

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,

Petitioner,

v.

PROXENSE, LLC,

Patent Owner.

Case No. IPR2025-00562

U.S. Patent No. 9,049,188

**DECLARATION OF ANDREW WOLFE IN SUPPORT OF PETITIONER'S
REPLY TO PATENT OWNER'S RESPONSE**

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. ASSIGNMENT.....	1
III. EDUCATION AND WORK EXPERIENCE	3
IV. COMPENSATION	3
V. LEGAL PRINCIPLES.....	3
VI. LEVEL OF ORDINARY SKILL	7
VII. CLAIM TERMS AT ISSUE AND PATENT OWNER’S CONSTRUCTION	7
VIII. OPINIONS REGARDING CLAIM CONSTRUCTION.....	8
A. “Integrated PDK”	8
B. “Integrated RDC”	17
C. “Enablement Signal”	23
IX. CONCLUSION.....	25

TABLE OF EXHIBITS

Exhibit	Description
Ex-1001	U.S. Patent No. 9,049,188 (“the ’188 patent”)
Ex-1002	File History for U.S. Patent No. 9,049,188
Ex-1003	Declaration of Andrew Wolfe, Ph.D.
Ex-1004	U.S. Patent Pub. No. 2007/0245157 A1 (“Giobbi ’157”)
Ex-1005	U.S. Patent Pub. No. 2004/0255139 A1 (“Giobbi ’139”)
Ex-1006	U.S. Patent No. 9,042,819 (“Dua”)
Ex-1007	European Patent No. 1536306 A1 (“Broadcom”)
Ex-1008	Complaint, <i>Proxense, LLC v. Apple Inc.</i> , 6:24-cv-00143, W.D. Tex., filed March 18, 2024
Ex-1009	Plaintiff’s Unopposed Motion for Leave to File Amended Complaint, <i>Proxense, LLC v. Apple Inc.</i> , 6:24-cv-00143, W.D. Tex., filed October 28, 2024
Ex-1010	Order Granting Motion to Amend Complaint, <i>Proxense, LLC v. Apple Inc.</i> , 6:24-cv-00143, W.D. Tex., issued November 13, 2024
Ex-1011	Claim Construction Order, <i>Proxense, LLC v. Samsung Electronics Co., Ltd. et al.</i> , 6:21-cv-00210, W.D. Tex., issued January 18, 2022
Ex-1012	Applications and patents related to the ’188 patent
Ex-1013	Supplemental Declaration of Andrew Wolfe, Ph.D.
Ex-1014	Claim Construction Order, <i>Proxense, LLC v. Google LLC</i> , No. 6:23-cv-00320-ADA, W.D. Tex., issued January 23, 2024
Ex-1015	Claim Construction Order, <i>Proxense LLC v. Microsoft Corp.</i> , Case No. 23-cv-00319, W.D. Tex., issued May 24, 2024
Ex-1016	Joint Claim Construction Statement in <i>Proxense, LLC v. Apple Inc.</i> , No. 6-24-cv-00143 (W.D. Tex), filed December 30, 2024

Ex-1017	Proxense’s Proposed Constructions, <i>Proxense, LLC v. Google LLC</i> , No. 6:23-cv-00320 (W.D. Tex. October 17, 2023)
Ex-1018	Preliminary Infringement Contentions Exhibit D, <i>Proxense, LLC v. Google LLC</i> , No. 6:23-cv-00320 (W.D. Tex.)
Ex-1019 - Ex-1023	Reserved
Ex-1024	Proxense, LLC’s Responsive Claim Construction Brief, <i>Proxense, LLC v. Samsung Electronics Co., Ltd., et al.</i> , No. 6:21-cv-00210-ADA
Ex-1025	Reserved
Ex-1026	Proxense, LLC’s Responsive Claim Construction Brief, <i>Proxense, LLC v. Google LLC</i> , No. 6:23-cv-00320-ADA
Ex-1027 - Ex-1030	Reserved
Ex-1031	Proxense’s Reply to Apple’s Opening Claim Construction Brief in <i>Proxense, LLC v. Apple Inc.</i> , Case No. 6-24-cv-00143 (W.D. Tex), filed November 27, 2024
Ex-1032 - Ex-1033	Reserved
Ex-1034	<i>Tech Terms: What Every Telecommunications and Digital Media Professional Should Know</i> , Jeff Rutenbeck, Ph.D, 2006
Ex-1035	<i>Wiley Electrical and Electronics Engineering Dictionary</i> , Steven Kaplan, 2004
Ex-1036	<i>Modern Dictionary of Electronics</i> , Rudolf Graf, 1999
Ex-1037	<i>Newton’s Telecom Dictionary</i> , Harry Newton, 2007
Ex-1038	<i>IEEE 100 The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition</i> , 2000
Ex-1039	<i>Dictionary of Science and Technology</i> , Simon Collin, 2003

Ex-1040	<i>McGraw-Hill Dictionary of Scientific and Technical Terms, Sixth Edition, 2003</i>
Ex-1041	<i>Dictionary of Computing, Fifth Edition, 2004</i>
Ex-1042 - Ex-1046	Reserved
Ex-1047	Responsive Claim Construction Brief in <i>Proxense, LLC v. Microsoft Corporation</i> , No. 6:23-cv-00319-ADA
Ex-1048 - Ex-1049	Reserved
Ex-1050	Final Infringement Contentions in <i>Proxense, LLC v. Microsoft Corporation</i> , No. 6:23-cv-00319-ADA, served July 31, 2024
Ex-1051	Final Infringement Contentions in <i>Proxense, LLC v. Microsoft Corporation</i> , No. 6:23-cv-00319-ADA, served December 17, 2024
Ex-1052	Final Infringement Contentions in <i>Proxense, LLC v. Apple Inc.</i> , No. 6-24-cv-00143 (W.D. Tex), served March 4, 2025
Ex-1053 - Ex-1057	Reserved
Ex-1058	Nova Southeastern completes implementation of new Shark Card. November 5, 2007 (https://www.secureidnews.com/newsitem/nova-southeastern-completes-implementation-of-new-sharkcard/)
Ex-1059	<i>Microsoft Computer Dictionary</i> , Fifth Edition, 2002
Ex-1060	Payments System Research Briefing, Federal Reserve Bank of Kansas, December 2005

I, Dr. Andrew Wolfe, declare as follows:

I. Introduction

1. My name is Andrew Wolfe, and I have been retained by Duane Morris LLP, counsel for Apple Inc. (“Apple”), as an expert witness in the proceeding *Apple Inc. v. Proxense LLC*, Case No. IPR2025-00562 with respect to U.S. Patent No. 9,049,188 (“the ’188 patent”), Ex-1001.

II. Assignment

2. Counsel for Apple have asked me to provide an independent expert opinion in this proceeding.

3. I previously submitted a declaration in this proceeding—i.e., Declaration of Andrew Wolfe in Support of Petition for Inter Partes Review of U.S. Patent No. 9,049,188, Ex-1003. Unless otherwise indicated, my opinions and conclusions remain the same as presented in my prior declaration.

4. I have additionally been asked to supplement my previous declaration and testimony with my interpretation or understanding of the meaning of certain claim terms of the ’188 patent, as set forth below. Specifically, I have been asked to provide my interpretation of these terms, and whether they should be construed as “means-plus-function” elements.

5. The opinions contained in this declaration are based on my knowledge, education, and experience, and on information and facts provided to me by Apple’s

counsel regarding, for example, the applicable legal standards, as well as my investigation and study of relevant materials.

6. I have reviewed and considered various materials in these efforts, including the following: (1) my own knowledge and experience, including my work experience, (2) the '188 patent, (3) the prosecution history of the '188 patent, (4) the claim construction briefs and claim construction orders in various cases and proceedings involving the '188 patent and related patents, (5) Patent Owner Response ("POR"), (6) various dictionary definitions, (7) other material identified in the table of exhibits, and (8) the materials and information identified and cited in my prior declaration submitted in this proceeding. Additional material and information that I reviewed and considered may be cited or referenced in this declaration.

7. I may rely upon these materials, my knowledge and experience, and/or additional materials to rebut arguments raised by Proxense, LLC ("Proxense" or "Patent Owner"). Further, I may also consider additional documents and information in forming any necessary opinions, including documents that may not yet have been provided to me.

8. My analysis of the materials produced in this investigation is ongoing, and I will continue to review any new material as it is provided. This declaration, along with my prior declaration, represent only those opinions I have formed to

date. I reserve the right to revise, supplement, and/or amend my opinions stated herein based on new information and my continuing analysis of the materials already provided.

III. Education and Work Experience

9. I have previously described my education and work experience in my prior Declaration in Support of Petition for *Inter Partes* Review of U.S. Patent No. 9,049,188 in IPR2025-00562, Ex-1003.

IV. Compensation

10. I am being compensated at my usual and customary hourly rate of \$750 for my expert services in connection with this proceeding. My compensation does not depend in any way upon the outcome of this proceeding, the opinions I express, or the content of my testimony.

V. Legal Principles

11. I am not a lawyer, and I do not intend to offer any opinions directed specifically to the correct application of the law. However, I have discussed legal issues regarding claim construction with Apple's counsel, and I have been provided with, among other things, the instructions contained within this section.

12. I have previously described certain aspects of the law that I have been informed about as it relates to my opinions. Ex-1003, at ¶¶ 16-22.

13. For purposes of this declaration, I have been informed about certain additional aspects of the law as it relates to my opinions.

14. I understand that a patent must include one or more claims that distinctly claim the subject matter that the applicant(s) regard as the invention.

15. I understand that the relevant inquiry in claim construction is how a person of ordinary skill in the art (“POSITA”) would have understood the claim terms at the alleged time of the invention, in light of the patent specification, the prosecution history, and any other relevant evidence. I understand that a POSITA is assumed to have read the claim terms in the context of the entire patent, including the specification, and its prosecution history. I understand that the claims, the specification, and the prosecution history are considered “intrinsic evidence” for claim construction.

16. I understand that first step in claim construction is to look to the language of the claims themselves. I have been informed that it is a “bedrock principle” of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude. I understand that a claim term should be construed in a manner consistent with its “ordinary and customary meaning,” which is the meaning that the term would have to a POSITA. I understand that the ordinary and customary meaning of a claim term must consider the context of the claim’s overall language.

17. I understand that a court, in determining the meaning of claim terms, may also consider extrinsic evidence, such as expert testimony, dictionaries, or technical treatises. I understand that while extrinsic evidence may aid the claim construction analysis, it cannot be used to contradict the plain and ordinary meaning of a claim term as defined within the intrinsic record.

18. I understand that in some situations an element in a patent claim may be expressed as a means or step for performing a specified function without reciting the structure, material, or acts in support of that function. I understand that such a claim element may be referred to as a “means-plus-function” element, and that the applicable U.S. Patent Law is Section 112, paragraph 6 (“§112, ¶6”).

19. I further understand that for such a means-plus-function element, the element is to be construed to cover the corresponding structure, material, or acts described in the patent specification for performing that function and equivalents. Thus, I understand that in the case of a means-plus-function element, the scope of the claim element is limited to only structure that is both actually disclosed in the patent specification and clearly linked to the claimed function(s).

20. I understand that if a claim term does not include the words “means” or “step for,” there is a rebuttable presumption that such claim term is not a means-plus-function element.

21. I understand that even if a claim term does not use the words “means” or “step for,” the presumption against interpreting such claim term as a means-plus-function element can be overcome if a POSITA would understand that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function. I understand that a “nonce term” (a structureless term) may take the place of “means” or “step for” in a means-plus-function claim term. I understand that when evaluating whether a claim term is a means-plus-function element, the essential inquiry is whether the words of the claim are understood by a POSITA to have a sufficiently definite meaning as the name for structure. I understand that such determination must be made on an element-by-element basis, and in light of evidence intrinsic and extrinsic to the patent.

22. I understand that if a claim element is found to be a means-plus-function claim element, there is a two-part analysis that involves: (1) identifying the function(s); and (2) identifying the corresponding structure from the specification that performs the function.

23. I understand that for patents involving a computer-implemented invention in which the inventor has used means-plus-function claiming, the courts have consistently required that the structure disclosed in the specification be more than simply a general purpose computer or microprocessor. I understand that for a

means-plus-function element directed to a computer-implemented function, the patent specification must disclose an algorithm for performing the claimed function(s) in order to disclose sufficiently definite structure. I understand that such an algorithm may be expressed as a mathematical formula, in prose, or as a flow chart, or in any other manner that describes with reasonable certainty the way that such algorithm specifically performs the claimed function(s). I understand that any such algorithm must be clearly linked in the specification to the function recited in the claim to qualify as a corresponding structure. I further understand that when there are multiple claimed functions, the corresponding structure must be clearly linked to and be sufficiently definite for performing all such claimed functions.

VI. Level of Ordinary Skill

24. In my opinion a POSITA at the time of the purported invention would have had a bachelor's degree in computer or electrical engineering or an equivalent degree, and at least three years of experience in the field of encryption and security or equivalent experience. This level of skill is approximate, and more experience in one area would compensate for less experience in another area and vice versa.

VII. Claim Terms at Issue and Patent Owner's Construction

25. Counsel for Apple has informed me that Patent Owner asserts that certain claim terms of the '188 patent should be construed as means-plus-function elements.

26. In particular, I have been informed that Patent Owner argues that claims 1 and 10 recite the function of “enabling one or more of an application, a function and a service,” and that such function is attributable to an “integrated PDK” or an “integrated RDC” in claim 1 and is attributable to an “enablement signal” in claim 10. POR, 6-7, 14-15.

27. I have further been informed that Patent Owner argues that the claim terms “integrated RDC,” “integrated PDK,” and “enablement signal” are not “recognized by those skilled in the art as sufficiently definite structures for performing the function,” and thus should be narrowly construed to cover a particular algorithm in the ’188 patent specification. POR, 16, 32, 36.

VIII. Opinions Regarding Claim Construction

28. Based on my knowledge and experience, the materials that I reviewed, and my analysis, I believe that a POSITA would have understood the claim terms “integrated PDK,” “integrated RDC,” and “enablement signal” to have sufficiently definite structure as used in the context of the ’188 patent to perform the function of “enabling one or more of an application, a function and a service,” such that these terms should not be construed as means-plus-function elements.

A. “Integrated PDK”

29. The term “integrated personal digital key (PDK)” or “integrated PDK” appears in independent claim 1.

30. In my prior declaration, I stated that it was my understanding that in a prior proceeding—i.e., *Samsung Electronics America, Inc. v. Proxense, LLC*, IPR2021-01438, filed on August 26, 2021 (the “Samsung IPR”)—the Board determined that the term “Personal Digital Key (PDK)” for “storing local, secured biometric information” for authenticating a user, as claimed, encompasses a local memory for storing biometric information for authenticating a user, wherein the information is secured. I further understand that in the litigation between Samsung and Proxense, *Proxense, LLC v. Samsung Electronics Co., Ltd. et al.*, No. 6:21-CV-00210-ADA (W.D. Tex) (the “Samsung Litigation”), the district court construed the claim term “personal digital key” to mean “[a]n operably connected collection of elements including an antenna and a transceiver for communicating with a RDC and a controller and memory for storing information particular to a user.” Ex-1003, ¶ 27.

31. I also understood that Apple, as the petitioner to this *inter partes* review, submitted that express interpretations of the challenged claims are not required to resolve this petition, and that at that time I saw no reason to disagree with such position. Ex-1003, ¶ 27.

32. I have been informed that, in pending district court litigation, Apple and Proxense have agreed to construe “personal digital key (PDK)” to mean “an

operably connected collection of elements including an antenna and a transceiver for communicating with a RDC and a controller and memory for storing information particular to a user.” Ex-1016.

33. In the POR, Patent Owner now takes the position that the term “integrated PDK” (Personal Digital Key) “is not recognized by those of ordinary skill in the art to provide a sufficiently definite structure for performing the function of ‘enabling one or more of an application, a function and a service,’” and thus “claim 1 invokes § 112, ¶ 6.” POR, 16.

34. I have further reviewed the intrinsic evidence for the ’188 patent, as well as the extrinsic evidence including: the POR; the claim construction briefs and claim construction orders in various cases and proceedings involving the ’188 patent and related patents; the declarations, opinions, and testimony of various experts or other people regarding the claim construction of the ’188 patent and related patents; and various dictionary definitions.

35. A POSITA would not have understood the term “PDK” or “integrated PDK” to be a structureless nonce term. To the contrary, a POSITA would have understood that the term “PDK” alone is a definite structure, and that such structure encompasses at least “a collection of circuit components that includes an antenna, a transceiver, and a controller and memory for storing information particular to a user.”

36. Regarding the intrinsic evidence, within the claim itself, the “PDK” is defined to “stor[e]...information,” indicating that it includes a memory structure, and this is supported by the ’188 patent specification’s examples of a PDK. These examples from the specification include:

- “PDK 102 comprises a memory 210 control logic 250, wireless application 260 and a transceiver 270.... The memory 210 can be a read-only memory, a once programmable memory, a read/write memory or any combination of memory types, including physical access secured and tamperproof memories.” Ex-1001, 5:42-6:7.
- “The PDK 102 is a compact, portable uniquely identifiable wireless device typically carried by an individual. The PDK 102 stores digital information in a tamper-proof format that uniquely associates the PDK 102 with an individual.” Ex-1001, 3:48-62.

An example of the PDK is shown in FIG. 2 of the ’188 patent, reproduced below:

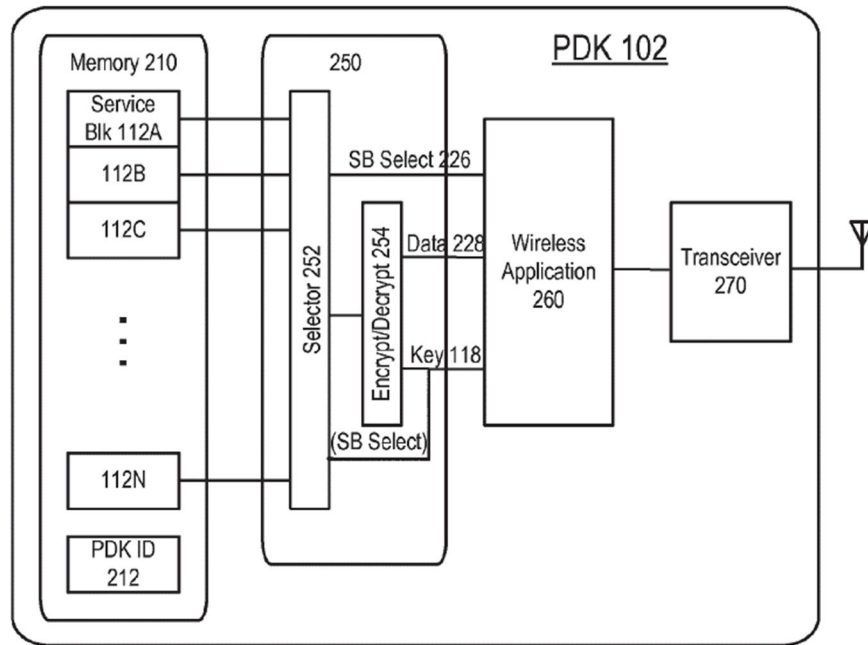


FIG. 2

Ex-1001, FIG. 2.

37. With respect to the extrinsic evidence, the use of memory among other components in a PDK is also found in the references and prior art asserted against the '188 patent. For example, Giobbi-139 and Giobbi-157 both mention a PDK, the components, and example use cases. Ex-1006, ¶¶ [0026]-[0029], [0035]-[0048], [0063]; Ex-1007, ¶¶ [0010], [0071]-[0078]. Giobbi-157 shows a PDK in FIG. 2 (reproduced below):

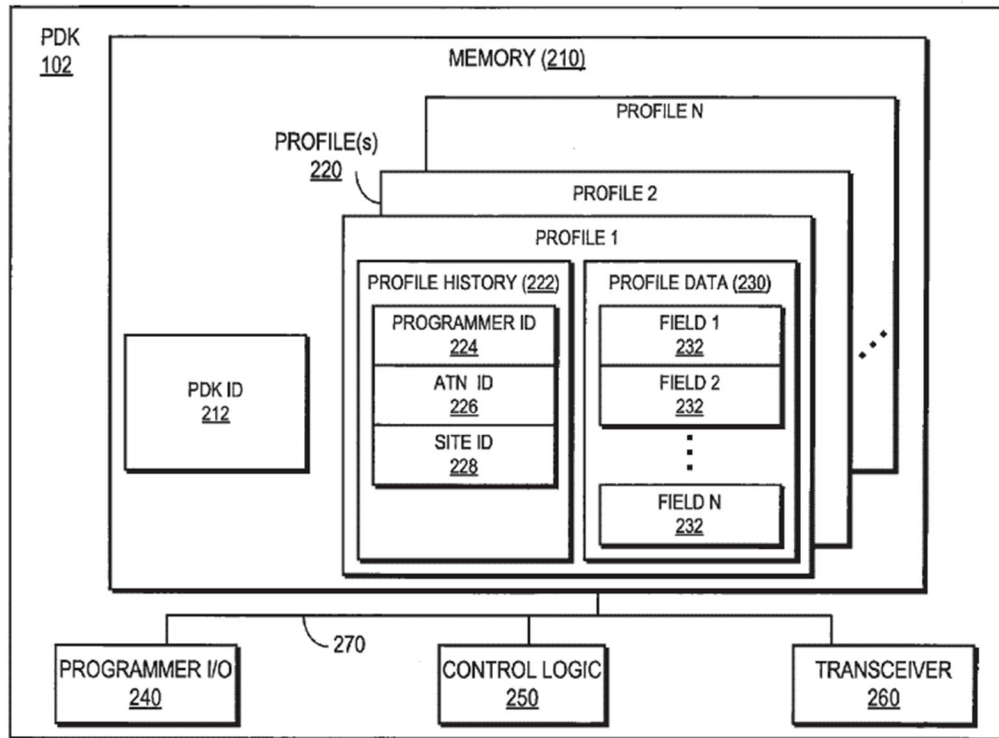
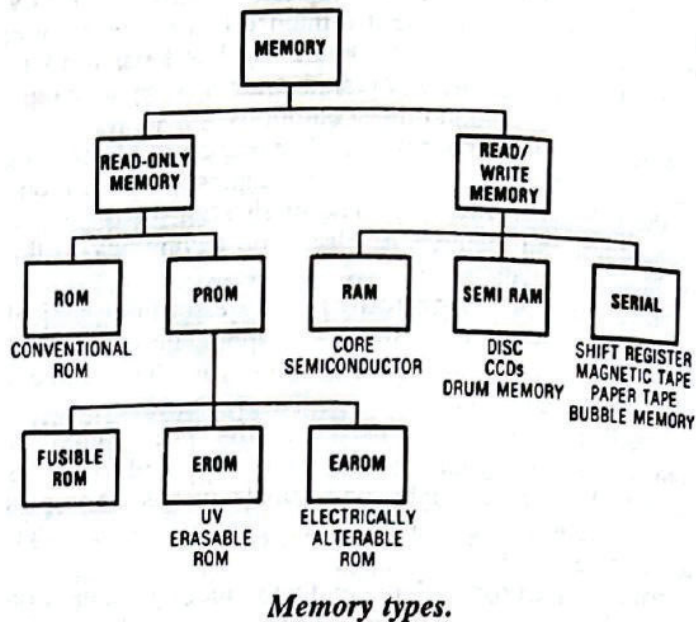


FIG. 2

Ex-1006, FIG. 2.

38. The term “memory” has a definite structure. For example, memory is defined as the “capacity of a computer or integrated computer system for short and medium-term retention of digital data” and speaks to a broad class of structures used to retain data for various purposes. Ex-1034, 5. For example, “[m]emory integrated circuit” is defined as “flash-memory chips. . . [a]lso called memory IC [integrated circuit], IC memory, or chip memory.” Ex-1035, 6. Various kinds of memory, including both integrated and non-integrated memory, are illustrated in the figure below.



Ex-1036, 6. Memory that is ordinarily integrated into an IC includes RAM (random access memory) and ROM (read-only memory) as illustrated above. Memory that is not integrated into an IC includes Disc and Drum memory.

39. A POSITA would have understood that the term “PDK,” as recited in the claims of the ’188 patent, can include any of multiple varieties of memory structures for storing information. A POSITA would have also recognized that such memory structures can participate in “enabling one or more of an application, a function, and a service” by simply storing information such as access information, necessary to access or otherwise invoke that application, function, or service. The ’188 patent specification describes an example of RFID systems, where an RFID tag is a structure such as a microchip that stores information in memory and

responds through an antenna when probed. Ex-1001, 1:30-62; Ex-1037, 3. Accordingly, the information of the RFID tag is stored in memory and used to enable a function. *Id.* Thus, a POSITA would have understood that the “PDK” stores information in memory where the information and memory are used in enabling functions similar to the concept of the information stored in memory of an RFID tag enables a function. *Id.*

40. Furthermore, the claims here recite more than just a “PDK” with memory. The claims recite an “integrated personal digital key (PDK).” A POSITA would have understood that an “integrated” memory is a subclass of memory structures that store information locally on the device (“integrated”). Ex-1035. Second, a POSITA would have understood that a “digital” key, in this context, denotes a type of storage device, i.e., a digital, rather than analog, storage device. These adjective qualifiers of “integrated” and “digital” also indicate structure by narrowing the scope of the claim feature to particular subsets of “memory” and further providing structure to the PDK.

41. The claim requires and the specification of the ’188 patent describe that the PDK is “capable of communicating wirelessly.” Ex-1001, claim 1, 5:42-6:7, 3:48-62. The specification states, for example: “The PDK 102 is a compact, portable uniquely identifiable wireless device typically carried by an individual. The PDK 102 stores digital information in a tamper-proof format that uniquely

associates the PDK 102 with an individual.” Ex-1001, 3:48-62. A POSITA would have understood that the structure provided by the PDK for the ability to wirelessly communicate as sufficient, especially in the context of the claims and specification.

42. In the context of short-range communication devices used to enable a function, application, or service, (e.g., RFID) as contemplated by the ’188 patent, a POSITA would have understood that a memory can, for example, enable a function, application, or service through a basic exchange of locally stored information between the memory and another device seeking access to the stored information to authorize the enabling, i.e., the activation of the application, function, or service. Ex-1001, claims 1 and 10. For example, the definition of “activate” is “[t]o start an operation, usually by application of an appropriate enabling signal” and this signal would either be generated from memory or carry the information stored within the memory. Ex-1036. Further, RFID tags were capable of storing in memory “reference key[s]” for such activation. Ex-1037, 3. One example is the use of “a key chain wand which is waved near a reader to effect payments,” which was a common form of structure in widely used systems prior to the earliest priority date of the ’188 patent (e.g., SpeedPass). Ex-1035, 8. Another example includes the use of Common Access Cards (CACs) to enable access to functions, services, or buildings. Moreover, each of these devices, at times, acts as a “personal digital key.” For example, before the earliest priority date of the ’188 patent, a CAC or smart card

would contain personal digital information (an individual’s credentials) stored on the memory of the card. This information could be used for several functions including enabling access to a computer or physical access to a building—thus acting as a “personal digital key.” Ex-1058, 1 (“contactless chip technologies [allow] for fast and highly secure payments and access to systems and services.”). A POSITA would have understood and found obvious the “personal” nature of the digital data in these examples, because each have an example use case of making a purchase. If the data were not personal to the user, the system would not be enabled to complete the purchase or would potentially charge the incorrect user’s card. Thus, these examples demonstrate at least some embodiments and the functionality of “personal digital key.”

43. For at least the reasons discussed above, a POSITA would have understood that the claim term “integrated personal digital key (PDK) for storing information and capable of communicating wirelessly” recites sufficiently definite structure for performing the function of “enabling one or more of an application, a function and a service.”

B. “Integrated RDC”

44. The term “integrated RDC,” where “RDC” is a “receiver-decoder circuit,” appears in independent claim 1.

45. In my prior declaration, I stated that it was my understanding that Apple, as the petitioner to this *inter partes* review, submitted that express interpretations of the challenged claims are not required to resolve this petition, and that at that time I saw no reason to disagree with such position. Ex-1003, ¶ 27.

46. I have been informed that the district court in the Western District of Texas construed the claim term “receiver-decoder circuit” to mean “A component or collection of components, capable of wirelessly receiving data in an encrypted format and decoding the encrypted data for processing.” Ex-1014; Ex-1015.

47. I have been informed that, in pending district court litigation, Apple and Proxense have agreed to construe “receiver-decoder circuit” to mean “a collection of circuit components capable of wirelessly receiving data in an encrypted format and decoding the encrypted data for processing.” Ex-1016.

48. In the POR, Patent Owner now takes the position that the term “integrated RDC” (receiver-decoder circuit) “is not recognized by those of ordinary skill in the art to provide a sufficiently definite structure for performing the function of ‘enabling one or more of an application, a function and a service,’” and thus “claim 1 invokes § 112, ¶ 6.” POR, 32.

49. I have further reviewed the intrinsic evidence for the ’188 patent, as well as the extrinsic evidence including: the POR; the claim construction briefs and claim construction orders in various cases and proceedings involving the ’188 patent

and related patents; the declarations, opinions, and testimony of various experts or other people regarding the claim construction of the '188 patent and related patents; and various dictionary definitions.

50. A POSITA would not have understood the term “RDC” or “integrated RDC” to be a structureless nonce term. To the contrary, a POSITA would have understood that the term “RDC” alone is a definite structure, and that such structure encompasses at least “a component or collection of components, capable of wirelessly receiving data in an encrypted format and decoding the encrypted data for processing.”

51. Regarding the intrinsic evidence, claim 1 itself recites that the “integrated RDC” is “for communicating wirelessly with at least one external PDK within a proximity zone” and is “coupled to the integrated PDK” as well as “at least one other component.” Ex-1001, claim 1. A POSITA would understand that this claimed arrangement for the “integrated RDC”—in addition to the structure of the “RDC” alone—is sufficiently definite structure for performing the function of “enabling one or more of an application, a function and a service.”

52. In the context of the specification’s example use cases, and example components, a POSITA would have understood that a “receiver-decoder circuit” or “reader-decoder circuit” (“RDC”) speaks to a class of structures used to communicate wirelessly. Ex-1001, 1:40-62, 7:4-22. As the '188 patent specification

explains, for example: “The RDC 304 provides the wireless interface to the PDK 102. Generally, the RDC 304 wirelessly receives data from the PDK 102 in an encrypted format and decodes the encrypted data for processing by the processor 306.” Ex-1001, 7:10-13.

53. Regarding extrinsic evidence, a POSITA would have understood, for example, that “wireless cards” were known before the earliest priority date of the ’188 patent and consisted of hardware enabling a computer to “connect [] to a wireless network (local or long distance), which connect to digital RAM (e.g., from digital cameras) or cards that drive several external monitors.” Ex-1037, 5. More broadly, “transceivers” were well known examples of wireless communication interfaces. For example, a transceiver is defined as: “[a] device that both transmits and receives data . . . [and] that connects a host interface to a network.” Ex-1038, 7. In addition, a POSITA would have understood the “receiver/reader” and “decoder” to denote definite structure. Ex-1035, 4 (“decoder 1. A circuit, device, or program which converts that which has been encoded back into its original form. . . . A circuit which responds to a given coded signal, while rejecting all others”); Ex-1035, 8 (“RFID Reader[:] In an RFID system, a device which sends an interrogating signal which is responded to by an RFID tag.”). Further, based on the definitions of “wireless,” “wireless communication,” “transceiver,” “communications interface equipment,” “decoder,” “receiver,” and “RFID reader” a POSITA would have

recognized that an RDC or “a wireless communication interface” implicates a variety of structures used for wireless communication. Ex-1059, 3-4; Ex-1035, 11-12; Ex-1038, 5-7. In view of the above definitions alone, a POSITA would have understood that a “RDC” denotes structure.

54. In the context of the '188 Patent's RFID background, a POSITA would have understood one such “receiver-decoder circuit,” “reader-decoder circuit” or “interface” structure to be part of an RFID system. A POSITA would have had an understanding of the components of an RFID system that existed prior to the earliest priority date of the '188 patent. This is shown by various evidence. For example, the *Wiley Electrical and Electronics Engineering Dictionary* defines an RFID tag as “a transponder within an RFID system . . . usually in the form of an IC [integrated circuit], [that] responds to interrogating signals arriving from an RFID reader.” Ex-1035, 7-8. This definition uses an example of “a key chain wand which is waved near a reader to effect payments,” which was a common form of structure in widely used systems prior to the earliest priority date of the '188 patent (e.g., SpeedPass. Ex-1035, 8. A POSITA would have understood that at least one example of an RDC would perform similarly to an RFID reader in order to communicate with a RFID tag or PDK.

55. A POSITA also would have readily recognized or understood that the RDC or “wireless communication interface” is often used to “enable one or more

of an application, a function, and a service” by enabling wireless communication of information, such as access information, necessary to access or otherwise invoke that application, function, or service. Ex-1001, 1:40-62, 7:4-22. The ’188 patent describes, for example: “The RDC 304 provides the wireless interface to the PDK 102. Generally, the RDC 304 wirelessly receives data from the PDK 102 in an encrypted format and decodes the encrypted data for processing by the processor 306.” Ex-1001, 7:10-13. The use of a wireless communication interface for short range communications between wireless devices was common for enabling an application, a function, or a service, and the class of structures implicated by the recited wireless communication interface would have been readily recognized by a POSITA to include, in addition to the noted RFID tags, garage door openers, television remotes, gate openers, Common Access Cards (CACs), and SpeedPass. As discussed previously, each of these devices communicates wirelessly with at least one external device within range (e.g., a proximity zone) to enable an application, function, or service. Ex-1060, 2.

56. For at least the reasons discussed above, a POSITA would have understood that the claim term “integrated RDC communicating wirelessly with the at least one external device within a proximity zone” recites sufficiently definite structure for performing the function of “enabling one or more of an application, a function and a service.”

C. “Enablement Signal”

57. The term “enablement signal” appears in independent claim 10.

58. In my prior declaration, I stated that it was my understanding that Apple, as the petitioner to this *inter partes* review, submitted that express interpretations of the challenged claims are not required to resolve this petition, and that at that time I saw no reason to disagree with such position. Ex-1003, ¶ 27.

59. I have been informed that the district court in the Western District of Texas decided that the claim term “enablement signal” requires no construction. Ex-1014, Ex-1015.

60. In the POR, Patent Owner now takes the position that “[t]he term ‘enablement signal’ is not recognized by those of ordinary skill in the art to provide a sufficiently definite structure for performing the function of ‘enabling one or more of an application, a function and a service,’ rather it is a meaningless nonce merely reciting the function to be performed,” and thus “claim 1 invokes § 112, ¶ 6.” POR, 36.

61. I have further reviewed the intrinsic evidence for the ’188 patent, as well as the extrinsic evidence including: the POR; the claim construction briefs and claim construction orders in various cases and proceedings involving the ’188 patent and related patents; the declarations, opinions, and testimony of various experts or

other people regarding the claim construction of the '188 patent and related patents; and various dictionary definitions.

62. Contrary to Patent Owner's position, a POSITA would not have understood the term "enablement signal" to be a meaningless nonce term.

63. In the context of claim 10, "enablement signal" appears in the larger term "generating an enablement signal enabling one or more of an application, a function and a service." Ex-1001, claim 10.

64. The term "enablement signal" derives its name from the function it performs, which is "enabling one or more of an application, a function and a service." I understand that defining an element in functional terms is not sufficient to convert a claim element containing that term into a means-plus-function term.

65. Moreover, a POSITA would have understood the term "generating an enablement signal" is a definite act or structure. Before the earliest priority date of the '188 patent, the use of signals to enable functions was well known to a POSITA. Ex-1036, 3, ("activate - To start an operation, usually by application of an appropriate enabling signal." (emphasis added)). Further evidence establishing the well-known nature and structure of the term "enablement signal" include:

- "enabling signal" is defined as "*noun* a signal that starts a process or allows one to take place." Ex-1039, 3.

- “enable” is defined as “[t]o initiate the operation of a device or circuit by applying a trigger signal or pulse.” Ex-1040, 3.
- “enable” is defined as “[t]o selectively activate a device or function... selective operation can be achieved by an enabling action—such as a signal...” EX-1041, 3.

66. Accordingly, a POSITA would have understood an “enablement signal” to be capable of enabling certain functions. The enablement signal does what it says — it “enables” a function, and a POSITA would have been more than capable of using her/his general knowledge and skill to design such a signal. As one example, the SpeedPass system operating two years before the earliest priority date of the ’188 patent communicated wirelessly to provide a signal for enabling the function of paying for fuel. Ex-1060 (“SpeedPass enabled ExxonMobile’s customers to pay at the pump with the wave of a key fob”) (emphasis added).

67. For at least the reasons discussed above, the claim term “enablement signal” recites sufficiently definite structure for performing the function of “enabling one or more of an application, a function and a service.”

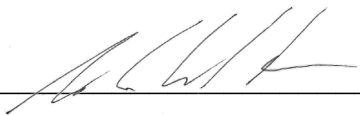
IX. CONCLUSION

68. Based on my further review of the ’188 patent, its prosecution history, the prior art, the claim construction briefs and claim construction orders in various cases and proceedings involving the ’188 patent and related patents, the declarations

and testimony of various experts or other people regarding the claim construction of the '188 patent, it is my opinion that a POSITA would have understood the claim terms “integrated RDC,” “integrated PDK,” and “enablement signal” to have sufficiently definite structure, such that these terms should not be construed as means-plus-function elements.

69. I declare under penalty of perjury that the foregoing is true and correct. I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and 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.

Executed March 17, 2026

/s  _____