction set, its caches,**
19 **and all that sort of thing. Is that what you're**
20 **asking me, or are you asking me something else?**
21 Q I can repeat my question. My question
22 is, did you do any work involving the studying or

25

1 the design of the architecture of the processors
2 in the life-support system?
3 **A You just restating your question, when I**
4 **asked you to clarify it, doesn't clarify the**
5 **question.**
6 **So at the beginning of this deposition**
7 **you asked me explicitly that if I answered a**
8 **question, you would understand that I understood**
9 **the question. I am telling you I do not**
10 **understand your question as stated. And so I'm**
11 **asking you to clarify it such that I can give you**
12 **an answer.**
13 Q So you don't understand what architecture
14 mean when I was asking my question. Correct?
15 MR. AUCHTER: Objection. Form.
16 Mischaracterizes prior testimony.
17 **A So this is going to be a long deposition**
18 **if you start mischaracterizing my testimony.**
19 **I was very clear. You asked a question.**
20 **I asked a clarification for it, and you just**
21 **reiterated your question. So to then come back**
22 **and mischaracterize my answer is not acceptable.**

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1 **So please clarify your question, and I will**
2 **endeavor to answer it.**
3 Q So do you consider the life-support
4 system that you just described is a computer
5 system?
6 **A Yes.**
7 Q Would you turn to Paragraph 26 of your
8 '302 declaration.
9 **A I'm there.**
10 Q In this paragraph you said, "It is my
11 opinion that a person of ordinary skill in the art
12 as related to the '302 patent would have at least
13 a bachelor's degree in electrical engineering,
14 computer engineering, or equivalent, and at least
15 two years of prior work experience with computer
16 architecture, including experience relating to
17 fault tolerant computer architecture, as of the
18 earliest priority date of the '302 patent, October
19 25, 2004."
20 Correct?
21 **A That's correct. But I do continue in**
22 **terms of my definition of one of ordinary skill in**

27

1 **the art. So that's not a complete statement of**
2 **it.**
3 Q So do you have any work experience with
4 computer architecture?
5 **A Yes.**
6 Q And what is that experience?
7 **A The life-support system.**
8 Q So you consider life-support system as a
9 computer system?
10 **A It most definitely was a computer system,**
11 **yes.**
12 Q And do you understand what is the
13 architecture of that computer system?
14 **A I hope so. I designed it.**
15 Q And can you explain that, please.
16 **A Explain what?**
17 Q Can you explain that architecture of that
18 life-support system?
19 **A Yes. It was a three-processor system**
20 **involving redundant processing, redundant**
21 **intercommunication links between the processors,**
22 **with a voting architecture to ensure that the**

28

1 **right critical decisions were being made**
2 **correctly.**
3 **It was fault-tolerant, in that the system**
4 **could use any -- actually, it could use all three**
5 **computers --**
6 (Discussion off the record; technical
7 difficulty.)
8 Q Would you like me to repeat the question?
9 **A Yes, please.**
10 Q Can you explain the architecture of that
11 life-support system?
12 **A I'm sorry, can I have the question again?**
13 **I didn't quite hear you.**
14 Q Can you explain the architecture of that
15 life-support system.
16 **A Yes. It was a three-processor system.**
17 **It was redundant in that any two out of the three**
18 **systems could fail and the life-support system**
19 **would continue to operate. It included redundant**
20 **communication links, voting logic, and redundant**
21 **power supplies, all sorts of things to essentially**
22 **ensure that the person would stay alive in the**

29

1 **event of any single -- or, actually, any two**
2 **processor failures.**
3 Q Do you recall what types of those
4 processors in that system?
5 **A What do you mean by "types of**
6 **processors"?**
7 Q Do you remember what brand of those
8 processors?
9 **A No, I'm afraid I don't.**
10 Q Do you recall referring to any
11 instructions or specifications of those
12 processors?
13 **A I'm sorry, did I what?**
14 Q Do you recall looking at any instructions
15 or specifications of using those processors?
16 **A Well, I started work on that in 1991.**
17 **Excuse me. 1989. So if you're asking me do I**
18 **have a specific recollection of looking at a**
19 **document, no. But I have, of course.**
20 Q And have you done any work involving
21 Intel's processors specifically?
22 **A Yes, I've done work using Intel**

30

1 **processors.**
2 Q Can you give an example?
3 **A I was involved in -- involved in, I did**
4 **the architectural design for a fully autonomous**
5 **underwater vehicle, and that vehicle used Intel**
6 **processors. That's not the only time I've used**
7 **Intel processors, but it's the first one that**
8 **comes to mind.**
9 Q And when was that work?
10 **A Somewhere I think it was 15 to 20 years**
11 **ago.**
12 Q You said this is related to autonomous
13 underwater vehicle. Correct?
14 **A Yes.**
15 Q And that work was done 20 years ago?
16 **A No. I said my best guess it was done**
17 **between 15 and 20 years ago.**
18 Q Oh, my apologies, yes. That was done
19 between 15 to 20 years ago. Correct?
20 **A No. Again, my best guess is that it was**
21 **done between 15 and 20 years ago.**
22 Q And earlier you testified your CV is

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1 current up to March 1st, 2025. Correct?
2 **A Yes.**
3 Q Did you list that experience in your CV?
4 **A No. This CV that you have in front of**
5 **you is what I refer to as my expert witness CV,**
6 **where people are mostly interested in what cases I**
7 **worked on. I have a separate CV that lists my**
8 **engineering experience in detail.**
9 Q Did you provide that separate CV with
10 your declaration?
11 **A No, I haven't provided that CV to anybody**
12 **in years. To provide it I would have to spend a**
13 **considerable amount of time updating it, because**
14 **most of the time you lawyers are interested in the**
15 **cases I've worked on.**
16 Q Do you recall what Intel processors were
17 used in your work relating to the fully autonomous
18 underwater vehicle?
19 **A I don't recall the specific processor,**
20 **no.**
21 Q Do you recall looking at any instruction
22 set for the Intel processors you used?

32

1 **A So again, 15, 20 years ago do I have an**
2 **explicit recollection of looking at data sheets or**
3 **manuals, obviously not. Would I have looked at**
4 **something, of course.**
5 Q What would you have looked at? You said
6 you would have looked at something. What would
7 you have looked at when using those processors?
8 **A Well, for example, I'll give you an**
9 **example. An autonomous underwater vehicle is**
10 **battery powered by definition. Well, excuse me.**
11 **I guess not necessarily battery powered. It's not**
12 **connected to the mains. And so power consumption**
13 **would have been a significant parameter that I**
14 **would be interested in. And so I would certainly**
15 **have studied information related to the power**
16 **requirements of the system.**
17 Q I would like to transition to talking
18 about multiprocessor systems.
19 Do you agree that a multiprocessor system
20 typically includes a boot processor?
21 MR. AUCHTER: Objection to form.
22 Ambiguous.

33

1 **A Yeah, so are we talking in terms of any**
2 **specific patent here? Are we still on the '302?**
3 **What are we doing here?**
4 Q We're talking about in general. In a
5 multiprocessor system, does it typically include a
6 boot processor?
7 (Clarification by the court reporter.)
8 MR. AUCHTER: Same objection.
9 **A So you're asking me a vague question**
10 **without reference to date, any particular**
11 **architecture, nothing. You're just throwing a**
12 **question out there with no context whatsoever.**
13 **So I just don't think I can answer that**
14 **question. So, you know, unless you can focus it**
15 **for me and give me proper context, I think any**
16 **answer I give would just be misleading.**
17 Q Do you understand what is a
18 multiprocessor system?
19 **A Well, I would say a multiprocessor system**
20 **is a system with multiple processors.**
21 Q Are you aware of Intel's multiprocessor
22 systems?

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1 **A In what time frame, what architecture?**
2 **You're being very vague here, so if you can narrow**
3 **it down then I can maybe give you an answer.**
4 Q Are you aware of any Intel multiprocessor
5 systems before 2004?
6 **A Oh, you have now changed your question.**
7 **So before 2004 was there an Intel multiprocessor**
8 **system? Is that your question?**
9 Q Correct. Correct.
10 **A That's not something I've thought about.**
11 Q So you are not aware of any Intel
12 multiprocessor system before 2004. Correct?
13 MR. AUCHTER: Objection. Form.
14 Mischaracterizes prior testimony.
15 **A Yeah, I have -- I have to agree with**
16 **Mr. Auchter here. You know, I've already put you**
17 **on notice once about mischaracterizing me. So I**
18 **just said I haven't thought about it. And you**
19 **then turned that around and said I'm not aware of**
20 **it. You know, that's a blatant**
21 **mischaracterization. So please don't do that.**
22 **So my answer stands, I hadn't thought**

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1 **about it.**
2 Q I understand your answer, but my question
3 is different.
4 My question is, are you aware of any
5 Intel multiprocessor system before 2004?
6 **A And my answer was, I hadn't given it any**
7 **thought, or I hadn't thought about it. So if you**
8 **want me to sort of sit here and rack my brains to**
9 **see if I can recall working on Intel**
10 **multiprocessor system before 2004, I can certainly**
11 **do that. But it's not something I've given any**
12 **thought to, so I can't really answer your**
13 **question.**
14 MS. ZHANG: Okay. So we've been going
15 now for an hour. If that's okay for you, we take
16 a break and come back in ten minutes?
17 THE WITNESS: Ten minutes, ten past the
18 hour? Okay. Very good. Thank you.
19 (A recess was taken.)
20 BY MS. ZHANG:
21 Q Mr. Jones, before we took our break you
22 answered you didn't give any thought to Intel

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1 multiprocessor system before 2004.
2 Is that correct?
3 **A That's what I said, yes.**
4 Q Is it fair to say, in forming your
5 opinions in your '302 declaration and '781
6 declaration, you did not consider any Intel's
7 multiprocessor systems from before 2004?
8 **A So in forming my opinions that appear in**
9 **my '302 declaration, I considered the documents**
10 **that I mention in that declaration.**
11 Q That didn't answer my question. My
12 question is, in forming your opinions in your '302
13 and '781 declarations, did you consider any Intel
14 multiprocessor systems before 2004?
15 **A So I disagree. I did answer your**
16 **question. I told you what I considered in forming**
17 **my opinion.**
18 Q My question is specific to whether you
19 have considered any Intel multiprocessor systems
20 prior to 2004?
21 MR. AUCHTER: Objection. Form. Asked
22 and answered. Ambiguous. Argumentative.

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1 **A Yeah, I have to agree with Mr. Auchter.**
2 **I feel that I've answered that question perfectly**
3 **adequately. I told you exactly what I considered**
4 **in coming to my opinions expressed in the '302 and**
5 **'781 declarations.**
6 Q So besides what you told me what you
7 considered in forming your opinion, you considered
8 nothing else.
9 Is that fair?
10 MR. AUCHTER: Objection to form.
11 **A So in my previous answer I specified the**
12 **documents that appear in my declaration. I also**
13 **considered the legal principles that I enumerate**
14 **in my declaration. That certainly formed part of**
15 **how I came to my opinion, but that is not a**
16 **document per se. This is the understanding -- my**
17 **understanding of the law as explained to me by**
18 **counsel for Foras.**
19 **I also considered the documents in light**
20 **of one of ordinary skill in the art.**
21 Q Anything else?
22 **A Yeah, I'm just looking.**

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1 **So I don't see an explicit reference to**
2 **it, but I also considered the petition. But I**
3 **also clarified that right now, this answer I've**
4 **just given is limited to the '302. If you want me**
5 **to expand it to include '781, then I'll need to**
6 **review the '781 declaration.**
7 **Would you like me to do that?**
8 Q No. I'd like to focus on the '302 for
9 now.
10 **A Well, the reason I ask is because I**
11 **believe the previous question from you encompassed**
12 **both the '302 and the '781. So I just want to**
13 **clarify that we are talking at this point solely**
14 **about the '302.**
15 Q So in forming your opinion for the '302
16 declaration, did you consider anything else?
17 **A So other than the documents explicitly**
18 **listed in my declaration, I considered the legal**
19 **principles that are listed in my declaration. I**
20 **considered the documents in light of one of**
21 **ordinary skill in the art. And flipping quickly**
22 **through it, I didn't see an explicit reference to**

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1 **the petition that BMW filed in this matter, but I**
2 **did read and consider the petition as part of**
3 **forming my opinions here.**
4 Q So you said you considered the documents
5 in light of one of ordinary skill in the art.
6 Correct?
7 **A Yes.**
8 Q And in that consideration, did you
9 consider any Intel multiprocessor systems from
10 before 2004?
11 **A Well, you've asked me that question I**
12 **think four times now, and I've told you what I**
13 **considered.**
14 Q You did not answer my question whether
15 you considered any Intel processor system from
16 before 2004. It's a yes-or-no answer.
17 MR. AUCHTER: Objection. Form.
18 Argumentative.
19 Is there a question pending?
20 **A My understanding of my role in these**
21 **proceedings is to help the PTAB understand my**
22 **opinions. And you asking me to give yes-or-no**

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1 **answers to questions doesn't necessarily help the**
2 **PTAB understand my opinion.**
3 **So my opinion is is that the documents**
4 **that I have considered in forming my opinion are**
5 **as listed in my declaration, together with the**
6 **things that I previously enumerated.**
7 Q In considering the documents that you
8 have listed in forming your opinions, in light of
9 the ordinary skill in the art, did you consider
10 any Intel multiprocessor systems from before 2004?
11 **A So I understand that you just reasked the**
12 **same question, so I will just give you the same**
13 **answer as previously.**
14 Q Can you answer the question?
15 **A Yes. I gave you my answer previously.**
16 **If you'd like, we can ask the court reporter to**
17 **read it back for us. But I don't think you**
18 **changed your question, and so I haven't changed my**
19 **answer.**
20 Q Is it fair to say in your answer you did
21 not list any Intel processor -- multiprocessor
22 system before 2004 as document that you

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1 considered?
2 **A No, it's not fair to say.**
3 Q Why?
4 **A Because again, you're trying to spin my**
5 **answer. I told you exactly the documents I**
6 **considered. They are spelled out in my**
7 **declaration. That tells you everything you need**
8 **to know about what I considered.**
9 Q I'd like to turn to your '781
10 declaration. In forming your opinions in the '781
11 declaration, did you consider any Intel
12 multiprocessor system from before 2004?
13 **A Can I ask that when you switch documents,**
14 **you give me a chance to bring them up?**
15 **So I just loaded the '781 declaration.**
16 **So if I can have the question again, please?**
17 Q Yes. In forming your opinions in the
18 '781 declaration, did you consider any Intel
19 multiprocessor system from before 2004?
20 **A So you basically asked me exactly the**
21 **same question, but this time with respect to the**
22 **'781 declaration.**

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1 **Is that true?**
2 Q Do you understand my question?
3 **A Well, I tell you my understanding of the**
4 **question, but you've asked the same question but**
5 **with respect to the '781 declaration. And I would**
6 **say that the materials I considered for the '781**
7 **declaration are all of the documents that I**
8 **referred to in my declaration. In addition, I**
9 **considered the legal principles that are in**
10 **Section 3 of my declaration. I considered one of**
11 **ordinary skill in the art in Section 4.**
12 Q Anything else?
13 **A I'm nearly there.**
14 **So again, looking through here, I don't**
15 **see any reference to the petition, but I certainly**
16 **considered the petition as well.**
17 Q Anything else?
18 **A Nothing is coming to mind.**
19 Q So with respect to the '781 declaration,
20 in considering the documents and sections that you
21 listed above, in light of the ordinary skill in
22 the art defined in your declaration, did you

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1 consider any Intel multiprocessor system from
2 before 2004?
3 MR. AUCHTER: Objection to form.
4 **A So I've answered this question now**
5 **multiple times. I considered the documents, and**
6 **in the legal section, and one of ordinary skill in**
7 **the art, and the petition in coming to my opinions**
8 **in the '781 declaration.**
9 Q Would one of ordinary skill in the art --
10 scratch that.
11 What do you mean by "one of ordinary
12 skill in the art"?
13 **A So can I direct you to Paragraph 24 of my**
14 **'781 declaration.**
15 Q I have your declaration.
16 **A So Paragraph 24 is my understanding of**
17 **what a person of ordinary skill in the art is.**
18 Q What is your understanding of a person of
19 ordinary skill in the art for these IPR
20 proceedings, the '302 IPR and the '781 IPR?
21 MR. AUCHTER: Objection. Form.
22 Compound.

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1 **A So my opinion of one of ordinary skill in**
2 **the art for the '781 patent is as laid out in**
3 **Paragraph 26 of my '781 declaration.**
4 **My opinion about one of ordinary skill in**
5 **the art for the '302 patent is laid out in**
6 **Paragraph 26 of my '302 declaration.**
7 Q Are your opinions of one of ordinary
8 skill in the art different for these two patents,
9 any difference between your definition of one of
10 ordinary skill in the art for the '302 IPR and
11 your definition one of ordinary skill in the art
12 for the '781 IPR?
13 **A One minute, please.**
14 Q I'm sorry?
15 **A I said, One minute, please.**
16 Q Okay.
17 **A Yes, they're different.**
18 Q What's the difference?
19 **A So the '302 person of skill in the art is**
20 **as of the earliest priority date of the '302**
21 **patent. And the '781 person of ordinary skill in**
22 **the art is as of the earliest priority date of the**

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1 '781 patent.
2 Now, it so happens the '302 and the '781
3 were filed on the same day, October 25th, 2004.
4 So in practice these two are the same. But if
5 you're doing a strict textual comparison, they are
6 different.
7 Q Is that the only difference?
8 A So to answer that question, as you will
9 note in both definitions of one of ordinary skill
10 in the art, I finish it with the statement, "It is
11 my opinion that I qualify as a POSITA under either
12 Dr. Brogioli's proposed level of skill in the art
13 or my own."
14 So to give you a complete answer on that,
15 I would have to check whether Dr. Brogioli's
16 definition of one of ordinary skill in the art is
17 the same for the '302 and the '781.
18 Q And you have quoted Dr. Brogioli's
19 definition in the paragraph above your definition.
20 Correct?
21 A Which declaration are we referring to?
22 Q For both declarations you have quoted

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1 Dr. Brogioli's definition before stating your
2 opinion of one of ordinary skill in the art.
3 Correct?
4 A So it's not that I disagree with you. I
5 don't recall if that was the entirety of his
6 definition, I suppose is my point.
7 It certainly looks complete, but I don't
8 know for sure without referring to his -- his
9 declarations. And to the extent that these
10 paragraphs are a complete statement of his
11 opinion, then -- well, let me compare the two.
12 Q So based on your definition of one of
13 ordinary skill in the art --
14 A Excuse me. I haven't answered your
15 question yet, your previous one. I'm still
16 looking.
17 Q Oh, I'm sorry. Please continue.
18 A So Dr. Brogioli's view of one of skill in
19 the art for the '302 and '781 do differ. He
20 refers to the patents by name in two places.
21 There is also differences in the capitalization
22 and hyphenation of words. I'm not sure what that

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1 matters in terms of his meaning, but I don't want
2 to suggest that his two definitions are identical,
3 because they aren't.
4 And sorry, to be fair, it's unclear
5 whether I am -- whether the differences in
6 capitalization, hyphenation, is me misquoting him
7 or failing to copy and pasting correctly.
8 Q Are you looking at your declarations for
9 Dr. Brogioli's definitions or are you looking at
10 his declarations?
11 A I'm sorry, I lost you there. Can you say
12 that again?
13 Q So you were looking at Dr. Brogioli's
14 definition of one of ordinary skill in the art.
15 Correct?
16 A No. I was looking at -- you pointed me
17 to Paragraph 25 of my declaration as containing
18 Dr. Brogioli's statement of one of ordinary skill
19 in the art.
20 So what I am saying is, when I compare
21 Paragraph 25 of the '302 to Paragraph 25 of the
22 '781 declarations, I see some differences. They

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1 reference different patents, they have different
2 capitalization, and they have different
3 hyphenation.
4 I was making the point that I don't know
5 if those differences exist in Dr. Brogioli's
6 actual declaration or that they are a result of me
7 failing to copy what he had in his declaration
8 properly.
9 Q Would a person of ordinary skill in the
10 art as defined in your declaration -- in your
11 declarations, in analyzing the patents and
12 documents you have considered give any thought to
13 Intel's multiprocessor systems prior to 2004?
14 MR. AUCHTER: Objection to form.
15 A So I'm not sure how you expect me to know
16 what someone would have thought. I don't think
17 that's a reasonable thing to ask me.
18 You can certainly ask me what they would
19 have known, but not what they would have thought.
20 So I think someone reading the documents
21 that I reference in my declaration would certainly
22 read about an Intel multiprocessor system, but

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1 **that doesn't mean that they've thought about it or**
2 **considered it prior to 2004.**
3 Q Does the '302 and '781 patents describe
4 Intel's processors?
5 MR. AUCHTER: Objection. Form.
6 Compound.
7 **A Yes, that's a compound question. Can you**
8 **break it apart, please?**
9 Q Does the '302 patent describe Intel
10 processors?
11 MR. AUCHTER: Objection. Form.
12 Ambiguous.
13 **A So what do you mean by "Intel**
14 **processors"?**
15 Q You don't understand what is Intel
16 processor?
17 MR. AUCHTER: Objection. Form.
18 Argumentative.
19 **A So I have my understanding of what the**
20 **term "Intel processor" means. And so if you don't**
21 **wish to clarify it, then we will go with my**
22 **understanding of it.**

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1 **And so the answer to your question is,**
2 **no, I don't think the '302 does describe an Intel**
3 **processor.**
4 Q What's your understanding of an Intel
5 processor?
6 **A A processor made by Intel.**
7 Q Do you think the '302 patent describes an
8 Intel processor, based on your understanding?
9 MR. AUCHTER: Objection. Form.
10 **A Can I have the question again?**
11 Q Do you think the '302 patent describes
12 the Intel processor, based on your understanding
13 of what an Intel processor is?
14 **A Oh, it seems to be describing an HP**
15 **processor.**
16 Q Where does it describe an HP processor?
17 **A So I'll note that the applicant was**
18 **Hewlett Packard, or HP.**
19 **Do I take it that the patent that you've**
20 **uploaded into the exhibit list is not searchable?**
21 **I'm certainly unable to search within it, so I'm**
22 **going to have to manually go through it to find**

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1 **references to Hewlett Packard.**
2 **So I'll note first that the assignee of**
3 **the patent was Hewlett Packard Development**
4 **Company.**
5 **I forget. We are talking about the '302**
6 **right now. Correct?**
7 **A Correct.**
8 Q Okay.
9 **A If I direct you to Column 8, Line 16. It**
10 **says, "In certain embodiments, processes 12A, 12B,**
11 **15A and 15B are processors from the Itanium**
12 Processor Family (IPF). IPF is a 64-bit processor
13 architecture co-developed by Hewlett Packard and
14 Company and Intel Corporation, which is based on
15 Explicitly Parallel Instruction Computing (EPIC).
16 IPF is a well-known family of processors. IPF
17 includes processors such as those having the code
18 names of MERCED, MCKINLEY, and MADISON."
19 So there is an example showing that that
20 is a Hewlett Packard system that's being described
21 here. Would you like me to continue?
22 Q So based on what you just looked at, do

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1 you think the -- do you stand by your answer that
2 the patent does not describe any Intel processor?
3 **A Right. It's describing an HP processor.**
4 Q And does your answer change for the '781
5 patent?
6 **A So I'll note again that the assignee is**
7 **Hewlett Packard Development Company.**
8 **So for the '781, in Column 7, Line 53, it**
9 **states, "In certain embodiments, processors 12A,**
10 **12B, 15A, and 15B are processors from the Itanium**
11 Processor Family (IPF). IPF is a 64-bit processor
12 architecture co-developed by Hewlett Packard and
13 company and Intel Corporation, which is based on
14 Explicitly Parallel Instruction Computing (EPIC).
15 IPF is a well-known family of processors. IPF
16 includes processors such as those having the code
17 names of MERCED, MCKINLEY, and MADISON."
18 So, yes, it appears the '781 is also
19 describing Hewlett Packard processors.
20 Q So based on what you just read, the IPF
21 is a 64-bit processor architecture co-developed by
22 Hewlett Packard Company and Intel Corporation.

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1 In your view, this discloses an HP
2 processor, not an Intel processor. Correct?
3 **A Well, so I asked for clarification from**
4 **you what you meant by an Intel processor. You**
5 **declined to give me your definition, and you**
6 **encouraged me to use my own.**
7 **My definition for an Intel processor is a**
8 **processor made by Intel. This appears to be a**
9 **processor made by Hewlett Packard.**
10 Q Does the patent, the '302 patent and the
11 '781 patent, disclose a boot processor?
12 MR. AUCHTER: Objection. Form.
13 Compound.
14 **A Yes, that is a compound question. Can**
15 **you break up the question, please?**
16 MS. ZHANG: Respectfully, Mr. Auchter,
17 the PTAB prefers one-word objections. If the
18 witness doesn't understand the question, the
19 witness can ask for clarification.
20 MR. AUCHTER: Respectfully, I am
21 permitted to explain the basis for the objection
22 in a single word. I believe the word "compound"

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1 is a single word.
2 If you want to keep asking questions
3 about two patents, then keep going and I'm going
4 to keep objecting because it's a compound question
5 because you're asking about two things.
6 Q Do you understand the question,
7 Mr. Jones?
8 **A I understand you asked me a compound**
9 **question. So if you'd like to narrow it to one**
10 **patent I will endeavor to ask it -- excuse me,**
11 **answer it.**
12 Q If there is any word that you don't
13 understand, I can explain. And I can ask you
14 separately about these patents.
15 Does the '302 patent describe a boot
16 processor?
17 **A The '302 patent is titled System and**
18 **Method for Switching the Role of Boot Processor to**
19 **a Spare Processor Responsive to Detection of Loss**
20 **of Lockstep in a Boot Processor.**
21 **So in the abstract I see the following.**
22 **"According to one embodiment, a method comprises**

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1 detecting loss of lockstep (LOL) for a processor
2 in a multiprocessor system. The method further
3 comprises determining that the processor for which
4 the LOL is detected is assigned the role of boot
5 processor, and switching the role of boot
6 processor to a spare processor without shutting
7 down the system's operating system," and it goes
8 on.
9 So I would say the '302 patent does
10 disclose a boot processor.
11 Q Does the '781 patent disclose a boot
12 processor?
13 **A So the title of the '781 patent is System**
14 **and Method for Establishing a Spare Processor for**
15 **Recovering from Loss of Lockstep in a Boot**
16 **Processor.**
17 **The abstract reads, "A system comprises a**
18 **plurality of processors, and data storage storing**
19 **information that assigns a role of boot processor**
20 **to one of the plurality of processors and assigns**
21 **a role of spare processor to another of the**
22 **plurality of processors. The system further**

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1 **comprises logic operable, responsive to detecting**
2 **loss of lockstep for the boot processor, for**
3 **transferring, during system runtime, the role of**
4 **boot processor to the spare processor."**
5 **So I would say that the '781 patent**
6 **discloses a boot processor.**
7 Q What is your understanding of a boot
8 processor?
9 **A So is this with respect to the '302 or**
10 **the '781?**
11 Q You can answer with respect to the '302
12 first.
13 **A Okay. So I would like to direct you to**
14 **my '302 declaration, Paragraph 33.**
15 **And in Paragraph 33 I cite to Column 12,**
16 **Lines 1 through 21, of the '302 patent.**
17 Q Does this -- sorry, did you finish your
18 answer?
19 **A I did, yes.**
20 Q Does this patent -- does this passage
21 quoted in your declaration describe the role of
22 the boot processor?

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1 **A So at the bottom of the '302 patent,**
2 **Column 11, starting at Line 61, it describes the**
3 **boot-up process as, "The boot-up process of a**
4 **traditional IPX system, for example, proceeds as**
5 **follows: When the system is first powered on**
6 there are some sanity checks (e.g., power on
7 self-test) that are performed by microprocessors,
8 including the platform, which are not the main
9 system processors that run applications. After
10 those checks have passed, power and clocks are
11 given to a boot processor (which may, for example,
12 be master processor 12A."
13 And then we start with the section that I
14 quote here which goes all the way through Line 21.
15 So I would say my understanding of boot processor
16 is what I have cited here in my declaration,
17 together with the paragraph I just read into the
18 record, which was Column 11, Line 61 through
19 Column 12, Line 1.
20 Q In forming your understanding of what is
21 a boot processor, did you consider anything else
22 besides these passages?

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1 **A So I considered the entirety of the**
2 **specification. I considered the prosecution**
3 **history of the patents. I put myself in the**
4 **position of one of ordinary skill in the art as of**
5 **the time of the invention. And so those were some**
6 **of the things that I did in coming to my**
7 **conclusions about boot processor.**
8 THE WITNESS: At that point we're about
9 another hour in. Is now a good time for a break?
10 MS. ZHANG: Yeah. I just have a couple
11 more questions, and then maybe you can have a
12 longer break for lunch.
13 THE WITNESS: Okay. That's -- are you on
14 the East Coast?
15 MS. ZHANG: Yes.
16 THE WITNESS: Okay. Good. I didn't want
17 to send you to lunch if you were, you know, 9
18 o'clock in California or something. So, yeah,
19 shall we go to, say, 12:30 then? Does that work
20 for you?
21 MS. ZHANG: Let me finish a couple of
22 questions, and then we can go on break.

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1 THE WITNESS: Okay.
2 Q So in forming your understanding of what
3 a boot processor is, did you consider anything
4 else besides the specification, the prosecution
5 history?
6 MR. AUCHTER: Objection. Form. Asked
7 and answered.
8 **A Yeah, I don't understand the difference**
9 **between this question and the previous question.**
10 Q In forming your understanding of what a
11 boot processor is, did you consider any other
12 documents besides the specification and
13 prosecution history?
14 MR. AUCHTER: Objection. Form. Asked
15 and answered.
16 **A Yeah, I'm struggling to understand the**
17 **difference between this question and the first**
18 **time you asked the question. If you would like to**
19 **clarify the difference between the two questions,**
20 **I'll try and answer it.**
21 Q Is it fair to say that you did not
22 consider any other documents in forming your

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1 opinion about what is a boot processor, other than
2 the specification and the prosecution history?
3 **A So in considering the specification for**
4 **the '302 patent, I note that the '302 patent, in**
5 **Column 1, and Lines 11 through 51 and elsewhere,**
6 **does incorporate by reference other applications**
7 **that were filed contemporaneously with the '302**
8 **application. And so I just want to clarify that I**
9 **did consider those documents as well.**
10 Q Understood. Does your answer change for
11 the '781 patent except I understand the quoted
12 passages probably change citation column and line
13 numbers?
14 **A So I think my answer is similar. I**
15 **considered the specification -- well, the entirety**
16 **of the '781 patent, its prosecution history, and**
17 **then, as you quite rightly pointed out, the '781**
18 **does include by reference in Column 1, Lines 9**
19 **through 48, and I think elsewhere as well,**
20 **contemporaneously filed applications which I**
21 **considered. And I considered all of that in light**
22 **of one of ordinary skill in the art at the time of**

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1 the invention.
2 I just realized -- can I just clarify
3 that we switched from the '302 to the '781 when
4 you asked me what I relied upon for forming my
5 opinion about a boot processor, without actually
6 addressing what my opinion is for a boot processor
7 for the '781.
8 So I just want to point out that we have
9 that logical inconsistency right now, and that I
10 told you what I relied upon for the '781 without
11 actually telling you what my opinion is for the
12 boot processor for the '781.
13 Q Does your opinion change regarding what
14 is a boot processor for the '781 patent?
15 A So for the '781, I direct you to my '781
16 declaration, Paragraph 33. So in a similar vein
17 as the '302, I suppose my opinion really starts at
18 Column 11, Line 60, which reads, "The boot-up
19 process of a traditional IPF system, for example,
20 proceeds as follows: When the system is first
21 powered on, there are some sanity checks (e.g.,
22 power on self-test) that are performed by

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1 microprocessors included in the system platform,
2 which are not the main system processors that run
3 applications. After those checks have passed,
4 power and clocks are given to a boot processor
5 (which may, for example, be master processor
6 12A)." And then it continues, "The boot processor
7 begins executing," which is the excerpt I have
8 cited here in my declaration in Paragraph 33.
9 Q And in this Paragraph 33 before this
10 quoted passage from the patent, the '781 patent,
11 you said, For example, in the '781 patent the boot
12 processor roles a master processor 12A are
13 described as follows.
14 Based on your understanding, does the
15 boot processor perform any other functions other
16 than what's described in this passage?
17 A So I will start by saying, so we're
18 referring to the '781 here. And this passage and
19 the preceding passage that I read is just one
20 embodiment that is being described. And this
21 section here describes some of the
22 responsibilities of a boot processor. And as I

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1 have said in the beginning of Paragraph 33, that
2 initializing the multiprocessor system and booting
3 the operating system can be part of the role of
4 the boot processor.
5 Q Does the boot processor perform any other
6 responsibilities?
7 A So I'm not precluding that. I think it,
8 as a minimum, must initialize the system and load
9 the operating system. But, as I mentioned in my
10 previous answer, this is an exemplary discussion.
11 The acronyms that appear in here, PAL, SAL, EFI,
12 are acronyms that are pretty much specific to the
13 IPF architecture.
14 And so I can certainly envisage non-IPF
15 systems that would not necessarily have a PAL or
16 SAL or EFI, but the boot processor would still
17 perform system initialization, including loading
18 the operating system.
19 Q Can you give an example of a non-IPF
20 system where a boot processor performs system
21 initialization?
22 A Yeah, I can. Pretty much all modern

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1 cellphones use the ARM big.LITTLE architecture.
2 And in the big.LITTLE architecture they have
3 multiple processors. And one of those processors
4 is designated for initializing the system and
5 loading the operating system.
6 Q Can you give an example of a non-IPF
7 system that exists prior to 2004?
8 A I'm sorry, could I have that question
9 again?
10 Q Yes. Can you give an example of a
11 non-IPF system where the boot processor performs
12 system initialization, but -- sorry, let me
13 repeat.
14 Can you give an example of a non-IPF
15 system prior to 2004 where the boot processor
16 performs system initialization?
17 A So in 2001, and I know it was 2001
18 because I was working on this, so I'm quite clear
19 on the year.
20 I was working for Hughes Network Systems,
21 and we were designing a point-to-point multi-point
22 microwave link. That system had dozens of

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1 **processors, and they were built using a boot**
2 **processor.**
3 Q And for that system, what roles did the
4 boot processor perform in addition to initializing
5 the system?
6 **A It loaded the operating system.**
7 Q Anything else?
8 **A It's been 24 years, so I -- I recall**
9 **that, you know, we had dozens of processors in the**
10 **system, and we had a very specific boot process**
11 **with a boot processor which loaded the operating**
12 **system. That's all I can recall from that, I'm**
13 **afraid.**
14 Q Are you aware of any other system prior
15 to 2004 that has a boot processor that performs
16 system initialization?
17 **A I don't recall anything I worked on that**
18 **had that architecture. That doesn't mean it**
19 **didn't exist, of course.**
20 Q Would a person of ordinary skill in the
21 art under your definition aware of any other
22 system prior to 2004 that had a boot processor

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1 that performs system initialization?
2 MR. AUCHTER: Objection. Form.
3 **A Yeah, I'm not sure how you expect me to**
4 **know what any particular person would know.**
5 **My definition of one of ordinary skill in**
6 **the art, I direct you to Paragraph 26 and also**
7 **Paragraph 25. I don't think one of ordinary -- I**
8 **don't opine that one of ordinary skill in the art**
9 **would know about boot processors. And more to**
10 **the -- but not more to the point, but neither does**
11 **Dr. Brogioli either.**
12 **So can I just ask, by the way, am I**
13 **pronouncing Dr. Brogioli's name correctly? Is it**
14 **Brogioli or is it something different?**
15 MR. AUCHTER: Yes, you are pronouncing
16 his name correctly.
17 THE WITNESS: Okay. It is now well past
18 an hour, and so I'd like to take a lunch break,
19 please.
20 MS. ZHANG: One minute. I just want to
21 see your answer right now.
22 Q So just want to clarify I understand your

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1 answer. And correct me if I'm wrong.
2 In your opinion, one of ordinary skill in
3 the art under your definition would not know about
4 boot processors. Is that your answer?
5 MR. AUCHTER: Objection. Form.
6 Mischaracterizes prior testimony.
7 **A No. My answer was the person of ordinary**
8 **skill in the art, their requirements to meet one**
9 **of ordinary skill in the art, in my opinion, are**
10 **laid out in Paragraph 26. And in there I don't**
11 **say anything about whether they knew about boot**
12 **processors or not. Similarly, nor did**
13 **Dr. Brogioli in his definition of one of ordinary**
14 **skill in the art.**
15 MS. ZHANG: Okay. We can take a lunch
16 break.
17 (A recess was taken.)
18 BY MS. ZHANG:
19 Q Mr. Jones, before our break you said you
20 don't say anything about whether a person of
21 ordinary skill in the art knew about boot
22 processors or not.

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1 Is that correct?
2 **A Well, it's been 30-something minutes**
3 **since I gave you my answer. I think my answer was**
4 **something to the effect that neither Dr. Brogioli**
5 **nor myself opined whether a person of ordinary**
6 **skill in the art would know about boot processors.**
7 Q My question is about your declaration.
8 In your declaration, the '302 declaration, for
9 example, is it fair to say that you did not opine
10 on whether a POSITA would have understood a boot
11 processor?
12 **A So I think you've changed your question**
13 **slightly.**
14 **So in my declaration, since you're**
15 **limiting the question to my declaration, I cited**
16 **both Dr. Brogioli and my definitions of what we**
17 **believe a person of ordinary skill in the art for**
18 **the '302 patent would be, or would have.**
19 **Neither of our definitions considered a**
20 **boot processor. So I'm not saying that a POSITA**
21 **would know about a boot processor or wouldn't; it**
22 **just doesn't appear in the definition of either me**

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1 **or Dr. Brogioli.**
2 **So -- so that's purely definitional. So**
3 **I believe you've now changed your question to**
4 **would a person of ordinary skill in the art, what**
5 **did you say, know about a boot processor?**
6 **Is that what you asked?**
7 Q In your opinion, would a person of
8 ordinary skill in the art understand what a boot
9 processor is?
10 **A So the trouble about your question is**
11 **that it's incredibly broad. And so a boot**
12 **processor in what context?**
13 **A person of ordinary skill in the art**
14 **wouldn't have to know what a boot processor is,**
15 **because the specification for the '302 lays out**
16 **what a boot processor is. And so whether there's**
17 **a person of ordinary skill in the art that has a**
18 **different definition, a narrower or broader, I**
19 **obviously cannot comment. But the '302**
20 **specification, as I cite here in my declaration at**
21 **Paragraph 33, does give a description on what a**
22 **boot processor is.**

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1 Q So if I understand you correctly, you're
2 saying a person of ordinary skill in the art
3 wouldn't have to know what a boot processor is
4 before -- because the '302 patent provides a
5 description of a boot processor.
6 Is that right?
7 MR. AUCHTER: Objection. Form.
8 **A So I'm not really opining whether the one**
9 **of ordinary skill in the art knew or didn't know**
10 **what a boot processor is. They may have used the**
11 **term "boot processor" in a different context or in**
12 **a different architecture or whatever.**
13 **My point being is is that the '302, as**
14 **laid out in Paragraph 33 of my declaration, spells**
15 **out what a boot processor is. And so one of**
16 **ordinary skill in the art, reading the**
17 **specification of the '302, would have a clear**
18 **understanding of what a boot processor is.**
19 Q You mentioned a person of ordinary skill
20 in the art may have used the term "boot processor"
21 in a different context or in a different
22 architecture. Can you give an example of such

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1 different context or different architecture?
2 **A No. I'm just saying that there -- the**
3 **pantheon of one of ordinary skill in the art is**
4 **large, and so those people may have had different**
5 **experience and different knowledge to that date of**
6 **what a boot processor is.**
7 **But when they come to the specification**
8 **for the '302, that doesn't matter, because the**
9 **'302 makes it clear what it means by a boot**
10 **processor.**
11 Q Why is it doesn't matter of what a person
12 of ordinary skill in the art would have known what
13 a boot processor is?
14 **A Well, my point being is is that they may**
15 **have used the term "boot processor" in a different**
16 **context to that envisaged in the '302.**
17 **And so it wouldn't matter if their**
18 **experience of a boot processor was slightly**
19 **different or fundamentally different. When they**
20 **came to the '302 and they read the specification**
21 **in '302, they would be able to go, Oh, I**
22 **understand what they mean by boot processor in**

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1 **this context.**
2 Q Can you give an example of that different
3 context a POSITA would have?
4 **A No. I mean, there are a pantheon of**
5 **different system architectures and things. So all**
6 **of the different architectures that people have**
7 **experienced in their career up to the point they**
8 **read the '302 may or may not be the same as for**
9 **the '302. And that's just the point I'm making.**
10 **It doesn't matter, because the '302 is**
11 **very clear, as I lay out in Paragraph 33 of my**
12 **'302 declaration, what a boot processor is.**
13 Q So you're saying a POSITA would have
14 understood there are different systems for
15 different architectures that use a boot processor.
16 Correct?
17 MR. AUCHTER: Objection. Form.
18 Mischaracterizes prior testimony.
19 **A Yeah, I have to agree with Mr. Auchter**
20 **here again. You just mischaracterized me now, and**
21 **this is the third time you've done it. And that**
22 **is not what I said. So if you'd like to go back**

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1 **and reread my previous answer, you will see what I**
2 **said.**
3 **I realize that your characterization is**
4 **incorrect.**
5 MS. ZHANG: Counsel, respectfully, I
6 think we talked about this. PTAB prefers one-word
7 objections. And if you keep doing this, as the
8 witness said, he has to agree with you, and we
9 will have to have a conversation with the Board.
10 MR. AUCHTER: You know, if you want to
11 keep asking the same question over and over again
12 and harassing the witness, I'm perfectly willing
13 to go to the Board and see if we can terminate the
14 deposition based on a continued harassment of the
15 witness with repeated question.
16 If you are objection to the fact that I
17 am simply stating, in short terms of three words
18 or less, what my objection is and the basis for
19 the objection, as opposed to a speaking objection,
20 then look at the record, and it is quite clear
21 what's going on there.
22 MS. ZHANG: We may need to do that if

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1 this continues.
2 Q But, Mr. Jones, I'm asking you a question
3 regarding your testimony earlier that you said
4 POSITA would have understood there are different
5 systems or architectures that would have used a
6 boot processor.
7 Do you disagree with that?
8 **A That sounds basically what I said.**
9 Q My question is, can you give an example
10 of the different systems or different
11 architectures?
12 MR. AUCHTER: Objection. Form.
13 **A So there are thousands of different**
14 **multiprocessor architectures, each subtly**
15 **different, designed according to the particular**
16 **requirements of the system.**
17 **And so the fact that these exist, in my**
18 **view is irrelevant. The '302 patent, Column 12,**
19 **Lines 1 through 21, spells out what a boot**
20 **processor is. The fact that there may be other**
21 **forms of boot processors somewhere I don't think**
22 **matters. This is what the definition that is**

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1 **being used in the '302.**
2 (IPR2024-01346 and IPR2024-01347 Exhibit
3 1005, previously marked, not attached.)
4 Q I've handed you another document. This
5 is Exhibit 1005 in the '302 IPR, also Exhibit 1005
6 in the '781 IPR.
7 **A Okay, I have it up.**
8 Q Do you recognize this document?
9 **A Yes.**
10 Q Is it okay if we refer to this document
11 as the Fox reference?
12 **A That's fine.**
13 Q Have you reviewed it before?
14 **A Yes.**
15 Q Have you reviewed it in its entirety?
16 **A Yes.**
17 Q And do you understand what this document
18 discloses?
19 **A Yes.**
20 Q Fox -- excuse me. Fox discloses a
21 multiprocessor system. Correct?
22 **A So looking at the abstract it says, "A**

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1 **method and system for dynamically replacing a**
2 **failing processor in a server system configured**
3 **with IA-32 architecture without requiring hardware**
4 **changes to the IA-32 architecture or**
5 **administrative effort. At least one processor of**
6 the multiprocessor system (MP) is initially
7 provided as a reserve or (hot-spare processor)
8 that remains in an idle, off, low-power mode."
9 So on that basis I would agree that Fox
10 discloses a multiprocessor system of some type.
11 Q And Fox's multiprocessor system is
12 configured with IA-32 architecture. Correct?
13 **A So the reason for the delay is the**
14 **phrase, as I just read into the record, "a method**
15 **and system for dynamically replacing a failing**
16 **processor in a server system configured with IA-32**
17 **architecture."**
18 **That's a very strange expression,**
19 **"configured with IA-32 architecture." And I was**
20 **looking in the specification to see if there was**
21 **anywhere else where it gave a better explanation**
22 **for what it meant by configured with the**

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1 **architecture.**
2 **But that term, "configured with IA-32**
3 **architecture," does appear in the abstract, but I**
4 **can't find it elsewhere in the specification.**
5 Q If I may direct you to Paragraph 14 of
6 Fox.
7 **A You are quite right. I missed that on my**
8 **very quick read through it. It does say the same**
9 **thing again there.**
10 Q And if I may direct you to Paragraph 23
11 of Fox.
12 **A Yeah, I saw 23. Twenty-three doesn't**
13 **say, configure with IA-32 architecture. It says,**
14 **"an IA-32 configured multiprocessor computer**
15 **system," which makes much more sense to me.**
16 Q So you agree Fox discloses the IA-32
17 configured multiprocessor system?
18 **A Yes.**
19 Q And Fox discloses the system is provided
20 with BIOS of the IA-32 architecture. Correct?
21 **A So I've just done a search on BIOS.**
22 **There are 42 instances of the word "BIOS." I'm**

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1 **sure you have somewhere in this application that**
2 **you're thinking of. Would you like to direct me**
3 **to where you're thinking of?**
4 Q Sure. If you could look at Paragraph 15
5 of Fox. The first sentence says, "Implementation
6 of the invention involves the utilization of
7 Systems Management Interrupt (SMI) functionality
8 provided within basic input output system (BIOS)
9 of the IA-32 architecture."
10 Do you see it?
11 **A I see that, yes.**
12 Q So Fox discloses a system is provided
13 with BIOS of the IA-32 architecture. Correct?
14 **A I'm sorry, could I have that question**
15 **again slowly?**
16 Q Sure. Fox discloses the system is
17 provided with BIOS of IA-32 architecture.
18 Correct?
19 **A So I'm not sure that an architecture has**
20 **a BIOS. My interpretation of that sentence is**
21 **that it's the System's Management Interrupt of the**
22 **IA-32 architecture. So the SMI is a feature of**

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1 **the IA-32, whereas I'm not sure that BIOS is a**
2 **feature of the IA-32.**
3 **Does that distinction make sense?**
4 Q Could you go to Paragraph 40 of Fox?
5 **A Paragraph 40? Okay.**
6 Q First sentence says, "Implementation of
7 the invention involves the utilization of Systems
8 Management Interrupt functionality provided within
9 basic input output systems (BIOS) of the IA-32
10 systems."
11 **A Correct.**
12 Q Do you see that?
13 **A So now we switched from IA-32**
14 **architecture to system. So the system makes much**
15 **more sense to me. There is a difference between**
16 **the architecture and the system.**
17 Q Okay. So you agree that Fox's system is
18 provided with BIOS of the IA-32 systems?
19 **A That's not what that says.**
20 **I agree that Fox is provided with -- Fox**
21 **discloses the use of a BIOS.**
22 Q And do you agree that Fox's system is an

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1 IA-32 system?
2 **A Yes.**
3 Q And do you agree that Fox's system has
4 multiple processors?
5 **A Yes. So, for example, if I direct you to**
6 **Figure 1 in Fox, Figure 1 discloses multiple**
7 **processors.**
8 Q And do you agree that Fox discloses those
9 processors are IA-32 processors?
10 **A Yes, I agree that Fox is limited to IA-32**
11 **processors.**
12 Q In your view, Fox does not disclose a
13 boot processor. Correct?
14 **A So which patent are we talking about**
15 **here?**
16 Q We're still talking about the Fox
17 reference.
18 **A Well, I understand that, but I can't**
19 **answer your question. To answer your question I**
20 **need to know in which context, '302 or '781.**
21 Q Could you please answer in a context of
22 '302 patent first. And if your answer is

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1 different for the '781 patent, please continue and
2 clarify the difference.
3 **A So for the '302 in Paragraph 28 I state,**
4 **"As Dr. Brogioli concedes, Fox does not explicitly**
5 **disclose a boot processor."**
6 **So, and then for the '781, so in my '781**
7 **declaration, Paragraph 28, I state, "As**
8 **Dr. Brogioli concedes, Fox does not explicitly**
9 **disclose a boot processor."**
10 Q Do you agree with those statements?
11 **A Yes. I wrote them.**
12 Q Would a person of ordinary skill in the
13 art under your definition understood Fox's system
14 would have a boot processor?
15 **A I think they would be completely agnostic**
16 **to it.**
17 **So I checked. The word "processor"**
18 **appears over 350 times in Fox. Not once is it**
19 **qualified with the word "boot." In fact, booting**
20 **isn't even really mentioned in Fox. And so I**
21 **think someone reading Fox would conclude that how**
22 **the system is booted is irrelevant to what Fox is**

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1 **claiming is his invention.**
2 Q So is it fair to say in your view a
3 POSITA would not have understood Fox disclosing a
4 boot processor because Fox does not use the term
5 "boot processor" in the specification?
6 **A So it's my view that someone reading Fox,**
7 **a POSITA reading Fox, would read Fox and**
8 **understand that Mr. Fox -- I think it's a mister.**
9 **Yes, Thomas James Fox -- is disclosing a method**
10 **and system for dynamically replacing a failing**
11 **processor in a server system configured with IA-32**
12 **architecture without requiring hardware changes to**
13 **the IA-32 architecture or administrative effort.**
14 **He would also understand, as the abstract**
15 **goes on, that at least one processor of the**
16 **multiprocessor system is initially provided as a**
17 reserve (or hot-spare), et cetera.
18 And so I think the POSITA would read
19 the -- this patent application and say this has
20 got everything to do with a failing processor
21 server system configured with IA-32 architecture.
22 How the system is booted, what happens with boot

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1 is just not disclosed. It's not part of the
2 invention. It's not relevant to the invention.
3 So I don't think a POSITA would look at
4 this and say anything about booting.
5 Q Earlier you testified you agreed that Fox
6 system is an IA-32 system. Correct?
7 **A Yes.**
8 Q And you agreed that Fox system has
9 multiple processors?
10 **A Yes.**
11 Q And you agreed those processors are IA-32
12 processors?
13 **A Yes.**
14 Q If a POSA -- sorry, a person of ordinary
15 skill in the art, with the understanding that Fox
16 discloses an IA-32 system, including multiple
17 processors, would have understood the Fox system
18 would have a boot processor. Correct?
19 **A No. Fox is completely agnostic as to how**
20 **this system boots. Fox is all about what do you**
21 **do when a processor fails. That's what Fox is**
22 **about. He has said nothing about how the system**

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1 **comes up. It's just up in Fox's view of the**
2 **world, because it's not important to him.**
3 Q Would a person of ordinary skill in the
4 art under your definition understand an IA-32
5 multiple processor system would include a boot
6 processor?
7 MR. AUCHTER: Objection. Form.
8 **A So I think one of ordinary skill in the**
9 **art with an IA-32 multiprocessor system would**
10 **recognize that there would be multiple ways of**
11 **booting that system. And so looking at Fox, it**
12 **doesn't really matter how Fox came up. That's not**
13 **what Fox is about. Fox is about what do you do**
14 **when a processor starts to encounter a hard**
15 **failure.**
16 **And so I think a POSITA, reading Fox,**
17 **would not even look to Fox for anything regarding**
18 **booting. That's not what Fox is about. It's what**
19 **do you do when you're running and one of the**
20 **processors that you're relying upon has a hard**
21 **failure.**
22 Q So Fox doesn't disclose how a system is

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1 booted.
2 Is that right?
3 **A That's correct. I see nothing in Fox**
4 **that discloses how a system is booted.**
5 Q And you -- I hear you said it, and please
6 correct me if I am wrong, you said, I think one of
7 ordinary skill in the art with an IA-32
8 multiprocessor system would recognize that there
9 would be multiple ways of booting that system.
10 Is that right?
11 **A Well, I don't have an eidetic memory.**
12 **That sounds about what I said. I'm not sure if**
13 **you've quoted me completely correctly. By my**
14 **basic point is is that with Fox, how you get up**
15 **and running is irrelevant.**
16 Q What are the ways of booting an IA-32
17 system that a POSITA would have known?
18 **A Well, for example, every processor could**
19 **boot itself. You could have multiple processors.**
20 **You could do it entirely in hardware. You know,**
21 **there are any number of different architectures**
22 **for bringing a system up.**

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1 Q What are ways of booting an IA-32
2 multiprocessor system?
3 MR. AUCHTER: Objection. Form.
4 **A Well, I've just given you some examples.**
5 Q Can you give other examples?
6 **A Well, so I believe what I said to you is**
7 **it could be done purely in hardware or it could be**
8 **done using multiple processors, including one**
9 **processor -- including each processor booting**
10 **itself.**
11 **So I think that's a pretty significant**
12 **array of choices for how the system in Fox could**
13 **be booted.**
14 Q Are you aware of any other ways for
15 booting an IA-32 multiprocessor system?
16 **A Well, if you'd like me to sit here and**
17 **think about it for a while, I'm sure I could dream**
18 **up some other alternatives. So is that something**
19 **you'd like me to do?**
20 Q Yeah, if you could give us some
21 alternatives from the perspective of one person
22 of -- a person of ordinary skill in the art, that

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1 would be helpful.
2 MR. AUCHTER: Objection. Form.
3 **A Okay. Here's a few other possibilities**
4 **for you.**
5 **The system could be booted with a**
6 **non-IA-32 processor whose sole job is to boot the**
7 **system and then die, essentially. That's one**
8 **alternative.**
9 **Another alternative is the system could**
10 **boot over a network and rely upon a network**
11 **connection in order to bring the system up.**
12 **As I mentioned in my previous answer, you**
13 **could do it entirely using hardware, so there's no**
14 **processors involved at all, it's purely dedicated**
15 **logic.**
16 **Another alternative is you could boot the**
17 **processors in pairs, where one of the pair of a**
18 **processors boots the other one. You could boot**
19 **them in triplets, where one processor boots the**
20 **other three. You could boot them as duals, where**
21 **two processors, in turn, boot the third processor,**
22 **and all permutations thereof.**

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1 **So all of those are theoretical**
2 **possibilities for how the system in Fox was**
3 **booted. Fox just doesn't tell us how it was**
4 **booted.**
5 Q You just give an example where you said
6 you could boot them in triplets, where one
7 processor boots the other three.
8 **A If I said "the other three," then that's**
9 **not what I meant to say, but okay.**
10 Q That's okay. So do you mean that one
11 processor can boot the other two processors?
12 **A Right. So if we got a 64 processor**
13 **system, I believe -- I think it's Fox that talks**
14 **about having boat loads of processors, and they**
15 have (indiscernible) --
16 (Clarification by the court reporter.)
17 **A So certainly Figure 1 of Fox shows six**
18 **explicit processors and three ellipses,**
19 **pre-ellipses, indicating a system containing many**
20 **processors, perhaps 64.**
21 **And so the point I was making is one**
22 **possible architecture is to take three processors,**

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1 have one of those processors boot the other two,
2 and divide all 64 processors up into triplets, and
3 that's how the system boots.
4 Q So if the system just has three
5 processors, one processor would boot the other two
6 processors?
7 A Well, you know, Fox isn't disclosing
8 that. Fox is disclosing at least six, as I said.
9 So, you know, you're now getting into
10 hypotheticals on top of hypotheticals. My point
11 being is is there are many different ways of
12 booting a system. And to assume that Fox
13 discloses a boot processor I just don't think is
14 justified.
15 Q Yeah. Just in your example where you
16 describe the triplets and one processor boots the
17 other two processors, in that example, the one
18 processor that boots the other two processors,
19 would one -- would one of ordinary skill in the
20 art consider that processor as the boot processor?
21 A Well, hang on a second. You asked me for
22 alternatives to a boot processor. Okay? And I

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1 gave you a plethora of examples. And now you've
2 taken my example and reduced it back to your
3 original question.
4 Q So is it your opinion that in your
5 example that processor is not a boot processor?
6 A Let me see if I can explain this simply.
7 Your premise was that Fox disclosed a
8 boot processor. I said that is not true, Fox does
9 not disclose how the system could be booted.
10 You said, Well, can you come up with
11 other ways to boot it? And I said yes. And I
12 gave you a plethora of examples of how one could
13 boot a multiprocessor system.
14 One of the examples I gave you was to
15 divide up the multiprocessors into clusters and to
16 have one processor in that cluster boot the
17 cluster.
18 Now you've taken that cluster and reduced
19 it to the system. That means you've reduced it
20 all the way back to Fox, wherein you say, Hey, the
21 only way to boot Fox is with a single boot
22 processor. And my answer is no. I was describing

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1 a system where we have clusters of processors and
2 the clusters booting. Which is different than
3 booting the system, booting the clusters.
4 Q I understand that you're describing ways
5 to boot a system, a multiprocessor system. And
6 you're giving me an example, booting clusters.
7 And when booting a cluster, one processor would
8 boot the remaining processors in that cluster.
9 Is that a fair understanding?
10 A Right. So at this point you've had a
11 processor boot the cluster. Okay? This is
12 nothing about the system. You've got all these
13 other clusters that need to come up. And more
14 importantly, if we take this back to the '302 and
15 Paragraph 33 of my declaration, what a boot
16 processor is is spelled out there.
17 Q So your opinion, Fox does not disclose
18 the boot processor as described in Paragraph 33 of
19 your declaration.
20 Is that fair?
21 A I would say that Fox is agnostic. Fox
22 doesn't care how he came. He's just completely

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1 silent on it. So it's not a case that the system
2 didn't boot as described in Paragraph 33; Fox just
3 is completely silent. He's up and running. And
4 his invention is about what happens when I'm up
5 and running when a processor in a multiprocessor
6 system fails.
7 Q Fox does not describe booting at all?
8 MR. AUCHTER: Objection. Form.
9 A I -- my recollection is is the word
10 "boot" appears twice.
11 Q Can I direct you to -- can I direct you
12 to Paragraph 34 of Fox.
13 A Okay.
14 Q Paragraph 34 says, "When the MP is
15 initially activated for processing, one IA-32
16 processor is held off as a spare processor.
17 Holding off the processor involves having the
18 basic input output system (BIOS) recognize the
19 processor as a spare during BIOS boot (i.e., power
20 on self-test (POST), et cetera, of the MP, and
21 having the bio respond by not enabling the spare
22 processor to be initially allocated for OS and

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1 application processing."
2 Do you see that?
3 **A I do.**
4 Q What does "BIOS boot" mean?
5 MR. AUCHTER: Objection. Form.
6 **A Well, in this case they describe BIOS**
7 **boot as power on self-test.**
8 Q How does the power on self-test use the
9 BIOS?
10 MR. AUCHTER: Objection. Form.
11 **A So Fox doesn't tell us that. But all**
12 **this paragraph says is that during initialization,**
13 **one processor is held off as a spare. It doesn't**
14 **say anything about how the system is booted.**
15 Q Would a person of ordinary skill in the
16 art understand that Fox system boot would need the
17 BIOS?
18 **A Can I have that question again?**
19 Q Yes. Let me rephrase.
20 **A Thank you.**
21 Q Would a person of ordinary skill in the
22 art understand that Fox's system would use the

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1 BIOS to boot the system?
2 **A So the BIOS is just software. So I don't**
3 **see anything here that says the BIOS is used to**
4 **boot system.**
5 Q What is a BIOS? What is BIOS?
6 **A It's a acronym for basic input/output**
7 **system. It's typically well-known code on an X86**
8 **based system.**
9 Q What is the role of BIOS in booting a
10 multiprocessor system?
11 MR. AUCHTER: Objection. Form.
12 **A So you just made an assumption that I**
13 **don't know is valid.**
14 **In the context of Fox, the BIOS is the**
15 **basic input/output system. So Paragraph 34 is**
16 **just talking about how when the system is**
17 **initially activated for processing, one processor**
18 **is held off as a spare. That's what this is**
19 **talking about.**
20 Q Can you go to Paragraph 45 of Fox.
21 **A Okay, I'm there.**
22 Q Starting from the third sentence it says,

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1 "As provided at Block 301, the process begins with
2 the BIOS setting up and installing the main
3 processors P0 and P1, during the initial POST of
4 the MP."
5 Do you see that?
6 **A I do.**
7 Q How does the BIOS set up and install the
8 main processors?
9 MR. AUCHTER: Objection. Form.
10 **A I'm just looking at Figure 3.**
11 **What paragraph are we in, sorry?**
12 Q We're at Paragraph 45.
13 **A Okay. Sorry, I was just trying to get it**
14 **so I can look at Figure 3 at the same time as**
15 **Paragraph 45.**
16 **Okay. What's your question?**
17 Q How does the BIOS set up and install the
18 main processors?
19 MR. AUCHTER: Objection. Form.
20 **A So Fox doesn't tell us. But what is**
21 **obviously clear is whatever is executing the BIOS**
22 **is not one of the main processors.**

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1 Q So you said BIOS is software. Correct?
2 **A Yes.**
3 Q And would a person of ordinary skill in
4 the art understand that a processor would need to
5 execute the software to perform its functions?
6 MR. AUCHTER: Objection. Form.
7 **A I'm sorry, could I have that again? I**
8 **didn't quite understand what you said.**
9 Q Sure. Would a person of ordinary skill
10 in the art understand that the BIOS would need to
11 be executed by software to perform its functions?
12 **A I still don't hear -- the BIOS will need**
13 **to be what?**
14 Q Would a person of ordinary skill in the
15 art understand that a processor would execute the
16 BIOS to perform the functions?
17 **A I'm sorry, there's one word that you're**
18 **saying that I'm just not parsing. Can you put it**
19 **in the chat or something. Because I'm sorry, I am**
20 **just not computing what word you're using there.**
21 Q Yeah, I can speak more slowly if that
22 helps.

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1 Would a person of ordinary skill in the
2 art understand that a processor would execute the
3 BIOS to perform the functions?
4 A It's the word between "would" and "the
5 BIOS" that I'm not hearing.
6 Q Execute?
7 A Oh, execute?
8 Q E-X-E-C-U-T-E.
9 A Oh, execute.
10 Q Oh, execute. Thank you.
11 A Your English is fantastic, so there's
12 no -- okay. Now I understand the question. I
13 think you're asking me would one of ordinary skill
14 in the art understand that a processor is required
15 to execute software?
16 Q Correct.
17 A Is that the question?
18 Yes, of course they would understand
19 that.
20 Q Execute the BIOS.
21 A Oh, well, execute the BIOS? Yes, there
22 needs to be something that's executing the BIOS.

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1 But Fox doesn't tell us what that thing is. It
2 could certainly be split between multiple
3 processors. It could be being done over a -- over
4 a network. Who knows. He doesn't tell us.
5 Q Could it be a processor executing the
6 BIOS?
7 A That's one of multiple possibilities,
8 yes. But he doesn't tell us. He just says the
9 BIOS is executed.
10 THE WITNESS: So we've been going for a
11 little over an hour. Is now a good time for a
12 break?
13 MS. ZHANG: Yeah, we can take a break.
14 Would you like a five-minute break or ten minutes?
15 THE WITNESS: Just give me ten minutes so
16 I can get a bit of fresh air.
17 (A recess was taken.)
18 BY MS. ZHANG:
19 Q I just handed you an exhibit, Exhibit
20 Number 1008 in the '302 IPR. Also Exhibit 1008 in
21 the '781 IPR.
22 (IPR2024-01346 and IPR2024-01347 Exhibit

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1 1008, previously marked, not attached.)
2 Q Please let me know when you see it.
3 A Okay. It's up.
4 Q Do you recognize this document?
5 A Yes.
6 Q Is it okay if I refer to this document as
7 the IA-32 specification?
8 A No, I don't think so. That to me would
9 imply software. This is the IA-32 Software
10 Developer's Manual. So I think a better term for
11 it is IA-32 Software Developer's Manual.
12 Q Okay. Can we say IA-32 software -- okay.
13 We can say that. IA-32 Software Developer's
14 Manual.
15 Is that okay?
16 A Yeah. Thank you.
17 Q Have you reviewed it in its entirety?
18 A It's 798 pages long. I have not read it
19 in its entirety. I have certainly looked at the
20 sections that Mr. -- excuse me, Dr. Brogioli
21 referenced in his declaration.
22 Q And those portions that you have

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1 reviewed, do you understand what those portions
2 disclose?
3 MR. AUCHTER: Objection. Form.
4 A I had no difficulty understanding the
5 document. I'm not sure that it discloses
6 anything.
7 Q Now referring to the exhibit page number.
8 And now could you turn to exhibit Page Number 29
9 of this document.
10 A I'm there.
11 Q In the first paragraph on this page it
12 says, "This developer's manual is part of three
13 volume set that describes the architecture and
14 programming environment of all IA-32 Intel
15 architecture processors."
16 Correct?
17 A So I agree that you've just correctly
18 read into the record what this document says. But
19 I would like to draw your attention to what I have
20 to say about this document in my declaration
21 before we go any further. Sorry. I wanted to
22 define it.

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1 **Can I direct you, so this is the -- my**
2 **'781 declaration, Paragraph 31.**
3 **So therein I state, "Dr. Brogioli relies**
4 **on Exhibit 1008 for disclosures relating to the**
5 **initial selection of a boot processor or bootstrap**
6 **processor in Fox, but has not presented evidence**
7 **as to: Whether Exhibit 1008 was available to a**
8 **POSITA at the time of the invention of the '781**
9 **patent, why a POSITA would have understood Exhibit**
10 **1008 as a relevant description of the system**
11 **described in Fox, or why any of the implementation**
12 **details in Exhibit 1008 would have been known in**
13 **the art at the relevant time."**
14 Q Are you completed with your answer?
15 **A I'm sorry?**
16 Q Are you done with your answer?
17 **A Almost.**
18 Q Okay.
19 **A So I have similar or identical language**
20 **in my '302 declaration at Paragraph 31. So for**
21 **both the '302 and '781, it's my opinion that**
22 **there's no evidence that's been presented as to**

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1 **whether Exhibit 1008, which is what you're asking**
2 **me questions about, was available to a POSITA at**
3 **the time of the invention of the '302 patent or**
4 **why a POSITA would have understood Exhibit 1008 as**
5 **a relevant description of the system described in**
6 **Fox, or why any of the implementation details in**
7 **Exhibit 1008 would have been known in the art at**
8 **the relevant time.**
9 Q Okay. Were you aware of this document
10 before being retained for these IPRs?
11 MR. AUCHTER: Objection. Form.
12 **A I have no idea. I hadn't thought about**
13 **it.**
14 Q Earlier you had testified that you had
15 worked with Intel's processors. Correct?
16 **A Yes.**
17 Q Intel publishes software manuals for
18 these processors. Correct?
19 MR. AUCHTER: Objection. Form.
20 **A So I don't dispute that Intel publishes**
21 **technical documentation about its processors. I'm**
22 **just not convinced that this particular document**

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1 **that you presented to me meets the requirements I**
2 **spelled out in my declarations.**
3 Q So you have never seen this document
4 prior to being retained for these IPRs?
5 **A So we're talking 23 years, 24 years here.**
6 **I can't tell you whether I've seen something or**
7 **not in the last 24 years. That's just not**
8 **answerable.**
9 Q Do you recall any specification manual
10 published by Intel for its processors?
11 **A Yes.**
12 Q Can you give an example?
13 **A So the reason I can remember this is**
14 **because when I was fresh out of university I**
15 **recall that in university we worked exclusively on**
16 **Motorola microprocessors. And then the company I**
17 **went to work for used exclusively Intel**
18 **processors. And so pretty much on Day 1 on my new**
19 **job fresh out of college I was handed an Intel**
20 **manual for an Intel processor. So this would have**
21 **been 1983.**
22 Q And do you recall what type of that

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1 processor is?
2 **A What type, meaning model number?**
3 Q Yes.
4 **A Yes.**
5 Q What is the model number of that Intel
6 processor?
7 **A It was an 8052.**
8 Q And you recall seeing a manual for that
9 processor. Correct?
10 **A Yes.**
11 Q And before 2004, when someone asked to
12 work on an IA-32 processor, like you had when you
13 just graduated from college, would someone working
14 on an IA-32 processor look at a manual for that
15 processor?
16 MR. AUCHTER: Objection. Form.
17 **A So let me just make sure I understand**
18 **this. So now we're in a hypothetical world where**
19 **we have a fresh graduate, straight out of college,**
20 **obviously not a POSITA, who is going to work on an**
21 **Intel processor.**
22 **Have I got it right so far?**

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1 Q Yeah, let's simplify that hypothetical.
2 Assuming someone working on an IA-32 processor.
3 **A Okay. So someone is working on an IA-32**
4 **processor. Now what?**
5 Q And that person would like to know how an
6 IA-32 processor works.
7 **A Yes.**
8 Q Would that person consult a manual
9 published by Intel for that processor?
10 MR. AUCHTER: Objection. Form.
11 **A Well, it depends what they were working**
12 **on exactly.**
13 **They could be working at a level where**
14 **the particulars of the processor aren't relevant,**
15 **so no. They could consult with a more senior**
16 **engineer. So there are alternatives to that**
17 **premise.**
18 **Would there be some people that would**
19 **consult Intel documentation? Yes.**
20 Q I am handing you another document. This
21 is Exhibit 1028 in the '302 IPR and the '781 IPR.
22 (IPR2024-01346 and IPR2024-01347 Exhibit

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1 1028, previously marked, not attached.)
2 Q Please let me know when you see it.
3 **A Okay, I have it open.**
4 Q Do you recognize this document?
5 **A Yes.**
6 Q Have you reviewed it before?
7 **A I have.**
8 Q And have you reviewed the entire
9 document?
10 **A So this document appears to be a draft,**
11 **as you can see all the unaccepted changes within**
12 **it. And so given that it was a draft document, I**
13 **had no reason to think that anything in here is**
14 **correct. And so I just glanced at it, because as**
15 **far as I'm concerned this isn't reliable.**
16 **I think if we turn to my declaration, I**
17 **say something about this document.**
18 Q Did you finish your answer?
19 **A No. Sorry. I'm still looking.**
20 **All right. So, for example, looking**
21 **through my declaration here, I didn't expressly**
22 **give the same opinion on the Exhibit 1028 as I did**

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1 **on the Exhibit 1008. But my opinion about Exhibit**
2 **1028 is the same as the Exhibit 1008, in that**
3 **there is no evidence that this was available to a**
4 **POSITA at the time of the invention of the '781**
5 **patent. And it's a draft document. And I would**
6 **be amazed if Intel had published this in this**
7 **form.**
8 Q Do you understand what you read in this
9 document?
10 **A Well, the little that I bothered to read,**
11 **I certainly understood. It's not a complicated**
12 **document. And as I said, it's a draft document,**
13 **so I can't believe that this was ever published in**
14 **this form. And so its relevance in this matter**
15 **escapes me.**
16 Q You're not giving a legal opinion of
17 whether this document was publicly available as of
18 the priority date of the patents. Right?
19 **A Well, I'm not offering any legal opinion.**
20 **But I can tell you, as someone who has consumed**
21 **vast quantities of technical documentation over**
22 **the years, that I have never seen a reputable**

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1 **company like Intel put out a draft document, as**
2 **this clearly is.**
3 Q So you have never seen the document --
4 scratch that.
5 You have never seen this document before
6 being retained for these IPRs?
7 **A I'm sorry, I lost you there.**
8 Q Sorry.
9 **A Could you come again?**
10 Q My apologies. So you've never seen this
11 document before being retained for these IPRs?
12 **A I feel very confident on that. I can't**
13 **believe this was published.**
14 Q So your answer is you don't believe this
15 was published.
16 **A Correct.**
17 Q My question is, you never reviewed this
18 document before being retained for these IPRs.
19 Correct?
20 **A So my answer was, it's difficult for me**
21 **to have read something that I don't believe was**
22 **published. But if you want an answer, I don't**

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1 **believe I've ever read this document prior to**
2 **being retained in this matter.**
3 Q All right. I am going to switch to the
4 patents. And I would like to talk about the '302
5 patent first.
6 Earlier you had testified that you had
7 reviewed the '302 patent in its entirety and
8 understood its disclosure. Correct?
9 **A I'm sorry, I am having great difficulty**
10 **following you. Please say that again?**
11 Q You testified that you have reviewed the
12 '302 patent in its entirety and understood its
13 disclosure. Correct?
14 **A Yes.**
15 Q And do you agree the '302 patent
16 describes switching the role of the boot processor
17 to the spare processor without shutting down the
18 operating system?
19 **A So I'm a little loathe to summarize an**
20 **18-page patent in one sentence. And so I think a**
21 **good summary of the '302 is the abstract. It**
22 **reads, "According to one embodiment, a method**

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1 comprises detecting loss of lockstep (LOL) for a
2 processor in a multiprocessor system. The method
3 further comprises determining that the processor
4 for which the LOL is detected is assigned the role
5 of boot processor, and switching the role of boot
6 processor to a spare processor without shutting
7 down the system's operating system. In another
8 embodiment, a method comprises system firmware
9 determining that an LOL is detected for a lockstep
10 error processors that are assigned to the role of
11 boot processor in a system. The method further
12 comprises determining one of a lockstep pair of
13 processors that is not the cause of the LOL, and
14 copying the state of the determined one of the
15 lockstep pair of processors that is not the cause
16 of the LOL to a spare processor. The method
17 further comprises switching the role of boot
18 processor to the spare processor."
19 So I think that is a pretty good summary
20 of my understanding of the '302 patent.
21 Q Earlier you have testified that you have
22 reviewed the IPR petition in the '302 IPR and the

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1 petition in the '781 IPR. Correct?
2 **A Yes.**
3 Q And is it fair to say that you understand
4 the claim numbering of the claim limitations as
5 set forth in the petitions? For example -- sorry,
6 I just want to make sure that we are on the same
7 page regarding claim limitation numbering.
8 MR. AUCHTER: Counsel, can I just say
9 something. The echo that we had earlier seems to
10 be coming back from your sound, which I think is
11 causing some of the confusion in the questioning.
12 If you could perhaps get closer to the mic or
13 something, it might be a little easier for
14 Mr. Jones and the court reporter to hear.
15 MS. ZHANG: Okay. I apologize,
16 Mr. Jones. I don't have a different setup from
17 this morning, but I will try to speak louder and
18 see, make sure that you can hear me clearly.
19 THE WITNESS: So, actually, I don't think
20 speaking louder is the issue. It might be that
21 you are speaking louder, causing the echo. But I
22 am getting an echo that I'm having to listen

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1 extremely hard to you, so, but we'll persevere.
2 So as Mr. Auchter said, perhaps just leaning a
3 little closer to the microphone might help.
4 I'm sorry, you had a question pending
5 that it was about the petition, but I can't
6 remember what it was now.
7 Q Sure. Sure. So my question is, do you
8 understand the claim numbering as laid out in the
9 petitions; for example, Claim 1 has limitations,
10 one preamble, 1A, 1B, 1C, and 1D.
11 Are you aware of those claim limitation
12 numbering?
13 **A Yes. Sort of implicit in your question**
14 **is are the parties differing in the way they**
15 **number the limitations?**
16 Q Yeah. Do you see any difference for
17 numbering in any of the petition's numbering?
18 **A To tell you the truth, I didn't notice**
19 **any differences, so I'm quite happy to use**
20 **whatever notation you want to use, so long as**
21 **we're clear what we're talking about.**
22 Q Okay. Yeah. I do see you refer to

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1 limitation for example 1B, 1C in your declaration,
2 but you did not provide a claim listing. So I
3 just want to make sure that we're talking about
4 the same claim limitation.
5 A Oh, I see. Could you point me to an
6 example in my declaration?
7 Q For example, in Paragraph 40 of your '302
8 declaration you said, "For these reasons I
9 disagree with Dr. Brogioli that Fox in view of
10 Safford and Arai renders obvious Limitation 1D,"
11 and then I think you quoted a claim language.
12 A Right. So I think if I quoted the claim
13 language, it's pretty clear what I'm referring to,
14 isn't it?
15 Q Yes. So I think we are on the same page
16 about the numbering.
17 A Okay. Well, let's -- let's just do this:
18 To the extent there is any ambiguity, we'll just
19 agree on which limitation we're talking about, and
20 then talk about it. Does that work for you?
21 Q Yeah, that works for you. I will refer
22 to the claim limitations as Limitation 1B and 1C.

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1 A Okay.
2 Q And as you used in your declaration. And
3 I believe that's the same as the petition.
4 So going to the '302 patent, the claims.
5 Claim 1, Limitation 1C recites, "Changing a system
6 identifier used by the system's operating system
7 to recognize the boot processor, of said boot
8 processor for which said loss of lockstep is
9 detected to a different value, which causes
10 system's operating system to not recognize the
11 processor for which said loss of lockstep is
12 detected as a boot processor."
13 A Okay.
14 Q Yes. And claim Limitation 1D recites,
15 "Changing a system identifier of the spare
16 processor to that of the boot processor, thereby
17 switching the role of the boot processor to a
18 spare processor without shutting down the system's
19 operating system." Okay?
20 A Yes.
21 Q Okay. So we are looking at these
22 limitations.

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1 Do these limitations recite any
2 operations other than changing system identifiers
3 to switch the role of boot processor to a spare
4 processor without shutting down the system's
5 operating system?
6 A I don't understand. What do you mean by
7 "operations"?
8 Q Operations like changing a system
9 identifier, changing a system identifier of the
10 spare processor, changing a system identifier boot
11 processor.
12 I'm asking you what kind of operations or
13 steps are recited in these limitation to perform
14 the switching of the role of the boot processor to
15 a spare processor.
16 A So because the letters B, C, and D sound
17 so similar, are you okay with me saying 1 bravo, 1
18 Charlie, 1 delta to make clear what I'm referring
19 to?
20 Q That's okay.
21 A Okay. So 1 delta is what describes
22 switching the role of boot processor to a spare

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1 processor without shutting down the system's
2 operating system. And that step that is described
3 there is changing a system identifier of the spare
4 processor to that role of the boot processor.
5 Q Does that limitation recite anything
6 else?
7 A No.
8 Q Does Claim 1 require any other operations
9 for switching the role of the boot processor to a
10 spare processor without shutting down the system's
11 operating system?
12 A It states, "Changing a system identifier
13 of the spare processor to that of the boot
14 processor."
15 Q But your declaration, your position is
16 that switching the identifiers of the boot
17 processor with that of the spare processor does
18 not change the role of the boot processor. Right?
19 A I'm sorry, I can't agree with that. Can
20 you point me to where I say that in my
21 declaration?
22 Q Sure. If you could turn to Paragraph 34

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1 of your '302 declaration.
2 **A Okay, I've reviewed Paragraph 34. It**
3 **doesn't say anything along the lines of what you**
4 **just said.**
5 Q So in Paragraph 34 you said, starting
6 from the second sentence, "A POSITA would have
7 understood that such switching would have changed
8 the logical APIC ID (system identifier) of the
9 processor in error to the logical APIC ID of the
10 reserved processor (a different value)."
11 Even if -- even if correct, this does not
12 demonstrate the role of boot processor has been
13 transferred to a spare processor. Correct?
14 **A That's exactly what it says. And of**
15 **course, what it's talking about here is this**
16 **Fox-Safford-Arai combination. It's not talking**
17 **about the patent. So in the Fox-Safford-Arai**
18 **combination, the petitioner is relying upon these**
19 **APIC IDs, suggesting that the APIC ID is**
20 **sufficient to change the role of the boot**
21 **processor. That's just not true.**
22 **The APIC ID is nothing more than a number**

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1 **that dictates where interrupts get vectored to on**
2 **the bus. It says absolutely nothing about which**
3 **processor is used to boot the system.**
4 **And in fact, the APIC IDs don't even**
5 **exist until after the system has been booted, so**
6 **they can't possibly be an identifier that, quote,**
7 **identifies the role of the boot processor.**
8 Q So I heard you just said APIC IDs don't
9 even exist until after the system has been booted,
10 so they can't possibly be an identifier that
11 identifies the role of the boot processor.
12 **A Right.**
13 Q And to help me understand this sentence,
14 am I correct that your understanding of the role
15 of the boot processor is before a system has been
16 booted?
17 **A Well, so if we go back to Paragraph 33 of**
18 **my declaration. And therein I cite paragraph --**
19 **or Column 12, Lines 1 through 21 of what a boot**
20 **processor does.**
21 **And so the boot processor -- the**
22 **processor that is going to do all of this has to**

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1 **be known as you come out of power on reset. The**
2 **APIC IDs that Dr. Brogioli points to, which I**
3 **believe I think that comes from Arai -- let me**
4 **just check that.**
5 **All right. So I'm looking in Arai,**
6 **Paragraph 26. And this is a paragraph that**
7 **Dr. Brogioli pointed to. And so he's -- therein**
8 **it talks about the MAPIC, but I think that's the**
9 **same as the APIC, it's just a sort of variance on**
10 **it. And this is created during boot time.**
11 **So given that it's created, it cannot**
12 **possibly identify the boot processor, because the**
13 **boot processor is already run.**
14 Q So just to make sure I understand.
15 You're saying that the boot processor role has
16 already been invoked before the APIC IDs are
17 assigned?
18 **A Exactly.**
19 Q And at this time it is still doing the
20 boot process of the system. Right?
21 **A Right. So could I direct you to Column**
22 **11, Line 61 of the '302.**

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1 **So from Line 61 through to the bottom of**
2 **the column, they are describing some hardware that**
3 **is external to all of these other processes that**
4 **runs after the first power up.**
5 **And then you can see in the last sentence**
6 **it says, "After those checks have passed, power**
7 **and clocks are given to a boot processor."**
8 **At that stage in the system power up, the**
9 **boot processor must be known; otherwise, how can**
10 **you possibly give power and clock to it? The boot**
11 **processor must be known at this stage.**
12 **Then we go to the top of Column 12. And**
13 **we talk about all of the things the boot processor**
14 **does when it begins execution. And one of the**
15 **things that Dr. Brogioli points out is that in an**
16 **IA-32 system you may build an APIC table. Well,**
17 **that building the APIC table occurs between**
18 **control being given to the boot processor and the**
19 **operating system being run. Which means it occurs**
20 **after the boot processor has already been**
21 **identified, and hence the APIC ID cannot possibly**
22 **be the identifier that specifies the boot**

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1 **processor.**
2 Q What you're pointing to here from Column
3 11, Line 61, to Column 12, you're talking about
4 the boot process. Right?
5 **A Right. Which is different to the boot**
6 **processor.**
7 Q And you're saying the boot processor is
8 already selected before the APIC IDs are
9 designated. Correct?
10 **A Well, what I'm saying is, if you look in**
11 **Column 11, Line 66 and 67, is as part of the**
12 **system powering on, it says, Power and clocks are**
13 **given to a boot processor. At that point in the**
14 **powering up of the entire system, the boot**
15 **processor, the processor that is going to assume**
16 **the role of boot processor, must be known.**
17 **Otherwise how can it possibly pass power and**
18 **clocks to it.**
19 Q And is role of the boot processor only
20 for what you have pointed me to here from Column
21 67 to Column 12?
22 **A Well, in my declaration I point you to**

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1 **Column 12, Lines 1 through 21, describing what the**
2 **boot processor does once it begins execution.**
3 **And so it starts with the processor**
4 **beginning executing code out of the system's**
5 **read-only memory, and culminates at Line 21 by**
6 **branching into the operating system loader**
7 **program. Okay?**
8 Q Okay.
9 **A So, if I go and read Arai, which is what**
10 **Dr. Brogioli is pointing to, the MAPIC table is**
11 **built once the boot processor is run. So how can**
12 **it possibly identify the processor to be the boot**
13 **processor? It doesn't even exist.**
14 Q So going to the Column 12 of the '302
15 patent that you were referring to, at the end of
16 Line -- actually, between Line 20 and to Line 21,
17 you just read that sentence. "By branching the
18 boot processor into the entry point of such OS
19 loader program."
20 **A Correct.**
21 Q So this point, this is still the boot
22 process. Right? The OS, the operating system, is

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1 not running yet. Right?
2 **A Yeah; but the boot processor is.**
3 Q Sir, are you saying that the boot
4 processor role are performed during this boot
5 process that we just looked at?
6 **A The boot processor's role starts Column**
7 **12, Line 1, and then comes down.**
8 **Now, in my declaration I cited it as far**
9 **as 21 where we're saying, Okay, we are now going**
10 **to branch into the OS loader program. And then it**
11 **starts talking about the OS loader program and so**
12 **on. Okay?**
13 **And so we start getting into highly**
14 **OS-specific stuff at this point, which is pretty**
15 **much where I cut off my quote in my declaration**
16 **here.**
17 **The point being is, is that on a power on**
18 **reset there is hardware and stuff out there that**
19 **does its thing, and then says, which processor is**
20 **going to be the boot processor. But that needs**
21 **some information. It takes that information and**
22 **says, That's the processor that I am going to**

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1 **apply power and clocks to, such that it becomes**
2 **the boot processor and then goes and initializes**
3 **the system and loads the operating system, as**
4 **described in Column 12, Lines 1 through 21.**
5 Q So does the boot processor play any role
6 after the operating system is up and running?
7 **A I -- that is -- I think that is**
8 **implementation-dependent. Certainly the role of**
9 **the boot processor is built into the name, is to**
10 **boot the system. And the specification lays out**
11 **what that means.**
12 **If for a particular architecture**
13 **thereafter that processor is special in some way,**
14 **I don't think the claims of the '302 discuss that.**
15 **Certainly if we look at what Dr. Brogioli says, he**
16 **contradicts himself. On the one hand he says that**
17 **once the operating system is up and running, the**
18 **boot processor just becomes an applications**
19 **processor. That suggests it's no different to any**
20 **other processor, suggesting that it has no role**
21 **during runtime.**
22 **And then in another part of his**

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1 **declaration he starts talking about all of the**
2 **special things that the boot processor does during**
3 **runtime. So it's very unclear to me what**
4 **Dr. Brogioli's real opinion is.**
5 **But my opinion is it doesn't feature into**
6 **the claims of the '302.**
7 Q Does the claims of the '302 patent recite
8 switching the role of the boot processor without
9 shutting down the operating system?
10 **A Yes. Or to be clear, switching the role**
11 **of a boot processor to the spare processor without**
12 **shutting down the system's operating system.**
13 Q Okay. Could we go to Paragraph 37 of
14 your declaration?
15 MR. AUCHTER: While we're doing that, I
16 think we've been going almost an hour. So if you
17 can get to a break point relatively soon. I
18 thought we started at 20 after last time, but I
19 could be wrong.
20 THE WITNESS: We did.
21 MS. ZHANG: Court reporter, can I know
22 how much time we have left for this deposition?

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1 (Discussion off the record.)
2 Can we be back in ten minutes?
3 THE WITNESS: Sorry. Ten, one zero?
4 Very good. Thank you.
5 (A recess was taken.)
6 BY MS. ZHANG:
7 Q I'd like to switch to the '781 patent.
8 And you testified that you have reviewed
9 the '781 patent. Correct?
10 **A One minute, please. I'm still bringing**
11 **it up. Because I can't -- the numbers are**
12 **missing, I've got to randomly choose.**
13 **So I have the '781 up. So can I have the**
14 **question, please?**
15 Q You have reviewed the '781 patent?
16 **A Correct.**
17 Q And you understood its disclosure?
18 **A Yes.**
19 Q And do you agree the '781 patent
20 describes transferring during system runtime the
21 role of the boot processor to the spare processor?
22 **A So again, I'm not happy with summarizing**

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1 **an entire patent in one sentence. I think the**
2 **abstract is a reasonably good summary of the**
3 **patent. The abstract reads, "A system comprises a**
4 **plurality of processors, and data storage storing**
5 **information that assigns a role of boot processor**
6 **to one of the plurality of processors and assigns**
7 **a role of spare processor to another of the**
8 **plurality of processors. The system further**
9 **comprises logic operable, responsive to detecting**
10 **loss of lockstep for the boot processor, for**
11 **transferring, during system runtime, the role of**
12 **boot processor to the spare processor."**
13 **So I think that's a reasonable summary of**
14 **the '781 patent.**
15 Q So if you look at Claim 1 of the '781
16 patent.
17 **A Okay.**
18 Q If you can look at Claim Limitation 1C.
19 **A I'm sorry, can you use bravo, Charlie,**
20 **delta. 1?**
21 Q This is 1 Charlie.
22 **A One Charlie. Thank you.**

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1 Q This limitation recites, "Logic operable,
2 responsive to detecting loss of lockstep for said
3 boot processor, for transferring, during system
4 runtime, the role of boot processor to said spare
5 processor." Okay?
6 **A Yes. Oh, are you thinking the rest of**
7 **the "wherein" clause is 1 delta?**
8 Q No. That's limitation -- starting from
9 limitation -- starting from "wherein," that would
10 be Limitation 1 delta, yeah.
11 **A Okay. That's -- that's what I was**
12 **checking. Okay. So you're limiting it to that.**
13 **All right. Very good. Yes?**
14 Q Does the claim -- does Claim 1 recite any
15 operations for performing transferring during
16 system runtime the role of boot processor to said
17 spare processor?
18 MR. AUCHTER: Objection. Form.
19 **A Could I have the question again?**
20 Q Yes. Does Claim 1 recite any operations
21 for performing transferring during system runtime
22 the role of boot processor to said spare

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1 processor?
2 **A I'm not completely sure what you're**
3 **asking me. So Limitation 1 Charlie says that**
4 **there's logic that is operable, to transfer,**
5 **during system runtime, the role of boot processor**
6 **to said spare processor. So 1 Charlie is saying**
7 **that there's logic with respect to transfer.**
8 **And then if we go to Claim Limitation 1**
9 **bravo, there's data storage storing information**
10 **that assigns a role of boot processor to one of**
11 **said plurality of processors and assigns a role of**
12 **spare processor to another of said plurality of**
13 **processors.**
14 **So given that 1 bravo identifies data**
15 **storage storing information that assigns a role,**
16 **and then in 1 Charlie we have logic operable for**
17 **transferring the role, then to me that means that**
18 **the data storage needs to be updated.**
19 Q So your understanding is that to perform
20 the transfer of the role of the boot processor to
21 the spare processor, the data storage storing
22 information of the role of the boot processor and

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1 the spare processor need to be updated. Correct?
2 **A Yes.**
3 Q Earlier we were talking about your
4 declaration for the '302 patent. You said,
5 switching the APIC IDs would now switch the role
6 of the boot processor to spare processor.
7 Correct?
8 **A Right. I make a point that the APIC IDs**
9 **of Arai is held in -- is built by the boot**
10 **processor after the boot processor is running.**
11 **And so it cannot possibly be identifying the boot**
12 **processor.**
13 Q And does your opinion change with respect
14 to the '781 patent's transferring the role of boot
15 processor to the spare processor?
16 **A I'm sorry, which opinion, that Arai**
17 **doesn't close, or what? It's unclear what I'm**
18 **giving an answer to.**
19 Q You said that changing the APIC IDs does
20 not change the role of the boot processor to the
21 spare processor. Right?
22 **A Thank you. I was just clarifying.**

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1 **That's the opinion I'm asking -- you're asking**
2 **about. And I have the same opinion for the '781**
3 **as I do for the '302: That changing the APIC ID**
4 **cannot change the role because the APIC IDs don't**
5 **exist when the processor -- the boot processor is**
6 **selected.**
7 Q Yes. I just wanted to confirm that.
8 And this is discussed in your
9 declaration, Paragraphs 34 and 36. Right?
10 **A That is correct. And to be clear, I'm**
11 **talking about my '781 declaration, so Paragraphs**
12 **34 through 36 explain how APIC IDs cannot assign**
13 **role of the boot processor.**
14 Q Could you go to Paragraph 37 of your '781
15 declaration.
16 **A Okay.**
17 Q At the end of the paragraph -- sorry, you
18 were saying something?
19 **A I just said, I'm there.**
20 Q Thank you. At the end of the paragraph
21 you cited to the '781 patent, Column 14, Lines 4
22 to 32. Can we go to Column 14, Lines 4 to 32?

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1 **A Okay, I'm there.**
2 Q In this passage it describes a user
3 interface which allows the user to designate the
4 system's boot processor and spare processor.
5 Correct?
6 **A Yes. Your sort of question suggests it**
7 **is the only thing described here. But a user**
8 **interface is very definitely described here, yes.**
9 Q And if you go to Line 17 to 18, Column
10 14, Line 17 to 18.
11 **A Okay.**
12 Q It's describing that the user can use the
13 interface to specify which OS to boot. Correct?
14 **A Yes.**
15 **Well, to be clear, it's talking about a**
16 **command line interface. And what is described**
17 **here is a system which for sure under certain**
18 **circumstances allows a user to specify the boot**
19 **processor.**
20 **And then it's also providing additional**
21 **examples of things that could be configured.**
22 Q And one example is that a user can use

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1 the command line interface to specify which OS to
2 boot. Correct?
3 **A That's an example they give, yes.**
4 Q So if the user is selecting the OS to
5 boot, that means the OS is not running yet.
6 Correct?
7 **A I disagree.**
8 Q Can you explain?
9 **A Sure. Let's just use a hypothetical**
10 **example to make things clear.**
11 **Let's say I have a multiprocessor system**
12 **that can run either some variant of Linux or some**
13 **variant of Windows.**
14 **Then I see nothing in these disclosures**
15 **which say that, for example, this PAR manager,**
16 **that's the parmgr program, that is mentioned in**
17 **this section, why that program can't be run,**
18 **assuming it can be compiled, of course, on the**
19 **system.**
20 **And looking at it, the operating system**
21 **wouldn't have to be running, but I don't -- I**
22 **don't see it precluded to do this.**

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1 Q Could you go to Column 18, starting from
2 Line 14.
3 **A Okay, I'm there.**
4 Q The patent says here in Block 601, "The
5 role of boot processor is assigned to one of a
6 plurality of processors in the system. As
7 described above, the role of boot processor may be
8 so assigned in a device tree. Such role of boot
9 processor may be assigned by a user (e.g., via a
10 user interface) in certain embodiments, and
11 assigned by the system's firmware in other
12 embodiments."
13 Do you see that?
14 **A Yes.**
15 Q So is it fair to say that a user
16 interface can use -- can be used to assign a role
17 of boot processor here?
18 **A Well, as it says in the introduction to**
19 **this paragraph, returning to Figure 6, "A general**
20 **flow diagram for operation of certain embodiments**
21 **is shown." And for certain embodiments it**
22 **absolutely describes a user interface which allows**

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1 **a user to set the role of boot processor.**
2 Q And before the user selects a boot
3 processor, the operating system is not running
4 yet. Correct?
5 MR. AUCHTER: Objection. Form.
6 **A No, I don't think that -- that follows at**
7 **all.**
8 **I can certainly envisage a system which**
9 **has a default boot processor. It boots the**
10 **system, including the operating system, and then a**
11 **system administrator comes in while the operating**
12 **system is running, to run a program to say, Hey,**
13 **you may have booted from Processor 3 this time,**
14 **but henceforth I'd like to you boot from Processor**
15 **6.**
16 **So there's nothing that's described there**
17 **in that paragraph or in Figure 6 to suggest one**
18 **way or the other whether the operating system is**
19 **running.**
20 Q So you said -- in your hypothetical, you
21 said the administrator can change, ask the system
22 to change the boot processor from, for example,

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1 Boot Processor 3 to Boot Processor 6 next time the
2 system reboots.
3 Is that correct?
4 MR. AUCHTER: Objection. Form.
5 **A If I said Boot Processor 3 to Boot**
6 **Processor 6, that's not what I meant to say.**
7 **What I'm saying is, in my hypothetical,**
8 **Figure 6 doesn't say anything about whether an**
9 **operating system is running. It's just saying**
10 **that when the system is running, a user can come**
11 **in and assign a role of boot processor to one of**
12 **the processors in the system. And so the**
13 **hypothetical I gave you is I can envisage a system**
14 **that by default boots from Processor 3. And after**
15 **it's booted for the first time and it has loaded**
16 **the operating system, the system administrator can**
17 **run a program that says, next time you boot,**
18 **please boot using Processor 6.**
19 **I think that's a perfectly valid**
20 **possibility envisaged by Figure 6.**
21 Q So in your hypothetical, after the
22 administrator identify another processor as the

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1 boot processor, for the next time the system
2 reboot, the new boot processor needs to perform
3 the system initialization loading the operating
4 system the next time the system reboot. Correct?
5 **A I think you've got it right. I'm just**
6 **saying that basically you have expressed the**
7 **opinion that the steps in Figure 6 do not preclude**
8 **the use of an operating system. I'm saying I**
9 **don't see anything about Figure 6 or the**
10 **description in Figure 6 in Column 18 that**
11 **precludes those steps from being done while the**
12 **operating system is running.**
13 **I'm not saying it is running; I'm just**
14 **saying I don't see anything that precludes that.**
15 Q Earlier you testified that the boot
16 processor needs to be selected first during a boot
17 process before the operating system is running.
18 Correct?
19 **A So what I pointed out was that if we go**
20 **to Column 11, Line 66, in order for the boot-up**
21 **process hardware to pass power and clocks to a**
22 **boot processor, the boot processor must be running**

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1 **at that point.**
2 Q Right. And we talked about this as the
3 boot process before launching the boot processor
4 into the entry point of the OS loader program.
5 Right? And that is Column 12, Line 20.
6 **A I'm sorry, that's -- you've just**
7 **conflated two different things.**
8 **Paragraph -- sorry, Column 11, Line 60**
9 **through 66 -- 67, describe the boot-up process of**
10 **a traditional IPF system. The boot-up process is**
11 **not the same as the boot processor. The boot-up**
12 **process does various things, and then selects a**
13 **boot processor as explained in Column 11, Line 66.**
14 **The boot processor then, as explained in**
15 **Column 12, Line 1 through at least Line 21, then**
16 **starts doing the boot processor things described**
17 **here, which culminate in it branching to the boot**
18 **processor -- into entry point for the OS loader**
19 **program.**
20 Q So when the boot processor is selected,
21 the OS is not running yet. Correct?
22 **A In the description here in Column 11,**

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1 **Line 60 through -- all the way through Column 12,**
2 **Line about 16, 17, 18, all of that happens before**
3 **the OS is running.**
4 Q And the claims recite transferring the
5 role of the boot processor to the spare processor
6 during system runtime. Correct?
7 **A Correct.**
8 MS. ZHANG: Counsel, I think I'm finished
9 all my questions. Would you like to do redirect?
10 MR. AUCHTER: Thank you, Counsel. Let's
11 go off line and take a ten-minute break while we
12 think about that, if we could, please. Appreciate
13 it.
14 (A recess was taken.)
15 MR. AUCHTER: All right. We don't have
16 any further questions. If the court reporter has
17 some questions about pronunciation, et cetera, we
18 will of course stay on until those get answered.
19 But otherwise, thank you very much.
20 MS. ZHANG: I do have one more question.
21 Just one more clarification.
22 BY MS. ZHANG:

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1 Q Mr. Jones, during any of the breaks we
2 took during this deposition did you discuss the
3 substance of your testimony with counsel?
4 **A No.**
5 MS. ZHANG: Thank you. No further
6 questions.
7 MR. AUCHTER: Still no further questions.
8 (Off the record at 4:07 p.m. EDT.)
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ACKNOWLEDGMENT OF DEPONENT

I, NIGEL A. JONES, do hereby acknowledge that I have read and examined the foregoing testimony, and the same is a true, correct and complete transcription of the testimony given by me, and any corrections appear on the attached Errata sheet signed by me.

_____ _____
(DATE) (SIGNATURE)

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C E R T I F I C A T E

I, Debra Ann Whitehead, E-Notary Public in and for the Commonwealth of Virginia, do hereby certify:

That NIGEL A. JONES, the witness whose deposition is hereinbefore set forth, was duly sworn by me before the commencement of such deposition and that such deposition was taken virtually and is a true record of the testimony given by such witness.

I further certify that the adverse party, FORAS TECHNOLOGIES LTD, was represented by counsel at the deposition.

I further certify that the deposition of NIGEL A. JONES occurred virtually, on Wednesday, September 24, 2025, from 10:01 a.m. to 4:07 p.m. EDT.

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I further certify that I am not related to any of the parties to this action by blood or marriage, I am not employed by or an attorney to any of the parties to this action, and that I am in no way interested, financially or otherwise, in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 24th day of September, 2025.

My commission expires:
October 31, 2027

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