

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BMW OF NORTH AMERICA, LLC,
Petitioner,

v.

FORAS TECHNOLOGIES LTD.,
Patent Owner

IPR2023-01347
Patent No. 7,624,302

**DECLARATION OF NIGEL A. JONES IN SUPPORT OF PATENT
OWNER'S RESPONSE**

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
II.	BACKGROUND AND QUALIFICATIONS.....	2
III.	LEGAL PRINCIPLES	3
A.	Claim construction	3
B.	Burden of Proof.....	4
C.	Anticipation.....	4
D.	Obviousness	5
IV.	PERSON OF ORDINARY SKILL IN THE ART	6
V.	GROUND 1 – THE PROPOSED COMBINATION OF FOX, SAFFORD AND ARAI WOULD NOT RENDER CLAIM 1 OBVIOUS TO A POSITA.....	8
VI.	GROUND 2 – THE PROPOSED COMBINATION OF FOX, SAFFORD, ARAI AND LANDRY WOULD NOT RENDER CLAIM 1 OBVIOUS TO A POSITA.	15
VII.	GROUND 1 AND 2 – THE PROPOSED COMBINATIONS OF FOX, SAFFORD, AND ARAI (GROUND 1) AND FOX, SAFFORD, ARAI AND LANDRY (GROUND 2) WOULD NOT RENDER INDEPENDENT CLAIMS 13 AND 21 OBVIOUS TO A POSITA.....	17
VIII.	GROUND 3 AND 4 – THE PROPOSED COMBINATIONS OF FOX, SAFFORD, ARAI AND BIGBEE (GROUND 3) AND FOX, SAFFORD, ARAI, LANDRY AND BIGBEE (GROUND 4) WOULD NOT RENDER INDEPENDENT CLAIM 26 OBVIOUS TO A POSITA.....	19

I, Nigel A. Jones, hereby declare as follows:

I. INTRODUCTION

1. I am over the age of eighteen (18) years and otherwise competent to make this declaration.

2. I have been retained as an expert witness on behalf of Foras Technologies Ltd. (“Foras”) for the above-captioned *inter partes* review (“IPR”). I understand that the petition for *inter partes* review involves U.S. Patent No. 7,624,302 (“the ’302 Patent”).

3. I make this declaration based on my personal knowledge, educational background and training, consideration of the materials I discuss herein, and my expert opinions.

4. I am being compensated at a rate of \$600 per hour for my time in this matter. My compensation does not depend on the outcome of this proceeding, and I have no financial interest in its outcome.

5. In preparing this Declaration, I have reviewed and considered the ’302 Patent, the ’302 Patent’s prosecution history, the Petition, Dr. Michael C. Brogioli’s declaration, Ex. 1002, submitted in this proceeding, and each document cited in my declaration.

II. BACKGROUND AND QUALIFICATIONS

6. My qualifications for forming the opinions given in this declaration are summarized here and are addressed more fully in my curriculum vitae, which is submitted as Exhibit 2005. That exhibit also includes a list of my publications and expert testimony as of the date of this declaration.

7. I am currently the President of R.M.B. Consulting Inc. in Frederick, MD, a company that advises a variety of clients on engineering and intellectual property matters, and I have been with R.M.B. Consulting since 1995.

8. I am a named inventor on multiple issued and pending patent applications in several different engineering disciplines, including telecommunications, wireless systems and embedded processing.

9. I obtained a first-class honours degree in engineering ('The Special Engineering Programme') from Brunel University, London U.K. My degree was a joint degree in electrical and mechanical engineering. Since graduation I have practiced as an electrical engineer. I have forty years of experience designing complex electronic systems in a number of fields. I have extensive experience designing life support systems which are safety critical systems where errant behavior of a processor could lead to loss of life. I also have extensive experience in writing low-level, real-time firmware designed to interact with the hardware

features of a microprocessor. I am a senior member of the IEEE and a member of the IEEE's Communications Society.

10. I have previously served as an engineering consultant and testifying witness on matters related to, and including telecommunication systems, cloud computing systems, and embedded computer system hardware and software. This experience is encompassed in my work as a system designer and architect, as well as my work as an engineering consultant and expert witness over the past 40 years.

11. My current curriculum vitae, provided in Exhibit 2005, contains more information on my background and experience, as well as the cases over the past decade in which I have served as an expert witness.

12. No part of my compensation is contingent upon the outcome of this litigation. I have no other interests in this litigation or with any of the parties.

III. LEGAL PRINCIPLES

A. Claim construction

13. I understand that the first step in performing a validity analysis of the patent claims is to interpret the meaning and scope of the claims by construing the terms and phrases found in those claims. I understand that the appropriate construction of a claim term is its ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent.

14. I understand that standard for claim construction in an *inter partes* review is the same standard as is applied in district court proceedings.

15. I understand that a determination of the meaning and scope of the claims is a matter of law. I have been informed that to determine the meaning of the claims, one should consider the intrinsic evidence, which includes the patent's claims, written description, and prosecution history.

B. Burden of Proof

16. I understand that in an *inter partes* review, the petitioner has the burden of proving unpatentability by a preponderance of the evidence.

C. Anticipation

17. I have been instructed by counsel and understand that a reference is anticipated if a single prior art reference discloses each and every claim element, either explicitly or inherently, as arranged in the same way as in the claim. I understand that where even one claim element is not disclosed in a reference, a contention of anticipation fails.

18. I further understand that when a reference fails to explicitly disclose a claim element, that reference inherently discloses that element only if the reference must *necessarily* include the undisclosed claim element.

D. Obviousness

19. I have been instructed by counsel and understand that a combination of prior art references may render a claim obvious if, at the time of the invention, a person of ordinary skill in the art would have selected and combined those prior-art elements in the normal course of research and development to yield the claimed invention.

20. I understand that in an obviousness analysis, one should consider the *Graham* factors: the scope and content of the prior art; the differences between the claimed inventions and the prior art; the level of ordinary skill in the art; and certain secondary considerations, identified below. I further understand the obviousness analysis is to be performed on a claim-by-claim basis. I understand that a person of ordinary skill in the art is a person of ordinary creativity, not an automaton.

21. I have been instructed by counsel and understand that obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. I understand obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have been motivated to combine those references in a manner that would include all limitations of the challenged claim, and, in making

that combination, a person of ordinary skill in the art would have had a reasonable expectation of success.

22. I also understand that an obviousness analysis must be conducted with awareness of the distortion caused by hindsight bias and with caution of arguments reliant upon *ex post* reasoning. For instance, I understand that when considering obviousness, I should put myself in the position of a person of ordinary skill in the field at the time of the invention, rather than considering new information that is known today but was not known before the priority date of the challenged patent.

23. In particular, I understand that it is improper to use the challenged patent's disclosure or invention as a roadmap to find its prior-art components, because such an approach discounts the value of combining various existing features or principles in a new way to achieve a new result.

IV. PERSON OF ORDINARY SKILL IN THE ART

24. I understand that a person of ordinary skill in the art ("POSITA") is considered to have the normal skills and knowledge of a person in a certain technical field, as of the time of the invention at issue. I understand that factors that may be considered in determining the level of ordinary skill in the art include: (1) the education level of the inventor; (2) the types of problems encountered in the art; (3) the prior art solutions to those problems; (4) the rapidity with which

innovations are made; (5) the sophistication of the technology; and (6) the education level of active workers in the field.

25. Dr. Brogioli states that “a person of ordinary skill in the art as related to the ’302 Patent would have at least a bachelor’s degree in Computer Science, Computer Engineering, or equivalent, and at least two years of prior work experience with computer architecture design, including experience relating to fault tolerant computer architecture design, as of the earliest priority date of the ’302 Patent—October 25, 2004. If a person did not have a bachelor’s degree, additional relevant and practical experience with fault tolerant computer systems could provide an acceptable substitute. Likewise, further education beyond a bachelor’s degree could compensate for a deficiency in practical experience.” Ex. 1002, ¶ 29.

26. It is my opinion that “a person of ordinary skill in the art as related to the ’302 Patent would have at least a bachelor’s degree in Electrical Engineering, Computer Engineering, or equivalent, and at least two years of prior work experience with computer architecture, including experience relating to fault tolerant computer architecture, as of the earliest priority date of the ’302 Patent—October 25, 2004. If a person did not have a bachelor’s degree, additional relevant and practical experience with fault tolerant computer systems could provide an acceptable substitute. Likewise, further education beyond a bachelor’s degree

could compensate for a deficiency in practical experience. Based at least on my educational and work experience, it is my opinion that I qualify as a POSITA under either Dr. Brogioli's proposed level of skill in the art or my own.

V. GROUND 1 – THE PROPOSED COMBINATION OF FOX, SAFFORD AND ARAI WOULD NOT RENDER CLAIM 1 OBVIOUS TO A POSITA.

27. In my opinion, the proposed combination of US 2005/0172164 A1 (“Fox”), Ex. 1005, US 2004/0006722 A1 (“Safford”), Ex. 1006, and US 2006/0036889 A1 (“Arai”), Ex. 1007, does not render claim 1 of the '302 Patent obvious as the Petition and Dr. Brogioli suggest.

28. As Dr. Brogioli concedes, “Fox does not explicitly disclose a boot processor.” Ex. 1002, ¶ 84.

29. The designation of a boot processor (BSP) and applications processors (APs) in Ex. 1008 (referred to by Dr. Brogioli as “IA-32”) is disclosed as being performed following a power-up or reset. Ex. 1008, 238 “Following a power-up or RESET of an MP system, system hardware dynamically selects one of the processors on the system bus as the BSP.”

30. Dr. Brogioli alleges that in Ex. 1008 and Ex. 1028 (referred to by Dr. Brogioli as “MP Specification”), “the BSP executes the BIOS code to boot the operating system, initialize the APICs, and build the MP configuration table to communicate to the operating system about the APICs and APs.” Ex. 1002 ¶ 47.

Dr. Brogioli also alleges that “once the operating system is up and running, the BSP functions as an AP.” *Id.* (citing Ex. 1028 at 75).

31. Dr. Brogioli relies on Ex. 1008 for disclosures relating to the initial selection of a boot processor or bootstrap processor in Fox but has not presented evidence as to: whether Ex. 1008 was available to a POSITA at the time of the invention of the '302 patent, why a POSITA would have understood Ex. 1008 as a relevant description of the system described in Fox, or why any of the implementation details in Ex. 1008 would have been known in the art at the relevant time.

32. Petitioner and Dr. Brogioli allege “Fox would have designated one of its processors as the boot processor responsible for initializing the multiprocessor system and booting the operating system.” Pet. 15 (citing Ex. 1008 at 238-239). I disagree that this is how a POSITA would have understood Fox. Fox does not mention a boot processor, and there is no evidence that a POSITA would have implemented Fox in the manner described in Ex. 1008 at 238-239.

33. To the extent Dr. Brogioli contends that “initializing the multiprocessor system and booting the operating system” can be part of the role of boot processor, I agree. For example, in the '302 patent, the boot processor roles of master processor 12A are described as follows:

The boot processor begins executing code out of the system's Read-Only Memory (ROM) (not specifically shown in FIG. 2). The code that executes is the PAL 201, which gets control of system 10. PAL 201 executes to acquire all of the processors in system 10 A (recall that there may be many lockstep processor pairs, such as pairs 12 and 15) such that the processors begin executing concurrently through the same firmware. After it has performed its duty of initializing the processor(s), PAL 201 passes control of system 10 A to SAL 202. It is the responsibility of SAL 202 to discover what hardware is present on the system platform, and initialize it to make it available for the OS 11. When main memory is initialized and functional, the firmware 18 A is copied into the main memory. Then, control is passed to EFI (not shown), which is responsible for activating boot devices, which typically includes the disk. The EFI reads the disk to load a program into memory, typically referred to as an operating system loader. The EFI loads the OS loader into memory, and then passes it control of system 10A by branching the boot processor into the entry point of such OS loader program.

Ex. 1001 at 12:1-21.

34. Petitioner and Dr. Brogioli contend that the role of boot processor is transferred to a spare processor in the Fox-Safford-Arai combination. Pet. 27. “A POSITA would have understood that such switching would have changed the logical APIC ID (‘system identifier’) of the processor in error to the logical APIC

ID of the reserved processor (‘a different value’). [Arai, [0020]-[0020], [0025]-[0026]]; Brogioli, ¶121.” Even if correct, this does not demonstrate the “role of boot processor” has been transferred to a spare processor. For example, Petitioner provides no evidence that changing the logical APIC ID of the processor in error to the logical APIC ID of the reserved processor has any impact on which processor performs any boot processor role, including for example the functions of initializing the system or booting the operating system. Indeed, Dr. Brogioli’s contention that, in IA-32, the boot processor becomes an applications processor after the boot process is finished is at odds with his contention that transferring APIC IDs effectuates a transfer, during runtime, of the role of boot processor to a spare processor.

35. Furthermore, the processor identifiers in Arai are created in a table in RAM during the boot process by the BIOS. Ex. 1007 at ¶ 20 (“the system initialization includes generating a table in which each processor in the system is designated as active and available to the operating system or in an idle state and unavailable to the operating system”), ¶ 21 (“The BIOS creates a table in the main memory (RAM) during start-up”). I note that during his deposition, Dr. Brogioli recognized that Arai’s table designating active/idle processors is stored in RAM. Brogioli Dep. at 103:14-21. I further note that as to the Fox-Arai combination, Dr. Brogioli states that the register or table used in Fox for identifying each processor’s

operational state would be stored in RAM, as it is in Arai. Brogioli Dep.

108:10:10-109:4; see also *Id.* at 110:4-11, 111:12-112:12.

36. I see no evidence in Arai or from Dr. Brogioli, that changes to the APIC ID play any role in boot processor functions. Indeed, Dr. Brogioli states that in Arai “every time you power the machine up or reboot it – or power cycle it, I should say – the BIOS runs again out of this non-volatile memory that’s a ROM or an EEPROM, as an example.” Brogioli Dep. at 111:7-11. A POSITA would readily recognize, based on Arai’s disclosure of how the table of APIC IDs is created by the BIOS during bootup and written to RAM, that changes to logical identifiers made during runtime have no impact on which processor assumes the role of boot processor. A POSITA would understand from Arai that because the table of APIC IDs is created by the BIOS during bootup, the APIC IDs themselves does not assign the role of boot processor, nor does swapping APIC IDs in Arai “transfer, during runtime, the role of boot processor to a spare processor.” An identifier, such as Arai’s APIC ID, stored in RAM would not persist through a reset.

37. In contrast, the ’302 specification describes a different approach wherein, for example, information regarding the boot device path can be changed during runtime and that is then persistently stored “for the next time the system reboots.” Ex. 1001 at 12:56; see also *id.* at 12:36-59, 8:34-59.

38. Dr. Brogioli also says that Arai teaches “transfer[ring] the execution context of the failing processor to the reserved processor.” Ex. 1002 ¶ 50 (citing Arai [0002]-[0023], [0025], FIGS 4a-4b). As a POSITA would readily recognize, transferring the execution context of a failing processor to a reserved processor is different from transferring the role of boot processor to reserved processor. Execution context generally refers to the information a processor needs to execute a thread or process. Dr. Brogioli has identified no evidence in Arai that any aspect of the “execution context” plays any part in transferring the role of boot processor.

39. Dr. Brogioli similarly states that "Fox teaches that during the SMI, the system state of each processor is completely saved to memory, the caches and pipelines are flushed, and the BIOS switches the memory save state from the old processor (i.e., the failing processor) to the new processor (i.e., the spare processor)." Ex. 1002 at ¶ 105 (citing Fox, [0041]). A POSITA would not understand switching the memory save state from one processor to another, as described in Fox, to cause a transfer of the role of boot processor because (1) Fox does not disclose a boot processor and (2) even if one assumed that Fox had a boot processor, there is no evidence that the role of boot processor is designated using the memory save state. In paragraph 107 of Dr. Brogioli's declaration, he contends that “both Fox and Arai disclose or suggest . . . using firmware to designate the processor roles during system initialization, identify the failing

processor, and replace the failing processor with the spare processor.” In paragraph 121, he similarly states that “Arai discloses that during system initialization, the BIOS creates a table that identifies each processor in the system and its designated operational state, i.e., active or disabled. *Id.*, [0019]-[0022]. If the BIOS determines the error requires replacement of the processor, and if there is reserved inactive processor, the identification numbers of the active processor in error and the reserved inactive processor are switched.” To the extent that Dr. Brogioli’s statements here were intended to imply that either Fox or Arai discloses or suggests designating processor roles during system initialization based on some prior identification of a failing processor and/or replacement of a failing processor with a spare processor, I disagree. None of the cited portions of Fox (e.g., ¶¶ 40-42) or Arai (e.g., ¶¶ 20, 22-24) provide any support for that contention because they do not teach or suggest a relationship between a failing processor and processor roles during system initialization.

40. For these reasons, I disagree with Dr. Brogioli that Fox in view of Safford and Arai renders obvious limitation 1[d], i.e., “changing a system identifier of the spare processor to that of the boot processor, thereby switching the role of boot processor to a spare processor without shutting down the system’s operating system.”

VI. GROUND 2 – THE PROPOSED COMBINATION OF FOX, SAFFORD, ARAI AND LANDRY WOULD NOT RENDER CLAIM 1 OBVIOUS TO A POSITA.

41. In my opinion, the proposed combination of US 2005/0172164 A1 (“Fox”), Ex. 1005, US 2004/0006722 A1 (“Safford”), Ex. 1006, US 2006/0036889 A1 (“Arai”), Ex. 1007, and US 5,408,647 (“Landry”), Ex. 1011 does not render claim 1 of the ’302 Patent obvious as the Petition and Dr. Brogioli suggest.

42. Dr. Brogioli contends, with respect to claim limitation 1[b] (“determining that the processor for which said LOL is detected is assigned a role of boot processor;”), that “Fox in view of Safford and Landry further renders obvious determining that the processor for which said LOL is detected is assigned a role of boot processor. Ex. 1002, ¶ 141. Dr. Brogioli further contends that “a POSITA would have understood that Fox’s system would have, or it would have been obvious to have, a boot processor, and would have implemented Landry’s boot processor selection process in Fox and identified logical CPU0 in Fox as the boot processor. Thus, Fox combined with Safford and Landry, would have determined that the processor for which said LOL is detected is logical CPU0, which is the processor assigned a role of boot processor.” *Id.*, ¶ 143. Dr. Brogioli also contends, with respect to claim limitation 1[c] (“changing a system identifier, used by the system's operating system to recognize the boot processor, of said boot processor for which said LOL is detected, to a different value, which causes the

system's operating system to not recognize the processor for which said LOL is detected as the boot processor; and”), that “[a] POSITA would have understood that in Fox combined with Safford, Landry, and Arai, the system identifier used by the operating system to recognize the boot processor would be the identifier of logical CPU0.” *Id.*, ¶ 144.

43. Importantly, with respect to claim limitation 1[d], Dr. Brogioli contends that “a POSITA would have understood that in Fox combined with Safford, Landry, and Arai, the system identifier of the spare processor would be changed to the identifier of logical CPU0 to replace the boot processor that has lost lockstep.” *Id.*, ¶ 145. For the same reasons stated above as to Ground 1, I disagree that this combination discloses or renders obvious limitation 1[d].

44. Dr. Brogioli has not shown that switching the logical CPU0 as taught by Safford and Arai have the effect of switching the role of boot processor to a spare processor. As Dr. Brogioli states “such switching only requires ordinary computer programming skills to assign unique logical identifications to processors in Fox’s system and update Fox’s processor register or table storing the processor’s identifications, as known in the art.” *Id.*, ¶ 150. But, as previously explained, assigning logical identifications to processor and/or updating registers or tables storing processor identifications does not, by itself, teach or even suggest that the role of boot processor has been switched. To the extent that Dr. Brogioli intends to

rely on Landry's disclosures relating to "boot processor selection," none of those disclosures are relevant to "switching the role of boot processor to a spare processor without shutting down the system's operating system" because Landry's boot processor selection happens during system initialization, i.e., before the operating system is running. "Shutting down the operating system" can only occur if the operating system is running. Indeed, as Dr. Brogioli contends "Landry's process would have been a suitable option for selecting a boot processor in Fox's system consistent with the initialization protocol of IA-32 microprocessor system." Ex. 1002 ¶ 132.

45. For these reasons, I disagree with Dr. Brogioli that claim 1 is rendered obvious by the Fox-Safford-Landry-Arai combination.

VII. GROUNDS 1 AND 2 – THE PROPOSED COMBINATIONS OF FOX, SAFFORD, AND ARAI (GROUND 1) AND FOX, SAFFORD, ARAI AND LANDRY (GROUND 2) WOULD NOT RENDER INDEPENDENT CLAIMS 13 AND 21 OBVIOUS TO A POSITA.

46. In my opinion, the proposed combinations of US 2005/0172164 A1 ("Fox"), Ex. 1005, US 2004/0006722 A1 ("Safford"), Ex. 1006, US 2006/0036889 A1 ("Arai"), Ex. 1007, and US 5,408,647 ("Landry"), Ex. 1011 do not render claim 13 of the '302 Patent obvious as the Petition and Dr. Brogioli suggest.

47. Dr. Brogioli asserts that claim limitation [13e] "changing a system identifier of the spare processor to that of the boot processor, thereby switching the

role of boot processor to said spare processor” is substantially similar to claim limitation 1[d] and would have been obvious for the same reasons set forth with respect to Grounds 1 and 2 and limitation [1d]. Ex. 1002, ¶ 164.

48. For the reasons set forth above in paragraphs 27-45, I disagree with Dr. Brogioli that claim 13 is rendered obvious by either the Fox-Safford- Arai combination or the Fox-Safford-Landry-Arai combination.

49. In my opinion, the proposed combinations of US 2005/0172164 A1 (“Fox”), Ex. 1005, US 2004/0006722 A1 (“Safford”), Ex. 1006, US 2006/0036889 A1 (“Arai”), Ex. 1007, and US 5,408,647 (“Landry”), Ex. 1011 do not render claim 21 of the ’302 Patent obvious as the Petition and Dr. Brogioli suggest.

50. Dr. Brogioli asserts that claim limitation [21e] “wherein if determined that said first processor module is assigned the role of system boot processor, said system firmware is further operable to cause said operating system to recognize another processor module as system boot processor without shutting down said operating system.” would have been obvious for the same reasons set forth with respect to Grounds 1 and 2 and limitation [1d] and 13[a]. Ex. 1002, ¶ 185.

51. A POSITA would understand that “caus[ing] said operating system to recognize another processor module as system boot processor” is equivalent to “changing the role of boot processor to a spare processor” consistent with the specification of the ’302 Patent. The ’302 Patent specification teaches

“[c]xemplary techniques that may be utilized by firmware 18 for switching the **role** of boot processor to the hot spare.” Ex. 1001, 11:16-18 (emphas added).

52. For the reasons set forth above, including paragraphs 27-45, I disagree with Dr. Brogioli that claim 21 is rendered obvious by either the Fox-Safford- Arai combination or the Fox-Safford-Landry-Arai combination.

VIII. GROUNDS 3 AND 4 – THE PROPOSED COMBINATIONS OF FOX, SAFFORD, ARAI AND BIGBEE (GROUND 3) AND FOX, SAFFORD, ARAI, LANDRY AND BIGBEE (GROUND 4) WOULD NOT RENDER INDEPENDENT CLAIM 26 OBVIOUS TO A POSITA.

53. In my opinion, the proposed combinations of US 2005/0172164 A1 (“Fox”), Ex. 1005, US 2004/0006722 A1 (“Safford”), Ex. 1006, US 2006/0036889 A1 (“Arai”), Ex. 1007, US 5,408,647 (“Landry”), Ex. 1011, and US 2003/0126498 A1 (“Bigbee”), Ex. 1012, do not render claim 26 of the ’302 Patent obvious as the Petition and Dr. Brogioli suggest.

54. Dr. Brogioli asserts that claim limitation [26c] (“system firmware means for switching the role of boot processor to a spare processor without shutting down the system's operating system if determined that the processor for which said LOL is detected is assigned the role of boot processor”) is rendered obvious for, *inter alia*, the same reasons applied to limitation [1d] in Grounds 1 and 2. Ex. 1002, ¶ 251.

55. For the reasons set forth above in paragraphs 27-45, I disagree with Dr. Brogioli that claim 26, specifically the claimed function of “switching the role of boot processor to a spare processor without shutting down the system’s operating system,” is rendered obvious by either the Fox-Safford-Arai-Bibgee combination or the Fox-Safford-Landry-Arai-Bigbee combination.

56. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

57. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

June 20, 2025

A handwritten signature in black ink, appearing to read 'Nigel A. Jones', written over a horizontal line.

Nigel A. Jones