

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	David L. Brown	Attorney Docket No.:	42342-0134IP1
U.S. Patent No.:	8,646,042		
Issue Date:	February 4, 2014		
Appl. Serial No.:	13/445,825		
Filing Date:	April 12, 2012		
Title:	HYBRID DEVICE HAVING A PERSONAL DIGITAL KEY AND RECEIVER-DECODER CIRCUIT AND METHODS OF USE		

SECOND DECLARATION OF DR. PATRICK TRAYNOR

I, Patrick Gerard Traynor, of Gainesville, Florida, declare that:

INTRODUCTION AND SCOPE OF WORK

1. On February 14, 2024, I provided an initial Declaration in the IPR2024-00573 proceeding.

2. I am being compensated at my standard consulting rate for my time providing my independent analysis, plus reasonable out-of-pocket expenses. I have received no additional compensation for my work in this matter, and my compensation does not depend upon the content of my opinions, any testimony that I may provide, or the ultimate outcome of the matter. All of the opinions set forth in this declaration are my own.

3. In writing this Declaration, I have considered the following: my own knowledge and experience, including my work experience in mobile systems and networks; my experience in teaching those subjects; and my experience in working

with others involved in those fields. In addition, I have analyzed the following publications and materials, in addition to other materials I cite in my declaration:

- U.S. Patent No 8,646,042 (MS-1001), and its accompanying prosecution history (MS-1002)
- U.S. Patent Publication No. 2007/0245157 A1 (“Giobbi-157”) (MS-1005)
- U.S. Patent Publication No. 2004/0255139 A1 (“Giobbi-139”) (MS-1006)
- U.S. Patent No. 9,042,819 (“Dua”) (MS-1007)
- European Patent No. EP 1 536 306 A1 (“Broadcom”) (MS-1008)
- Claim Construction Order, *Proxense, LLC v Samsung Electronics Co., Ltd*, 6:21-CV-00210-ADA, W.D. Tex., filed January 18, 2022 (MS-1009)
- Provisional Application No. 60/798,843 (MS-1010)
- Microsoft’s Opening Claim Construction Brief, 6:23-cv-00319, W.D. Tex., filed November 6, 2023 (MS-1013)
- *Tech Terms: What Every Telecommunications and Digital Media Professional Should Know*, Jeff Rutenbeck, Ph.D, 2006 (MS-1020)
- *Wiley Electrical and Electronics Engineering Dictionary*, Steven Kaplan, 2004 (MS-1021)
- *Modern Dictionary of Electronics*, Rudolf Graf, 1999 (MS-1022)
- *Newton’s Telecom Dictionary*, Harry Newton, 2007 (MS-1023)
- *IEEE 100 The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition*, 2000 (MS-1024)
- *Microsoft Computer Dictionary, Fifth Edition*, 2002 (MS-1025)

- *Dictionary of Science and Technology*, Simon Collin, 2003 (MS-1026)
- *McGraw-Hill Dictionary of Scientific and Technical Terms, Sixth Edition*, 2003 (MS-1027)
- *Dictionary of Computing, Fifth Edition*, 2004 (MS-1028)
- Payments System Research Briefing, Federal Reserve Bank of Kansas, December 2005 (MS-1029)
- Deposition of Dr. Jakobsson, December 20, 2024 (MS-1030)
- Nova Southeastern completes implementation of new Shark Card. November 5, 2007 (<https://www.secureidnews.com/news-item/nova-southeastern-completes-implementation-of-new-shark-card/>) (MS-1038)

SUMMARY OF OPINIONS

4. Unless otherwise indicated, my opinions and conclusions remain the same as presented in my original declaration (MS-1003).

5. I have additionally been asked to supplement my previous testimony with my interpretation of the following terms of the '042 patent set forth below. Specifically, I have been asked to provide my interpretation of these terms as they relate to 35 U.S.C. §112, ¶6 (also referred to as means-plus-function (MPF)), which I have been informed applies when claim limitations are recited in terms of their function instead of their structure.

6. Counsel has informed me that a rebuttable presumption that MPF treatment does not apply is created when a claim does not recite the phrase “means for,” and that to overcome this presumption, the claim must fail to recite sufficiently definite structure, as understood by a POSITA. I understand that a

“nonce term” (a structureless term) may take the place of “means for” in a MPF claim term. I further understand that the claim as a whole must be considered when evaluating if a limitation recites sufficiently definite structure. I have additionally been informed that, for terms that are subject to interpretation as MPF, the corresponding structure in the specification is what defines the scope of the limitation. I have also been informed that, for MPF limitations that are performed by a generic computing device or processor, the corresponding structure includes a processor programmed to perform an algorithm to perform the recited function as disclosed in the specification.

7. Based on my knowledge and experience, I believe that a POSITA would have understood the below terms to have sufficiently definite structure, such that a MPF interpretation is improper.

- (1) “Integrated PDK.”
- (2) “Integrated RDC.”
- (3) “Enablement signal.”

**THE CLAIM TERMS AT ISSUE RECITE SUFFICIENTLY
DEFINITE STRUCTURE**

I. “Integrated personal digital key (PDK) for storing information and capable of communicating wirelessly”

8. I have reviewed Proxense’s arguments for MPF treatment of this claim term, which are reproduced below:

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”. Jakobsson Decl., ¶ 18. Accordingly, claim 1 invokes § 112, ¶ 6. POR, 8 (emphasis added).

Claim 2 recites:

an integrated personal digital key (PDK) for storing information and capable of communicating wirelessly with at least one external receiver-decoder circuit (RDC);

9. The term “personal digital key” or “PDK” alone has a definite structure. For example, the “PDK” is defined in the claim to “stor[e] information,” indicating that it includes a memory structure, and this is supported by the specification’s examples of a PDK. MS-1001 5:41-6:6 (“The PDK 102 comprises a memory 210, control logic 250, wireless application 260 and a transceiver 270 . . . [t]he 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.”), 3:46-61 (“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.”). The use of memory among other components in a PDK is also found in the references and prior art asserted against

the '042 Patent, where Giobbi-139 and Giobbi-157 mention a PDK, the components, and example use cases. MS-1005, ¶[0063], *see also* ¶¶[0026]-[0029], [0035]-[0048]; MS-1006, ¶¶[0010], [0071]-[0078]; MS-1001 5:41-6:6, 3:46-61; *Compare* MS-1001, FIG. 2 with MS-1005, FIG. 2.

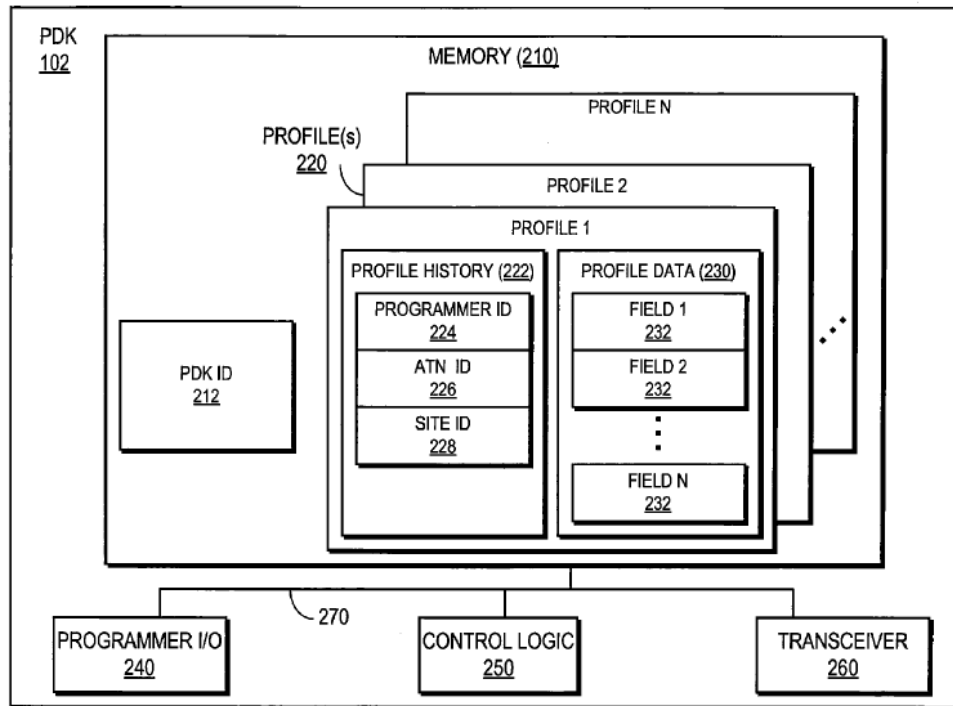


FIG. 2

MS-1005, FIG. 2

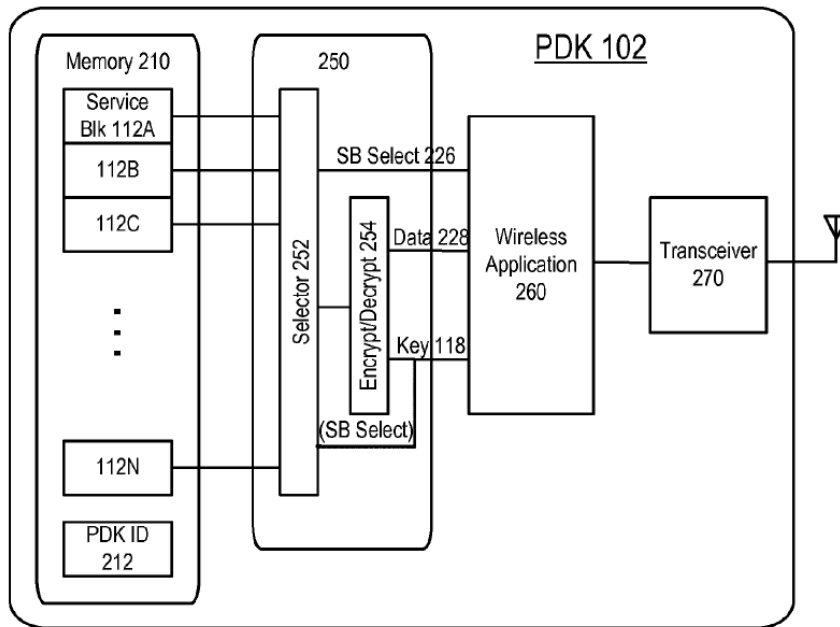


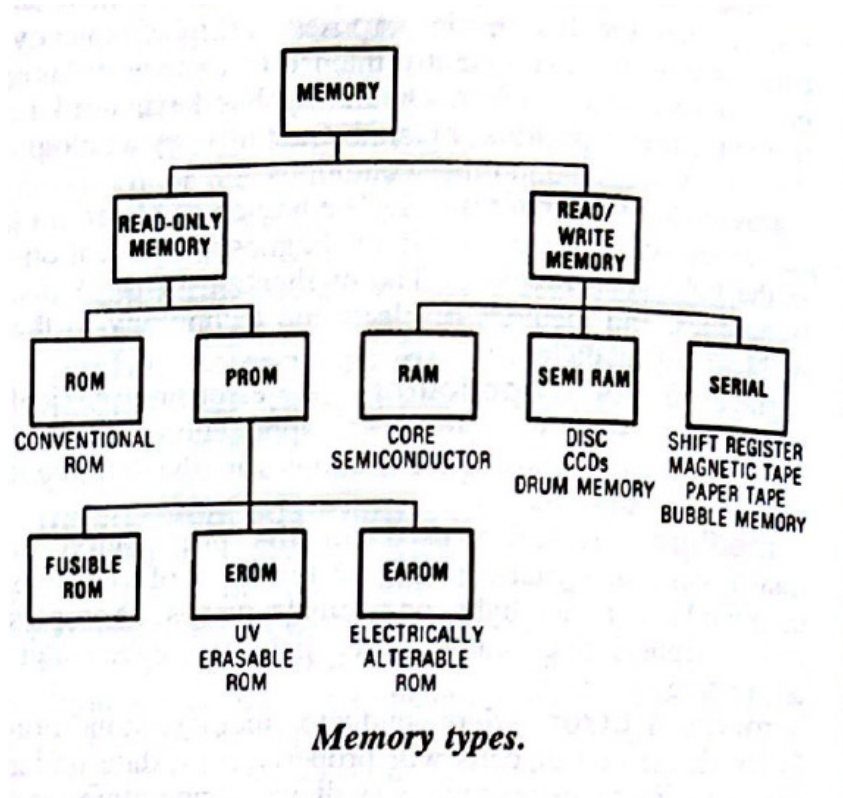
FIG. 2

MS-1001, FIG. 2.

10. 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. MS-1020, 5¹. For example, “[m]emory integrated circuit” is defined as “flash-memory chips. . . [a]lso called memory IC [integrated circuit], IC memory, or chip memory.” MS-1021, 6. The below figure further demonstrates examples of memory that is not integrated (e.g., discs) and

¹ Unless otherwise stated, pagination references the PDF page.

memory that would be physically part of, i.e., integrated into, an IC (e.g., Random Access Memory (RAM)).



MS-1022, 6.

11. Not only would a POSITA have understood that “PDK,” as recited in the claim, includes any of multiple varieties of memory structures for storing information, but a POSITA would have 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. For example, the ’042 patent describes RFID systems, and an RFID tag is a structure such as a

microchip that stores information in memory and responds through an antenna when probed. MS-1001, 1: 28-61; MS-1023, 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 in 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.*

12. Even further, the claims here recite more than just a “PDK” with memory, rather, an “integrated personal digital key (PDK).” First, an “integrated” memory would have been understood to represent a subclass of memory structures that store information locally to the device (“integrated”). *Id.*; Pet., 4, 6-12, 27-29, 35. Second, a “digital” key denotes a type of storage device, i.e., a digital, rather than analog, storage device. These adjective qualifiers also indicate structure by narrowing the scope of the claim feature to particular subsets of “memory” and further providing structure to the PDK.

13. Additionally, the claim and the specification describe the PDK is “capable of communicating wirelessly.” MS-1001, claim 1, 5:41-6:6, 3:46-61 (“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.”). The structure provided by the ability to wirelessly communicate would have been

understood by a POSITA as sufficient, especially in the context of the claims and specification.

14. In the context of short-range communication devices used to enable a function, application, or service, (e.g., RFID) as contemplated by the '042 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. MS-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. MS-1019. Further, RFID tags were capable of storing in memory “reference key[s]” for such activation. MS-1022, 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 Critical Date (e.g., SpeedPass or EZ-Pass). MS-1021, 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, prior to the Critical Date, 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.” MS-1038, 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 a “personal digital key.”

15. Accordingly, 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.”

II. Integrated RDC communicating wirelessly with the at least one external device within the proximity zone

16. I have reviewed Proxense’s arguments for MPF treatment of this claim term, which are reproduced below:

The term “integrated RDC” 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.” Jakobsson Decl., ¶¶ 18 and 53. Accordingly,

claim 1 invokes § 112, ¶ 6. POR, 18-19 (citing EX-2016. ¶¶18 and 53).

Claim 1 recites:

an integrated RDC for communicating wirelessly with at least one external PDK within a proximity zone, the integrated RDC coupled to the integrated PDK by a first signal line for communication, the integrated RDC coupled to at least one other component of the hybrid device by a second signal line, one or more of the integrated RDC and integrated PDK enabling one or more of an application, a function, and a service on one or more of the hybrid device and a device associated with the external RDC.

17. An “integrated [receiver-decoder or reader-decoder circuit²] RDC for communicating wirelessly with at least one external PDK within a proximity zone” and coupled to at least two internal components has sufficiently definite structure for performing the function of “enabling one or more of an application, a function and a service.” In the context of the specification’s example use cases, and example components, a POSITA would have understood that a “receiver-decoder

² The specification appears to use “receiver-decoder” and the claims use “reader-decoder”. MS-1001 1:65-2:20 (“receiver-decoder”), Claim 1 (“reader-decoder”).

circuit” or “reader-decoder circuit” (“RDC”) speaks to a class of structures used to communicate wirelessly. MS-1001, 1:38-61, 7:4-22 (“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.”). For example, “wireless cards” were known before the Critical Date 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.” MS-1023, 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.” MS-1024, 7. In addition, the “receiver/reader” and “decoder” denote definite structure to a POSITA. MS-1021, 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”); MS-1021, 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. MS-1025, 3-4; MS-1021, 11-12; MS-1024, 5-7. In view of the above definitions alone, a POSITA would have understood that a “RDC” denotes structure.

18. In the context of the ’042 Patent’s RFID background, a POSITA would have understood one such “receiver-decoder circuit,” “receiver-decoder circuit” or “interface” structure to be part of an RFID system. An understanding of the components of an RFID system existed prior to the Critical Date. 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.” MS-1021, 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 Critical Date (e.g., SpeedPass or EZ-Pass). MS-1021, 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.

19. A POSITA also would have readily recognized 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. MS-1001, 1:38-61, 7:4-22 (“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.”). 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), SpeedPass, and EZ-Pass. Pet., 6, 9, 11, 34. 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. MS-1029, 2.

20. Accordingly, 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.”

III. Enablement signal

21. I have reviewed Proxense’s arguments for MPF treatment of this claim term, which allege that the term “enablement signal” is a meaningless nonce term. POR, 20-21.

22. An “enablement signal” has sufficiently definite structure for performing the function of “enabling one or more of an application, a function and a service.” Specifically, the use of signals to enable functions was well known. MS-1022, 3, (definition for “activate - To start an operation, usually by application of an appropriate enabling signal.” (emphasis added)). This is corroborated by numerous other references that, outlined below:

- a. *The Dictionary of Science and Technology* from 2003 where “enabling signal” is defined as “*noun* a signal that starts a process or allows one to take place.” MS-1026, 3.
- b. *McGraw-Hill Dictionary of Scientific and Technical Terms* where “enable” is defined as “[t]o initiate the operation of a device or circuit by applying a trigger signal or pulse.” MS-1027, 3.
- c. *The Dictionary of Computing* where “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 . . .” MS-1028, 3.

23. Accordingly, an “enablement signal” was understood by a POSITA to be capable of enabling certain functions. Said plainly, the enablement signal does what it says — it “enables” a function, and a POSITA is more than capable of using their general knowledge and skill to design such a signal. As a specific example, the SpeedPass and EZ-Pass systems operating two years before the critical date communicated wirelessly to provide a signal for enabling the function of paying for fuel. MS-1029 (“SpeedPass *enabled* ExxonMobile’s customers to pay at the pump with the wave of a key fob”) (emphasis added).

24. Accordingly, 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.”

CONCLUSION

25. I currently hold the opinions set expressed in this declaration. But my analysis may continue, and I may acquire additional information and/or attain supplemental insights that may result in added observations.

26. 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.

Dated: 27 January 2025

By: 
Patrick Traynor