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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.[1],
Petitioner,

v.

PROXENSE, LLC,
Patent Owner.

IPR2024-00783
Patent 9,679,289 B1

Before THU A. DANG, DAVID C. McKONE, and NORMAN H. BEAMER, *Administrative Patent Judges.*

DANG, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

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[1] Apple Inc. filed a motion for joinder and a petition in IPR2025-00075, which were granted, and, therefore, Apple Inc. has been joined as petitioner in this proceeding. We also granted a Joint Motion to Terminate Inter Partes Review Proceeding as to the other petitioner, leaving Apple Inc. as the sole petitioner.

I. INTRODUCTION

A. Background

In response to a Petition (Paper 1, "Pet.") filed by Google LLC ("Google"), we instituted *inter partes* review of claims 1–20 (the "challenged claims") of U.S. Patent No. 9,679,289 B1 (Ex. 1001, "the '289 patent"). *See* Paper 12 ("Decision to Institute" or "Dec. Inst."). During trial, we granted a Motion for Joinder in IPR2025-00075 by Apple Inc. ("Apple"). Paper 18. We also granted a Joint Motion to Terminate Inter Partes Review Proceeding as to Google, leaving Apple as the sole petitioner ("Petitioner"). Paper 19.

Proxense, LLC ("Patent Owner") then filed a Response (Paper 20 ("PO Resp.")), to which Petitioner filed a Reply (Paper 22 ("Pet Reply")). In turn, Patent Owner filed a Sur-reply. Paper 23 ("PO Sur-reply"). An oral hearing was held on August 18, 2025. A transcript of the hearing has been entered into the record. Paper 28 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of the claims on which we instituted trial. Based on the record before us, Petitioner has shown by a preponderance of the evidence that claims 1–20 of the '289 patent are unpatentable under 35 U.S.C. § 103.

B. Related Proceedings

The parties identify the '289 patent as the subject of *Proxense, LLC v. Microsoft Corporation*, No. 6.23-cv-00319 (W.D. Tex.) and *Proxense, LLC v. Google LLC*, No. 6.23-cv-00320 (W.D. Tex.). Pet. 83–84; Paper 4, 1. Claims of the '289 patent are also challenged in the inter partes review of *Microsoft Corp. v. Proxense, LLC*, IPR2024-00407. *Id.* Claims of U.S.

Patent Nos. 10,073,960 and 8,646,042, similar in scope to the claims of the '289 patent, are respectively challenged in the inter partes reviews of *Microsoft Corp. v. Proxense,* IPR2024-00405 and IPR2024-00573.

C. The '289 Patent

The '289 patent, titled "Hybrid Device Having a Personal Digital Key and Receiver-Decoder Circuit and Methods of Use," issued on June 13, 2017, from Application No. 14/961,645, with a filing date of December 7, 2015. Ex. 1001, codes (54), (45), (21), (22). The '289 patent provides a hybrid device including a personal digital key (PDK) and a receiver-decoder circuit (RDC) that are coupled for communication with each other. *Id.* at code (57).

An illustration of the embodiment of the '289 patent's hybrid device is depicted in Figure 1, reproduced below:

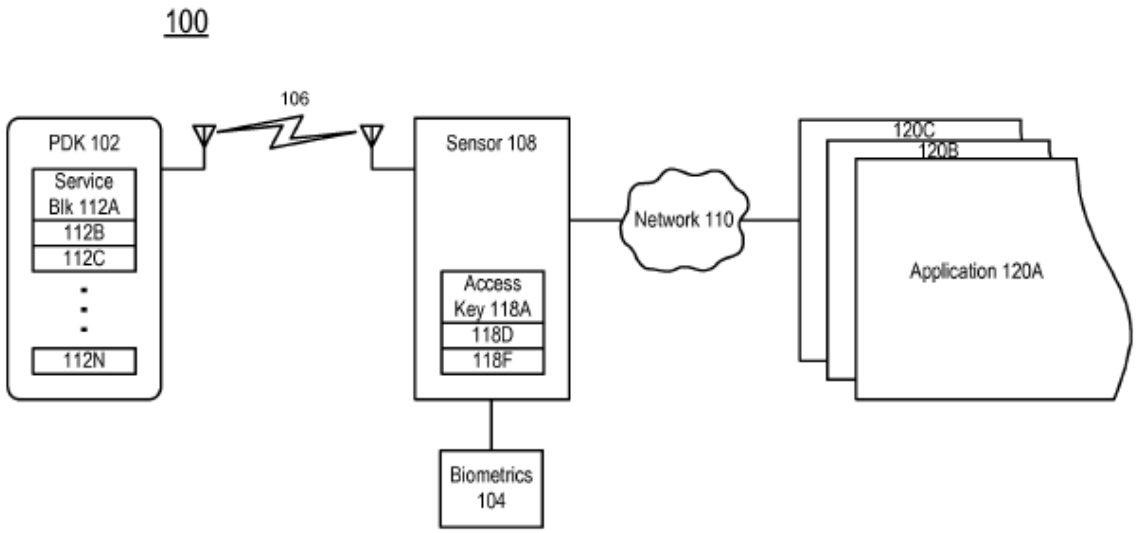


FIG. 1

Figure 1 is a block diagram of system 100 comprising PDK 102, sensor 108, network 110, and one or more applications 120 (including services). *Id.* at 3:27–31. In Figure 1, sensor 108 is coupled to PDK 102 by wireless

link 106 and coupled to network 110 by a wired or wireless link. *Id.* at 3:31–33. In the exemplary embodiment shown in Figure 1, applications 120 are accessed over network 110, with sensor 108 being adapted to receive biometric input 104 from a user and displaying status to a user. *Id.* at 3:33–36.

In the example shown in Figure 1, sensor 108 contains three service block access keys 118A, 118D, 118F, wherein service block access keys 118 allow sensor 108 to unlock information stored in corresponding service blocks 112, which information is used as local secured information. *Id.* at 3:43–50. In one example in which a biometric input is required in order to access specific service blocks in PDK 102, service block 112A is used for verification of the biometric input and sensor 108 uses stored corresponding service block access key 118A to unlock biometric service 112A. *Id.* at 3:51–56. A current biometric information is received using biometric input 104, and sensor 108 verifies the stored biometric input (from service block 112A) against the recently acquired biometric information (from input 104). *Id.* at 3:56–59.

An exemplary embodiment of sensor 108 is depicted in Figure 3, reproduced below:

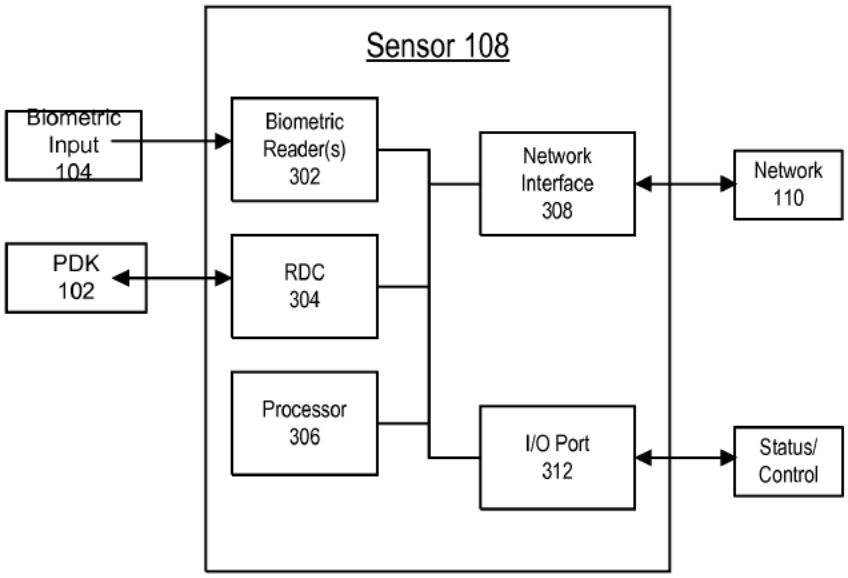


FIG. 3

Figure 3 is a block diagram of sensor 108 comprising one or more biometric readers 302, RDC 304, processor 306, network interface 308, and I/O port 312. *Id.* at 7:39–43. As shown in Figure 3, RDC 304 provides the wireless interface to PDK 102. *Id.* at 7:45–46.

Biometric reader 302 receives and processes biometric input 104 from an individual. *Id.* at 7:58–65. I/O port 312 provides general input and output interface to sensor 108. *Id.* at 8:10–17.

D. The Challenged Claims

Of the challenged claims, claims 1 and 14 are independent. Claims 2–13 depend from claim 1, and claims 15–20 depend from claim 14. Independent claim 1 is illustrative of the challenged claims, and is reproduced below:

> 1. A hybrid device comprising:
>
> an integrated, secure memory storing local, secured information; and
>
> an integrated reader-decoder circuit (RDC) for communicating wirelessly with at least one external device within a proximity zone, the integrated RDC communicatively coupled to the integrated, secure memory for communication with the integrated, secure memory,
>
> wherein one or more of (a) the integrated RDC communicating wirelessly with the at least one external device within the proximity zone and (b) the local, secured information stored by the integrated, secure memory enables one or more of an application, a function, and a service.

Ex. 1001, 22:36–49.

E. Asserted Grounds of Unpatentability

We instituted inter partes review of all challenged claims on all challenges in the Petition. Petitioner asserts that claims 1–20 of the '289 patent are unpatentable based on the following grounds (Pet. 1):

Claim(s) Challenged	35 U.S.C. §[2]	Reference(s)/Basis
1–6, 8–11, 14–19	103	Dua[3], Giobbi '157[4]

[2] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102, 103, effective March 16, 2013. Because the application from which the '289 patent issued was a continuation of applications filed before this date, the pre-AIA versions of §§ 102, 103 apply.

[3] U.S. Patent Publication No. 2006/0258289 A1, published November 16, 2006, filed May 12, 2005 (Ex. 1004, "Dua").

[4] U.S. Patent Publication No. 2007/0245157 A1, published October 18, 2007, filed May 5, 2007 (Ex. 1005, "Giobbi '157").

Claim(s) Challenged	35 U.S.C. §[2]	Reference(s)/Basis
1–6, 8–11, 14–19	103	Dua, Giobbi '157, Kotola[5]
1–7, 10, 11, 14–19	103	Buer[6]
4, 8–10, 12, 13, 17, 20	103	Buer, Giobbi '157
4	103	Buer, Nishikawa[7]

Petitioner relies on the Declarations of Andrew Wolfe, Ph.D., in support of its unpatentability contentions. Ex. 1003 (in support of the Petition); Ex. 1032 (in support of Petitioner's Reply). Patent Owner relies on the Declaration of Markus Jakobsson, Ph.D., in support of Patent Owner Response. Ex. 2014. Petitioner deposed Dr. Jakobsson and entered the transcript of the deposition into the record. Ex. 1055.

II. ANALYSIS

A. Claim Construction

We construe each claim "in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." 37 C.F.R. § 42.100(b) (2020). Under this standard, claim terms are generally given their plain and ordinary meaning as would have been understood by a person

[5] U.S. Patent Publication No. 2004/0176032 A1, published September 9, 2004, filed March 19, 2004 (Ex. 1017, "Kotola").

[6] European Patent Application No. EP 1,536,306 A1, published June 1, 2005, filed September 30, 2004 (Ex. 1005, "Buer").

[7] European Patent Application No. EP 1,600,885 A1, published November 30, 2005, filed February 25, 2004 (Ex. 1014, "Nishikawa").

of ordinary skill in the art (POSITA) at the time of the invention and in the context of the entire patent disclosure. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

Only those terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Patent Owner contends that "[d]etermining whether the Petition raises sufficient grounds of invalidity requires construing independent claims 1 and 14." PO Resp. 4. Patent Owner points out that independent claim 1 recites that the function of "enabling one or more of an application, a function and a service" is performed by "local, secured information stored by the integrated, secured memory" and/or an "integrated RDC communicating wirelessly with the at least one external device within the proximity zone," while independent claim 14 recites that the function is performed by an "enablement signal." *Id.* According to Patent Owner, "[t]hese terms must be construed to determine the corresponding structures performing the recited function," and "[o]nly then can it be determined whether the Petition includes all elements of claims 1 and 14 in the asserted references." *Id.* at 4–5.

Patent Owner then asserts that claims 1 and 14 "do not recite a sufficiently definite structure for performing the [recited 'enabling'] function," and therefore, "the claims invoke 35 U.S.C. § 112, ¶ 6." PO Resp. 5. Thus, according to Patent Owner, "the claims must be construed to cover only the structure, material, or acts described in the specification as

corresponding to the claimed structure," wherein "the structure is the algorithm the general-purpose computer is programmed to perform." *Id.* That is, according to Patent Owner, "[w]hen properly construed, claims 1 and 14 are computer implement inventions invoking 35 U.S.C. § 112, ¶ 6," and thus, "include the algorithm disclosed in the specification." PO Sur-reply 10.

Petitioner points out that Patent Owner "does not dispute the teachings of the prior art, Petitioner's characterization of the prior art, or the combinations asserted in the Petition" against the challenged claims. Pet. Reply 2. That is, according to Petitioner, "[b]esides its attempt to improperly construe the claims narrowly under 35 U.S.C. § 112, ¶ 6 and add limitations, [Patent Owner] has no arguments to distinguish over the prior art." *Id.* at 1. Petitioner then argues that Patent Owner's proposed constructions for the claims which lack "means for" language should be denied because Patent Owner has failed to overcome the presumption against interpretation under 112 ¶ 6. *Id.* at 3–4.

The parties' arguments and evidence turn on whether the claims invoke 35 U.S.C. § 112 ¶ 6. *See* PO Resp. 4; Pet. Reply 2; PO Sur-reply 10. However, we addressed similar arguments with respect to this issue in previous related proceedings. *See* IPR2024-00405, Paper 24 at 8–25; IPR2024-00407, Paper 25 at 8–26; IPR2024-00573, Paper 27 at 8–29. In fact, during Oral Argument in this proceeding, Patent Owner acknowledged that "this panel construed the claims at issue in [previous proceedings,] IPR2024-573 and 2024-407." Tr. 20:3–5. In particular, Patent Owner acknowledged that "the Board would rely on and import the construction from those IPRs, . . . 2024-407 and '573 for the sake of consistent office

determination." *Id.* at 20:9–11. That is, Patent Owner agreed that the Board should use the prior constructions for the same claim terms at issue in this proceeding. *Id.* at 26:12–16 ("JUDGE MCKONE: -- it sounds like everybody agrees, that we should use the prior claim constructions from the other proceedings . . . Do you agree? MR. HECHT: -- if the Board agrees, absolutely."). Petitioner also agreed that the Board should use the prior constructions. *See id.* at 31:23–32:3 ("JUDGE MCKONE: And so I assume you want us to use the same claim construction in this case as the previous case[s]; is that correct? MR WOO: That is correct, Your Honor.").

We agree with the parties that, for the sake of consistency, we apply our claim constructions from the previous proceedings. Tr. 20:22–25. As set forth in the previous related proceedings, we determined that the claims do not invoke 35 U.S.C. § 112 ¶ 6. *See* IPR2024-00405, Paper 24 at 8–25; IPR2024-00407, Paper 25 at 8–26; IPR2024-00573, Paper 27 at 8–29. Thus, for consistency, and for the reasons given in the previous related proceedings, in this proceeding, we also determine that the claims do not invoke 35 U.S.C. § 112 ¶ 6, as discussed below.

1) 35 U.S.C. § 112 ¶ 6.

35 U.S.C. § 112 ¶ 6 is a provision in patent law that allows an element in a claim to be expressed as a means or step for performing a specific function without reciting the structure, material, or acts in support thereof. That is, § 112 ¶ 6 allows claiming the means of or step of accomplishing a particular function using purely functional language. Section 112 ¶ 6 reads as follows:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such

> claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalent thereof.

A claim element using the term "means" is generally presumed to be a means-plus-function element. *See Williamson v, Citrix Online, LLC*, 792 F.3d 1339, 1348–49 (Fed. Cir. 2015). There is a rebuttable presumption that a claim limitation is not drafted in a means-plus-function format and conveys sufficient definite structure if it does not contain the term "means." *Id.*; *see also Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1365 (Fed. Cir. 2022).

Rather than "means for," "nonce" terms have been used, which appear as a structure, but fail to identify a specific structure. If it is shown that a claim uses a "nonce" word lacking in sufficiently definite structure that substitutes for the term "means," the presumption that the claim is not drafted in a means-plus-function format can be rebutted. *See Williamson*, 792 F.3d at 1348, 1350–51. In *Williamson*, the Court determined that the term "module" does not provide any indication of structure because "it sets forth the same black box recitation of structure for providing the same specified function as if the term 'means' had been used." *Id.* That is, the rebuttable presumption can be overcome if a challenger demonstrates that the term fails to recite sufficiently definite structure. *See Dyfan*, 28 F.4th at 1367. However, in *Dyfan*, the Court found that the terms "code" and "application" are not generic place holders (i.e., terms that are substitutes for the term "means") where persons of ordinary skill in the art would understand the terms in combination with the function performed as connoting structure. *Id.* at 1368–69.

In step-plus-function analysis, the absence of the word "step" sets up a rebuttable presumption that § 112 ¶ 6 is not invoked, but that presumption can be overcome if the claim element only recites a function without any associated acts for accomplishing that function. *See Generation II Orthotics Inc. v Medical Technology Inc.*, 263 F.3d 1356, 1368 (Fed. Cir. 2001).

The Manual for Patent Examining Procedures (MPEP) § 2181 provides guidance on means-plus-function and step-plus-function claim limitations under 35 USC § 112 ¶ 6. Although MPEP § 2181 is provided as guidance to patent examiners, it reflects existing practices identifying and interpreting 35 USC § 112 ¶ 6 limitations. In particular, § 2181 guides examiners in determining whether a claim limitation invokes 35 USC § 112 ¶ 6 by using the three-prong analysis, wherein examiners will apply § 112 ¶ 6 to a claim limitation if:

> (a) The claim limitation uses the term "means" or "step" or a term used as a substitute for "means" that is a generic placeholder (also called a nonce term or a non-structural term having specific structural meaning) for performing the claimed function;
>
> (b) The term "means" or "step" or the generic placeholder is modified by functional language, typically, but not always linked by the transitional word "for" (e.g., "means for") or another linking word or phrase, such as "configured to" or "so that"; and
>
> (c) The term "means" or "step" or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

See MPEP § 2181(I).

2) Analysis

a. Claim 1

Claim 1 recites, *inter alia*, "an integrated, secure memory storing local, secured information" and "an integrated reader-decoder circuit (RDC) for communicating wirelessly with at least one external device within a proximity zone," wherein one or more of the integrated RDC and the local, secured information stored by the integrated, secure memory "enables one or more of an application, a function, and a service." Ex. 1001, 22:37–49.

Patent Owner asserts that claim 1 does not recite "a sufficiently definite structure for performing the [recited 'enabling'] function, but rather a general-purpose computer." PO Resp. 5. Therefore, Patent Owner contends that "the claims invoke 35 U.S.C. § 112, ¶ 6, and the claims must be construed to cover only the structure, material, or acts described in the specification as corresponding to the claimed structure." *Id.* According to Patent Owner, in the claimed invention, "the structure is the algorithm the general-purpose computer is programed to perform." *Id.* Thus, according to Patent Owner, "[w]hen the structure disclosed for performing the function is a general-purpose computer," the construction of the claim term "requires identifying an algorithm disclosed in the specification for accomplishing the function." *Id.* at 7.

Patent Owner cites to *Rain* as "Applicable Law":

> To determine whether § 112 ¶ 6 applies to a claim limitation, we must inquire whether the words of the claim are understood by persons of ordinary skill in the art to have a ***sufficiently definite meaning as the name for structure. If those words lack a sufficiently definite meaning, § 112 ¶ 6 applies***. If the limitation uses the word 'means,' there is a rebuttable presumption that § 112 ¶ 6 applies. If not, there is a rebuttable

> presumption that the provision does not apply. But that presumption can be overcome and § 112 para. 6 will apply if the challenger demonstrates that ***the claim term fails to recite sufficiently definite structure*** or else recites function without reciting sufficient structure for performing that function.

PO Resp. 5 (citing *Rain Computing Inc. v. Samsung Electronics America Inc.*, 989 F.3d 1002, 1005 (Fed. Cir. 2021)).

While the challenged claims do not recite "means" or "steps" terms, and Patent Owner does not provide arguments as to whether claim 1 even recites nonce words (PO Resp. 5–6), Patent Owner argues that replacing "means" with a "recognized 'nonce' word" is "[o]ne way to demonstrate that a claim limitation fails to recite a sufficiently definite structure." *Id.* at 6 (emphasis omitted). Patent Owner argues that "failure of the claims to recite a recognized 'nonce' word is not determinative." *Id.* (citing *Media Rights Techs. v. Capital One Fin.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015)).

According to Patent Owner, "[t]he term 'local, secured information stored by the integrated, secure memory' is not a structure recognized by those of ordinary skill in the art to provide a sufficiently definite structure for performing the function of 'enabling on[e] or more of an application, a function and a service.'" PO Resp. 9 (citing Ex. 2014 ¶¶ 18, 36). In particular, such a memory is "nothing more than [a] general -purpose computer[]," wherein "a general-purpose computer is not sufficient structure absent an algorithm.'" PO Sur-reply 6–7. Patent Owner contends that the algorithm is provided in the patent, for example: "The service block access keys 118 allow the sensor 108 to unlock information stored in the corresponding service blocks 112, which information is used as local secured information." PO Resp. 10 (citing Ex. 1001, 3:45–50). Patent

Owner argues that, in our Decision on Institution, the Board did not recognize this passage "as explicitly defining 'local, secured information." *Id.* at 11 (citing Dec. Inst. 10–11). According to Patent Owner, "examples from the specification unmistakenly link the algorithm of control logic 250 to the ability of 'local, secured information stored by the integrated, secure memory' to perform the ['enabling'] function," and therefore "claim 1 must be construed as including the algorithm of control logic 250." *Id.* at 21.

Patent Owner also contends that "[t]he term 'integrated RDC communicating wireless[ly] with the at least one external device within a proximity zone' is not a structure recognized . . . to provide a sufficiently definite structure for performing the function of 'enabling [of claim 1].'" PO Resp. 21–22. In particular, Patent Owner contends that "the recited structure is nothing more than the ability to receive data via Bluetooth, Wi-Fi, and other wireless protocols." *Id.* at 22 (citing Ex. 2014 ¶¶ 55–57). According to Patent Owner, "Dr. Jakobsson characterizes the RDC as 'just a wireless interface that can decode or decrypt received data.'" *Id.* (citing Ex. 2014 ¶ 57). Patent Owner contends that the parties are in agreement that an "RDC" is "nothing more than a structure that receives data." *Id.*

Patent Owner then contends that the District Court in related litigation "construed each of the terms PDK and RDC." PO Resp. 28 (citing Ex. 2002, 27). In particular, Patent Owner contends that the District Court construed "PDK" as 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." *Id.* According to Patent Owner, "memory storing information particular to a user requires an algorithm," wherein "[c]omputer-readable media or storage

devices amount to nothing more than a general-purpose computer." *Id.* at 27. Patent Owner further contends that the District Court construed "RDC" as a "component or collection of components, capable of wirelessly receiving data in an encrypted format and decoding the encrypted data for processing." *Id.* (citing Ex. 2002, 36). Thus, according to Patent Owner, "the claims at issue before the District Court recited the same functions at issue here," i.e., "enabling one or more of an application, a function, and a service" that is "performed by . . . what the District Court had construed to be general purpose computers," wherein "to find the claims definite under 112, the District Court had to find an algorithm in the specification allowing a PDK and/or RDC to 'enable one or more of an application, a function, and service.'" *Id.* at 30.

Petitioner replies by arguing that "it is presumed that § 112, ¶ 6 does not apply" because "[n]one of the elements of the Challenged Claims. . . use the word 'means,'" and arguing that Patent Owner "fails to overcome the presumption against construing the terms 'local secured information stored by the integrated, secure memory,' 'integrated RDC,' . . . under § 112, ¶ 6." Pet. Reply 3–4 (citing *Williamson*, 792 F.3d at 1348–1349). Petitioner argues that "[t]he essential inquiry remains 'whether the words of the claims are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure'" (*id.* at 3), and points to our claim constructions for the "very same claim terms" in prior related Decisions. *Id.* at 4–8. Petitioner then points out that Dr. Jakobsson "recognizes that the '289 patent describes structure for each of the disputed claim terms." *Id.* at 8 (citing Ex. 2011 ¶¶ 37, 53–54, 57–58).

Petitioner contends that *Rain*, as cited by Patent Owner and applied by Dr. Jakobsson in his testimony is "inapposite" because the statement "when a claim term recites a function performed by a general-purpose computer" only applies "if it is already clear or has been determined that the claim terms are means-plus-function terms." Pet. Reply 9–10 (citing *Rain*, 989 F.3d at 1006; *WMS Gaming Inc. v. Int'l Game Tech*., 184 F.3d 1339, 1347–50 (Fed. Cir. 1999)). As to Dr. Jakobsson's testimony that the "local, secured information stored by the integrated, secure memory" and "integrated RDC" terms "lack structure" (Ex. 2011 ¶ 36), Petitioner argues that "Dr. Jakobsson's construction of the claim terms stand in stark contrast to, and is completely contradicted by, the construction agreed upon by the court, the parties to the litigation, and the other experts."[8] Pet. Reply 10–11. Petitioner instead points to Dr. Wolfe's testimony and argues that "the claim terms should not be construed under §112, ¶ 6." *Id.* at 16–17. In particular, "[t]he terms . . . provide sufficiently definite structure or an act," and thus, "are 'not used as 'generic terms or black box recitations of structure or abstractions.'" *Id.* at 17 (citing *Dyfan*, 28 F.4th at 1368).

[8] Petitioner also contends that Dr. Jakobsson "stands alone" in his testimony (Pet. Reply 8 (citing Ex. 2014 ¶¶ 5, 11–12, 23–24, 65)), wherein experts in the related proceedings, including Patent Owner's own expert, Dr. Eldering, agree that the claim terms "should not be interpreted under §112, ¶ 6." *Id.* at 13. However, Patent Owner argued during Oral Argument that these experts "did not testify in these proceedings," and that "their declarations are hearsay," wherein "introducing [the experts' declarations] as testimony would have deprived [Patent Owner] for the right of cross examination." Tr. 23:22–24:5. Because we did not give consideration to the declarations of these experts from the other proceedings when determining whether claim terms should not be construed under §112 ¶ 6 in this current proceeding, we do not address whether these declarations are hearsay.

Based on the complete record before us, and consistent with our determinations in the previous proceedings (*see* IPR2024-00405, Paper 24 at 8–21; IPR2024-00407, Paper 25 at 8–22; IPR2024-00573, Paper 27 at 8–24), we determine that claim 1 does not invoke 35 U.S.C. § 112 ¶ 6.

Here, as Petitioner points out, "[n]one of the elements of the Challenged Claims. . . use the word 'means,'" similar to the challenged claims in the previous related proceedings. Pet. Reply 3; *see also* IPR2024-00405, Ex. 1001, 22:43–60; IPR2024-00407, Ex. 1001, 22:36–49; IPR2024-00573, Ex. 1001, 21:51–65. As the Federal Circuit stated, when a disputed claim limitation does not employ "means for" language, the presumption is that each of the terms conveys sufficiently definite structure or act and, thus, is not subject to § 112 ¶ 6. *See Dyfan*, 28 F.4th at 1367. Based on the record before us, this presumption that each of the terms is not subject to § 112 ¶ 6 is not overcome.

Although Patent Owner argues that, because the claims invoke 35 U.S.C. § 112 ¶ 6, "the claims must be construed to cover only the structure, material, or acts described in the specification as corresponding to the claimed structure" (PO Resp. 4), the question here is whether "means for" analysis under § 112 ¶ 6 applies at all. That is, we must determine first whether the claim is even claiming a "means for" performing a function before determining whether the structure designed to perform that function is a general purpose computer, as asserted. *Id.* As set forth in MPEP § 2181, the three-step analysis in determining whether § 112 ¶ 6 applies begins with determining whether a claim limitation uses 1) the term "means" or 2) a nonce term used as a substitute for "means" that is a generic placeholder. *See* MPEP § 2181(I).

Accordingly, although Patent Owner argues that claim 1 invokes § 112 ¶ 6 (PO Resp. 4), the presumption that each of the terms is not subject to § 112 ¶ 6 is not overcome. Thus, as in the prior proceedings (IPR2024-00405, Paper 24 at 8–21; IPR2024-00407, Paper 25 at 8–22; IPR2024-00573, Paper 27 at 8–24), we decline Patent Owner's invitation to proceed to determining the corresponding algorithm.

In *Williamson*, the determination of whether a particular term invoked § 112 ¶ 6 came down to "whether the words of the claims are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure." *See Williamson*, 792 F.3d at 1348. The Federal Circuit has consistently determined that terms that connote structure do not trigger § 112 ¶ 6. *See Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996). In *Greenberg*, the Court determined that the term at issue, "detent mechanism," was not a generic placeholder like "means for" and, instead, conveyed sufficient structure to a person of ordinary skill in the art. *Id.*

Patent Owner acknowledges that "memory" is a "structure" (although Patent Owner argues that it is no more than a "general-purpose computer"). PO Resp. 10. Patent Owner also acknowledges that an "RDC' is also a "structure," with "the ability to receive data via Bluetooth, Wi-Fi, and other wireless protocols," i.e., a "receiver." *Id.* at 22.

We are unpersuaded that these terms fail to recite sufficiently definite structure. PO Sur-reply 6–7. That is, similar to our findings in prior proceedings (*see*, for example, IPR2024-00573, Paper 27 at 21–24), we find that "memory" and "reader-decoder circuit" would be understood by a person of ordinary skill in the art to recite sufficiently definite structure.

Although Patent Owner cites to *Rain* as applicable law (PO Resp. 5), we agree with Petitioner that *Rain* is "inapposite" because the question of "when a claim term recites a function performed by a general-purpose computer" only applies "if it is already clear or has been determined that the claim terms are means-plus-function terms." Pet. Reply 9–10. That is, like *Williamson*, the Court in *Rain* addressed the question of whether a claim term triggers § 112 ¶ 6 at all before proceeding to analyze the structures described in the specification to perform the claimed function. *See Rain*, 989 F.3d at 1008 ("Having concluded 'user identification module' is a means-plus-function term, we must consider the term's construction"); *see also Williamson*, 792 F.3d at 1348–1349.

In the current proceeding, we find persuasive Dr. Wolfe's testimony that a POSITA would have understood the terms "local, secured information stored by the integrated, secure memory," and "integrated RDC communicating wirelessly with the at least one external device within the proximity zone," to have sufficient "definite structure," such that a § 112 ¶ 6 interpretation is improper. Ex. 1032 ¶¶ 30–57. In particular, we find persuasive Dr. Wolfe's testimony that the term "memory" alone has definite structure, and, for example, "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." *Id.* ¶ 39. According to Dr. Wolfe, not only does memory connote structure, but a POSITA "would have recognized that memory can participate in 'enabl[ing] one or more of an application, a function, and a service' by simply storing information . . . necessary to access or otherwise invoke that application." *Id.* ¶ 40. Dr. Wolfe's testimony is consistent with

the Specification of the '289 patent, which describes a microchip that stores information in memory and responds through an antenna when probed. *See* Ex. 1001, 1:63–2:11.

Similarly, we also find persuasive Dr. Wolfe's testimony that an "RDC communicating wirelessly with the at least one external device within the proximity zone" also has sufficiently definite structure for performing the function of "enabling one or more of an application, a function and a service." Ex. 1032 ¶ 52. In particular, we find persuasive Dr. Wolfe's testimony that "a POSITA would have understood that a 'reader-decoder circuit' or 'reader-decoder circuit ("RDC") speaks to a class of structures used to communicate wirelessly." *Id.* ¶ 53. According to Dr. Wolfe, "[a] POSITA also would have readily recognized that the RDC . . . is often used to 'enable one or more of an application, a function, and a service' by enabling wireless communication of information . . . necessary to access or otherwise invoke that application, function, or service." *Id.* ¶ 56.

Thus, although Patent Owner argues that claim 1 invokes § 112 ¶ 6 (PO Resp. 5–23), and provides extensive arguments with supporting testimony from Dr. Jakobsson (*id.* (citing Ex. 2014 ¶¶ 18, 36–57)), like in the previous related proceedings (IPR2024-00405, Paper 24 at 8–21; IPR2024-00407, Paper 25 at 8–22; IPR2024-00573, Paper 27 at 8–24), the presumption that claim 1 is not subject to § 112 ¶ 6 is not overcome.

Although Patent Owner also argues that, in our Decision on Institution, we did not recognize the passage Patent Owner cited in the Specification "as explicitly defining 'local, secured information'" (PO Resp. 11), as we pointed out in the Decision, the cited passage "merely shows an exemplary embodiment and not a definition." *See* Dec. Inst. 9; *see also* Ex.

1001, 3:46–50. As to Patent Owner's request that the full passage "ought to be considered" (PO Resp. 11), we have considered the entire passage, which, as Patent Owner acknowledges, is directed to "service blocks" and includes the sentence "***[i]n this example***, the sensor 108 contains three of the service block access keys 118A, D, F." *See* Ex. 1001, 3:46–47 (emphasis added). Although Patent Owner contends that this sentence "has nothing [to] do with . . . the 'local secured information'" (PO Resp. 11), the following sentence clarifies that "[t]he service block access keys 118[, i.e., ***the*** service block access keys '[i]n this example,'] allow the sensor 108 to unlock information . . . used as local secured information." *See* Ex. 1001, 3:47–50 (emphasis added). Contrary to Patent Owner contentions, nothing in the full passage clearly ***defines*** "local, secure information." *Id.*

b. Claim 14

Claim 14 recites, *inter alia*, a method comprising "creating a first wireless link between an integrated receiver-decoder circuit (RDC) of a hybrid device and an external device," "receiving a first signal, at the integrated RDC, via the first wireless link, from the external device," and "generating an enablement signal enabling one or more of an application, a function and a service." Ex. 1001, 24:2–11.

Similar to its contentions with respect to claim 1, Patent Owner contends that claim 14 also invokes 35 U.S.C. § 112 ¶ 6. PO Resp. 4–8. Patent Owner contends that the term "'enablement signal' is not a structure recognized by those of ordinary skill in the art to provide a sufficiently definite structure for performing the function of 'enabling on[e] or more of an application, a function and a service,'" but rather "it is meaningless nonce merely reciting the function it performs." *Id.* at 23–24. Patent Owner then

contends that "claim 14 invokes § 112, ¶ 6 by failing to recite a sufficiently definite structure for . . . performing the recited function," and thus, "[t]he first step in construing a means-plus function claim is to 'identify the claimed function.'" *Id.* at 24 (citing *Rain*, 989 F.3d at 1007).

Petitioner provides the same arguments for claim 14 as it does for claim 1. *See* Pet. Reply 2–19. Petitioner argues that it is presumed that § 112 ¶ 6 also does not apply to claim 14 because claim 14 does not recite "step for," wherein Patent Owner "fails to overcome the presumption against construing the term[] . . . 'enablement signal'" under § 112 ¶ 6. Pet. Reply 2–4 (citing *Williamson*, 792 F.3d at 1348–1349).

Based on the complete record before us, we are unpersuaded that claim 14 invokes 35 U.S.C. § 112 ¶ 6.

Claim 14 is a method claim comparable to the device in claim 1, and recites "generating an enablement signal enabling one or more of an application, a function, and a service." *Compare* Ex. 1001, 22:44–49, *with id.* at 24:10–11. Although Patent Owner argues that "[t]he first step in construing a means-plus function claim is to 'identify the claimed function'" (PO Resp. 24), claim 14 is not means-plus-function, but rather should be step-plus-function. As we determined in previous proceedings, *Williamson* guides that step-plus-function analysis follows a similar approach as means-plus-function analysis (IPR2024-00405, Paper 24 at 21–25; IPR2024-00407, Paper 25 at 22–26; IPR2024-00573, Paper 27 at 24–29; *see also Williamson*, 792 F.3d at 1349), wherein triggering the step-plus-function provisions of § 112 ¶ 6 follows a similar approach of rebuttable presumption, with "step" replacing "means," and with recitation of acts substituting for recitation of structure. *See* 35 U.S.C. § 112 ¶ 6.

In the step-plus-function analysis, the absence of a particular term ("step") sets up a rebuttable presumption that § 112 ¶ 6 is not invoked. *See Seal-Flex, Inc. v. Athletic Track and Court Const., 172 F.3d 836, 849 (Fed. Circ. 1999); Generation II Orthotics*, 263 F.3d at 1368; *see also Watts v. XL Systems, Inc.*, 232 F.3d 877, 881 (Fed. Cir. 2000). Whereas claim 1 does not recite "means" language, here, claim 14 does not recite "step" for performing a function. *Compare* Ex. 1001, 22:44–49, *with id.* at 24:10–11. Because the absence of the word "step" sets up a rebuttable presumption that § 112 ¶ 6 is not invoked, and although that presumption can be overcome if the claim element only recites a function without any associated acts for accomplishing that function, on this record, this presumption is not overcome.

Claim 14 recites the function of "enabling" with an associated act for accomplishing that function, i.e., the act of "generating an enablement signal." *See* Ex. 1001, 24:10–11. We find that the act and function are apparent such that step-plus-function is not invoked." *Id.*; *see also Generation II Orthotics*, 263 F.3d at 1368. This is similar to our findings in the previous proceedings. *See* IPR2024-00405, Paper 24 at 21–25; IPR2024-00407, Paper 25 at 22–26; IPR2024-00573, Paper 27 at 24–29.

Furthermore, we find Dr. Wolfe's testimony that claim 14 recites sufficiently definite structure persuasive. Ex. 1032. In particular, we find persuasive Dr. Wolfe's testimony that an "enablement signal" has sufficiently definite structure for performing the function of "enabling one or more of an application, a function and a service." *Id.* ¶ 66. For example, Dr. Wolfe testified, "a POSITA would have understood an 'enablement signal' to be capable of enabling certain functions," such as, a "SpeedPass

enabl[ing] ExxonMobile's customers to pay at the pump with the wave of a key fob." *Id.* ¶ 67 (quoting Ex. 1060 ¶ 69).

Although Patent Owner contends that "enablement signal" is a "meaningless nonce merely reciting the function it performs" and cites to *Rain* (PO Resp. 23–24), Patent Owner neither provides evidence that "enablement signal" in claim 14 is a generic placeholder like "means" (*see Dyfan*, 28 F.4th at 1368–69), nor provides evidence that "enablement signal" sets forth a "black box recitation of structure" (*see Williamson*, 792 F.3d at 1350–51). We find unavailing that such signal generated by general purpose computers is used in claim 14 as a black box recitation of structure or generic place holder in a manner that is tantamount to using the word "means."

Thus, although Patent Owner argues that claim 14 also invokes § 112 ¶ 6 (PO Resp. 2–19), with supporting testimony from Dr. Jakobsson (Ex. 2014), similar to our determination in the previous proceedings (IPR2024-00405, Paper 24 at 21–25; IPR2024-00407, Paper 25 at 22–26; IPR2024-00573, paper 27 at 24–29), we find availing Petitioner's argument and evidence that claim 14 is not subject to § 112 ¶ 6.

B. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, "would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying

factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of non-obviousness.[9] *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

C. Claims 1–6, 8–11, and 14–19 as Allegedly Obvious over Dua and Giobbi '157; and over Dua, Giobbi '157, and Kotola

According to Petitioner, the '289 patent is directed to a "hybrid device" that "includes both an integrated personal digital key (PDK) . . . and an integrated receiver-decoder circuit (RDC)." Pet. 2. Petitioner provides an annotated Figure 12 of the '289 patent, reproduced below, to illustrate its contentions.

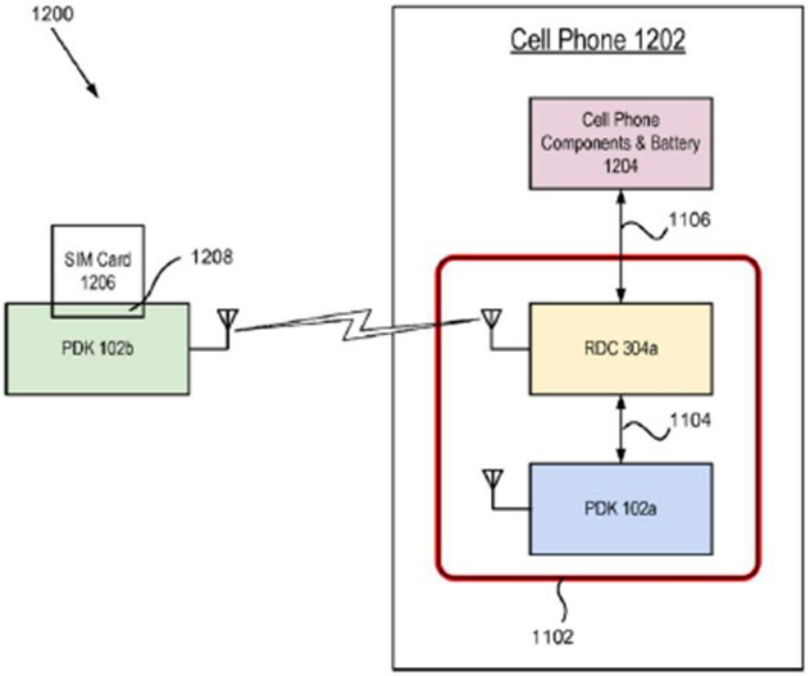


FIG. 12

[9] Neither party presents evidence or arguments regarding objective evidence of non-obviousness.

The above annotated Figure 12 of the ’289 patent in the Petition shows device 1102 (red), i.e., “hybrid device,” that includes integrated PDK 102a (blue) and integrated RDC 304a (yellow) that communicate with each other via signal line 1104. Pet. 2; *see also* Ex. 1001, 2:25–29, Fig. 12. Petitioner contends that, as shown, integrated RDC 304a (yellow) may also communicate wirelessly with external PDK 102b (green). Pet. 3; Ex. 1001, 14:45–64.

Petitioner further contends that the ’289 patent’s hybrid device may interconnect with other external devices. Pet. 3. Petitioner provides an annotated Figure 13 of the ’289 patent, reproduced below, to illustrate its contentions.

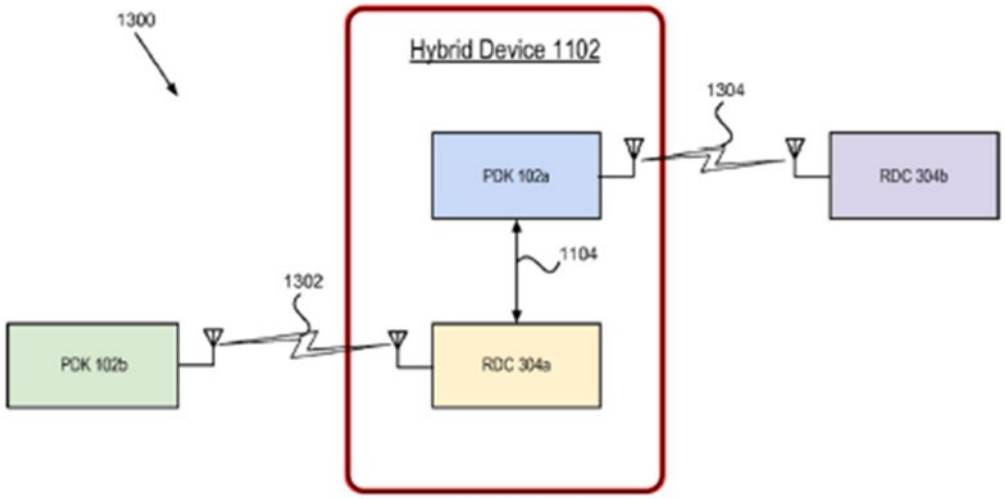


FIG. 13

The above annotated Figure 13 of the ’289 patent in the Petition shows hybrid device 1102 (red) interconnected with other external devices so that integrated PDK 102a (blue) communicates wirelessly with external RDC 304b (purple), and integrated RDC 304a (yellow) communicates wirelessly

with external PDK 102b (green) within its proximity zone. Pet. 3–4; *see also* Ex. 1001, 16:47–63, 22:36–49, Fig. 13. According to Petitioner, the '289 patent's "integrated PDK and RDC thus enables various applications, functions, or services, either on an external device or on the hybrid device using information stored on the integrated or external PDKs." Pet. 4 (citing Ex. 1001, 4:37–47, 7:7–18, 16:64–17:4).

Petitioner contends that, similar to the '289 patent, Dua teaches "a hybrid device—a 'cellular phone[]' containing 'both an RFID tag and an RFID reader'—that establishes wireless connections with other external devices to enable functions and to exchange data," wherein the cellular phone "includes an 'RFID Tag-Reader Module,' . . . to 'rapidly exchange information with an electronic device that is in close proximity.'" Pet. 8 (citing Ex. 1004 ¶¶ 15, 70, 89).

Accordingly, Petitioner then contends that claims 1–6, 8–11, and 14–19 of the '289 patent would have been obvious over by Dua and Giobbi '157, and alternatively, over Dua, Giobbi '157, and Kotola. Pet. 16–43.

In response, Patent Owner contends that these references "cannot render the challenged claims invalid and unpatentable." PO Resp. 30–33. In particular, Patent Owner contends that the Petition fails to demonstrate that the combination of references "discloses (a) 'local secured information' or (b) 'enabling one or more of an application, a function, and a service.'" *Id.* at 30.

We briefly summarize Dua, Giobbi '157, and Kotola below.

1. Dua

Dua, titled "Wireless Media System and Player and Method of Operation," discloses a wireless media system "for the automatic

establishment of wireless connectivity with other electronic devices" using an integrated Radio Frequency Identification (RFID) to exchange communication settings, media capability, and other parameters with an external device that also has integrated RFID technology. Ex. 1004, codes (54), (57). Exchange of settings and other information is automatic by using a proximity-based RFID data exchange that allows a media player to quickly establish a secure communication link with another device. *Id.* In particular, Dua discloses a media player with an RFID Tag-Reader Module. *Id.* ¶ 24, Fig. 1. The RFID tag-reader module is capable of functioning as both an RFID tag and an RFID reader, and allows interoperability with readers and tags compatible with existing international standards. *Id.* ¶ 15. A functional diagram of Dua's RFID tag-reader module is shown in Figure 4B, reproduced below.

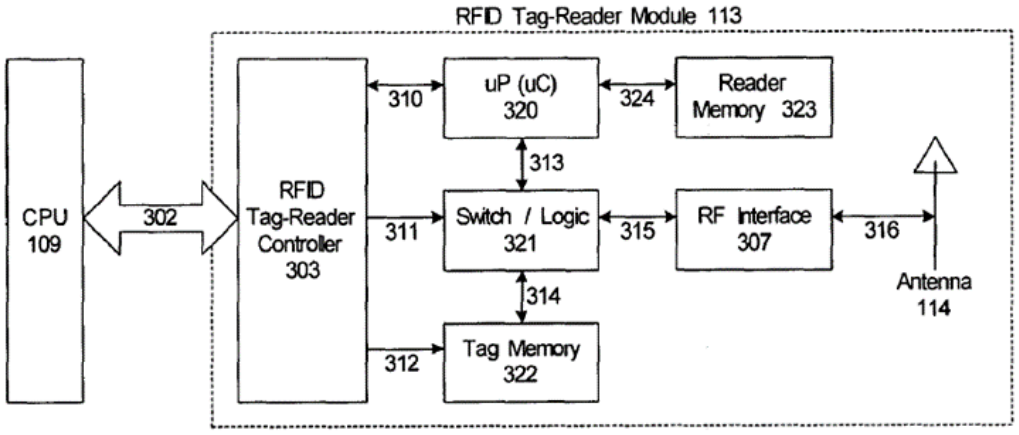


FIG. 4B

Figure 4B is block diagram of RFID Tag-Reader Module 113 including integrated RFID Tag-Reader Controller 303 that manages all communication between CPU 109 and the functional components of RFID Tag-Reader Module 113. *Id.* ¶ 106. Hardware and software interface 302 between CPU 109 and RFID Tag-Reader Controller 303 allows an application operating a media player to control functions of RFID Tag-Reader Module 113 and to

exchange data with it. *Id.* RF interface 307 and antenna 114 "are used by the RFID reader functionality and RFID tag functionality." *Id.* Reader logic 320 provides a data communication interface to media player 100 and the application executed thereon and "operates the interface and protocol framework for communicating with RFID tags . . . and in particular, when supporting active communication mode, for communicating with RFID tag reader devices." *Id.*

The reader component of RFID Tag-Reader Module 113 is "used for transmitting interrogation signals via its antenna to an external electronic device's RFID tag when in close proximity, and receiving a response signal from the external device's RFID tag." *Id.* ¶ 71. Reader memory 323 is used as a buffer storage for communication with the media player as well as with an RFID tag or another RFID tag reader device. *Id.* ¶ 107. Switch/logic component 321 interposed between RF interface 307 and reader logic 320 allows switching between RFID reader functionality and RFID tag functionality. *Id.* ¶ 108. Tag memory 322 is used to receive configuration data from applications operating on the media player. *Id.* "[M]emory components in RFID Tag-Reader Module 113 may be tamper resistant as to prevent hackers from retrieving confidential information and encryption keys." *Id.* ¶ 109. In one embodiment, enhanced security is provided as "both devices can share each other's encryption keys via the RFID exchange." *Id.* ¶ 152.

2. Giobbi '157

Giobbi '157, titled "Two-Level Authentication for Secure Transaction," published on October 18, 2007, with a filing date of May 5, 2007. Ex. 1005, codes (54), (43), (22). Giobbi '157 discloses a PDK that

stores biometric profiles in "a tamper-proof memory that is acquired in a secure trusted process," wherein the biometric profiles comprise a "representation of physical or behavioral characteristics that are uniquely associated with an individual that owns and carries the PDK." *Id.* at code (57). An illustration of Giobbi '157's system for securely authenticating an individual for transaction processing and/or access control applications is depicted in Figure 1, reproduced below.

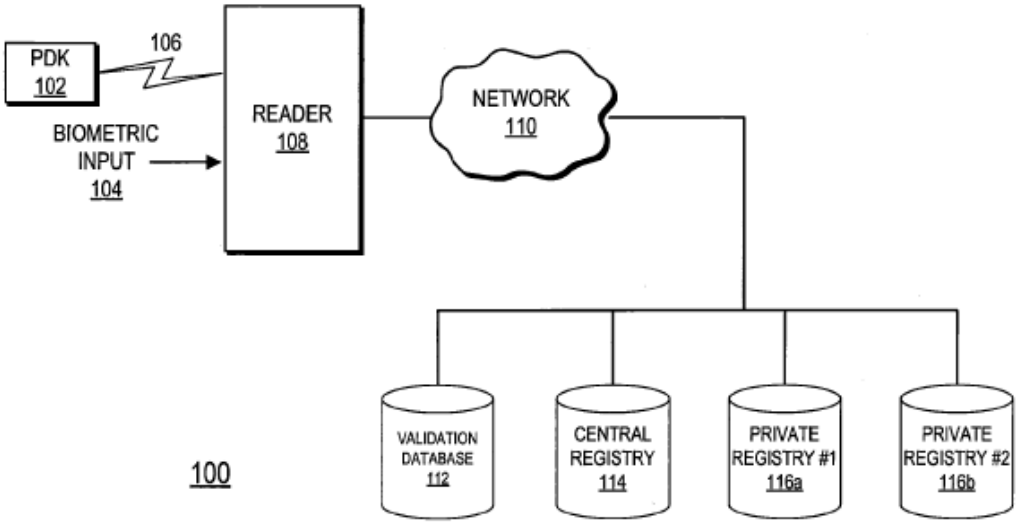


FIG. 1

Figure 1 is a block diagram of system 100 for secure electronic authentication comprising PDK 102, reader 108, network 110, and one or more external databases including validation database 112. *Id.* ¶ 26. As shown in Figure 1, reader 108 is coupled to PDK 102 by wireless link 106 and coupled to network 110 by either a wired or wireless link. *Id.* Reader 108 is also adapted to receive biometric input 104 from a user. Network 110 couples validation database 112, central registry 114, and two private registries 116 to reader 108. *Id.*

3. Kotola

Kotola, titled "Radio Frequency Identification (RF-ID) Based Discovery for Short Range Radio Communication with Reader Device Having Transponder Functionality," discloses a RF-ID based wireless terminal with a reader device in which, during an active mode, "one RF-ID tag reader simulates a RF-ID tag while the other simulates a RF-ID tag reader." Ex. 1017, codes (54), (57). Terminal 102 may use reader module 220 to transmit an interrogation signal via antenna 219 for receiving the Bluetooth serial number and possibly other information within proximity to reader module 220. *Id.* ¶ 58. "The module disables the RF-ID tag 215 when sending the interrogation signals to other handheld terminals." *Id.*

4. Analysis of Claims 1–6, 8–11, 14–19 as Allegedly Obvious over Dua and Giobbi '157

We begin by addressing in detail Petitioner's contentions and Patent Owner's arguments with respect to the limitations of representative claim 1 in section i-v, with respect to the limitations of claim 14 in section vi, and with respect to the limitations in the dependent claims in sections vii.

i. Preamble, a "hybrid device" (claim 1)

Petitioner contends that, "[t]o the extent that the preamble is limiting, Dua discloses a hybrid device because it discloses a media player (e.g., cellular phone) that includes an RFID Tag-Reader Module (hybrid device)." Pet. 32 (citing Ex. 1004 ¶¶ 57, 70; Ex. 1003 ¶¶ 159–160). Petitioner provides an annotated Figure 6 of Dua, shown below, to illustrate its contentions.

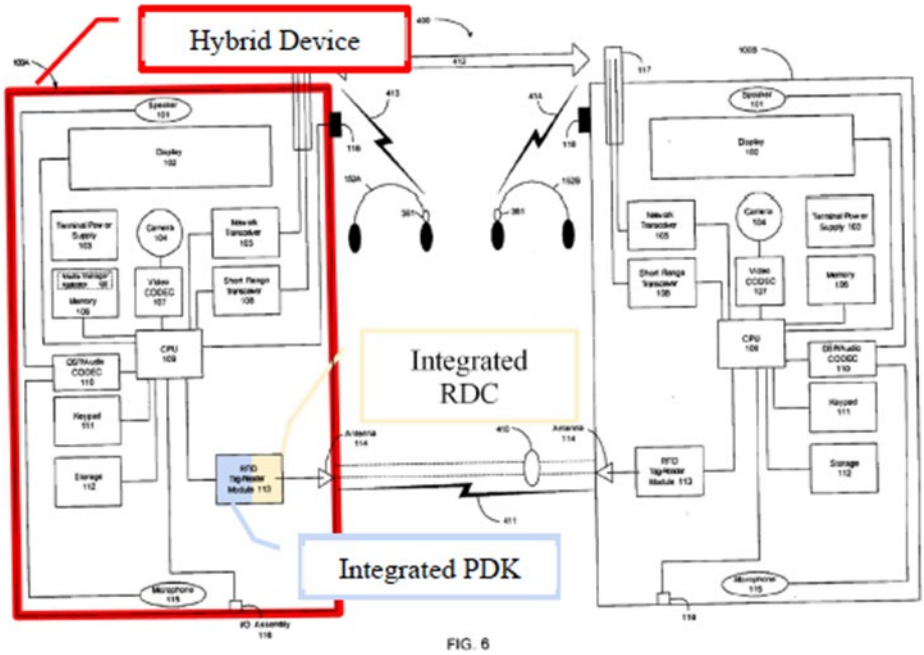


FIG. 6

The above annotated Figure 6 of Dua, according to Petitioner, illustrates "Dua's media player ('hybrid device,' red)" which includes "an RFID Tag-Reader Module 113 (e.g., 'integrated PDK,' blue; 'integrated RDC,' yellow)" that "enables the device to 'rapidly exchange information with an electronic device that is in close proximity.'" Pet. 18 (citing Ex. 1004, Fig. 6, ¶¶ 57, 70).

Patent Owner does not present arguments in the Response addressing the specific merits of Petitioner's contentions with respect to the preamble. *See generally* PO Resp. 30–33.[10] We have reviewed Petitioner's explanations and supporting evidence regarding the preamble and we agree with and adopt them as our own. Pet. 32. Because Patent Owner does not

[10] Because there is no dispute that the combination of Dua and Giobbi '157 teaches a hybrid device, as recited in the preamble, there is no need to determine whether the preamble in claim 1 is limiting. *See Nidec*, 868 F.3d at 1017.

separately address the preamble, Petitioner's positions regarding the preamble of independent claim 1 stand unopposed as a part of this trial.

Based on the complete record presented, we determine that Petitioner has persuasively shown that the proposed combination of Dua and Giobbi '157 teaches a "hybrid device" as set forth in the preamble.

ii. "an integrated, secure memory storing local, secured information" (claim 1)

Petitioner contends that Dua's RFID Tag-Reader Module . . . includes "Tag Memory 322 such as a 'non-volatile configurable memory' that may be 'tamper resistant as to prevent hackers from retrieving confidential information and encryption keys' stored therein." Pet. 26 (citing Ex. 1004 ¶¶ 105, 109). According to Petitioner, "Dua's integrated tag memory (integrated PDK) thus would store local, encrypted 'confidential information' in an integrated, tamper-resistant memory." *Id.* at 27 (citing Ex. 1003 ¶ 138).

Patent Owner contends that the Petition fails to demonstrate that the combination of Dua, Giobbi '157, and Kotola discloses or suggests "local secured information" as recited in claims 1 and 14. PO Resp. 30. In particular, Patent Owner contends that "the specification defines 'local, secured information' as information stored within a service block of a PDK and unlocked with a corresponding access key provided to the PDK," wherein the Petition "fails to establish such 'local, secured information' is disclosed by Dua, Giobbi '157, or Kotola." *Id.* at 30–31.

We find Patent Owner's arguments unavailing, as they rely on Patent Owner's arguments that "the specification defines 'local, secured information' as information stored within a service block of a PDK and

unlocked with a corresponding access key provided to the PDK" (PO Resp. 30), with which, as discussed above, we do not agree.

Dua discloses an "RFID Tag-Reader Module" which includes "Tag Memory 322" that may be tamper resistant. *See* Ex. 1004 ¶¶ 105, 109. Thus, we find persuasive Petitioner's reliance on Dua's Tag Memory 322, which locally stores information in a tamper-resistant manner, for teaching an integrated, secure memory for storing information locally, wherein the information is secured. *Id.*

Based on the complete record presented, we determine that Petitioner has persuasively shown that the proposed combination of Dua and Giobbi '157 teaches "an integrated, secure memory storing local, secured information," as recited in claim 1.

> *iii. "an integrated reader-decoder circuit (RDC) for communicating wirelessly with at least one external device within a proximity zone," "the integrated RDC communicatively coupled to the integrated, secure memory for communication with the integrated, secure memory" (claim 1)*

Petitioner contends that Dua discloses an "RFID reader component (RDC)" that "communicates wirelessly with at least one external RFID tag when within a proximity zone." Pet. 32 (citing Ex. 1004 ¶¶ 71–72, 122, 127; Ex. 1003 ¶¶ 163–164). In particular, Petitioner contends that Dua's media player includes RFID Tag-Reader Module 113 that "enables the device to 'rapidly exchange information with an electronic device that is in close proximity.'" Pet. 18 (citing Ex. 1004, Fig. 6, ¶¶ 57, 70).

Petitioner further contends that Dua discloses that the RDC is "communicatively coupled to [an] integrated, secure tag memory for

communication with the integrated, secure tag memory (PDK)." Pet. 32 (citing Ex. 1003 ¶¶ 165–168). Petitioner provides an annotated Figure 4B of Dua, shown below, to illustrate its contentions.

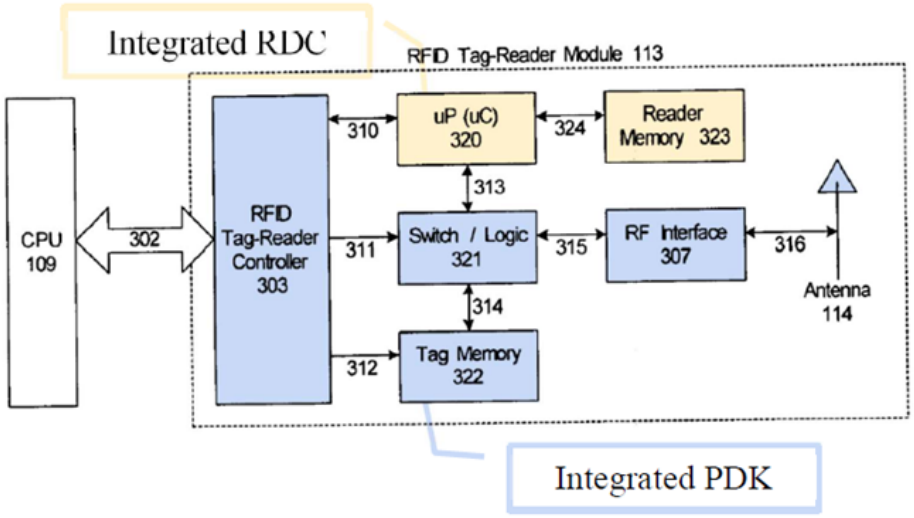


FIG. 4B

The above annotated Figure 4B of Dua, according to Petitioner, illustrates RFID Tag-Reader Module 113 that includes integrated RFID Tag-Reader controller 303 for managing all communications between CPU 109 and the functional components of RFID Tag-Reader Module 113, and "'tag logic' (e.g., switch/logic component 321)." Pet. 33 (citing Ex. 1004 ¶¶ 106, 108). According to Petitioner, "[d]uring cross-discovery, an RFID tag can be written with data received by an RFID reader." *Id.* (citing Ex. 1004 ¶ 152). Accordingly, according to Petitioner, as shown in annotated Figure 4B, Dua's "integrated RDC" (yellow), is "communicatively coupled to the integrated, secure memory [i.e., 'Integrated PDK' (blue),] to update the information stored in the RFID tag memory [, PDK]." *Id.* (citing Ex. 1004 ¶¶ 151–154).

Patent Owner does not present arguments in the Response addressing the specific merits of Petitioner's contentions with respect to these

limitations of claim 1. *See generally* PO Resp. 30–33. We have reviewed Petitioner's explanations and supporting evidence regarding these limitations, and we agree with and adopt them as our own. Pet. 32–33. Because Patent Owner does not separately address these limitations, the Petitioner's positions regarding these limitations of independent claim 1 stand unopposed as a part of this trial.

Based on the complete record presented, we determine that Petitioner has persuasively shown that the proposed combination of Dua and Giobbi '157 teaches an "integrated RDC communicatively coupled to the integrated, secure memory for communication with the integrated, secure memory," and "the integrated RDC communicatively coupled to the integrated, secure memory for communication with the integrated, secure memory," as recited in claim 1.

iv. *"wherein one or more of (a) the integrated, RDC . . . and (b) the local, secured information stored by the integrated, secure memory enables one or more of an application, a function, and a service" (claim 1)*

Petitioner contends that, in Dua, "either the integrated RDC or the local, secured information stored by the integrated, secure memory (PDK) enables an application, function or service." Pet. 34 (citing Ex. 1003 ¶¶ 169–170). In particular, Petitioner contends that, in Dua, "when an external device is within a proximity zone of its integrated RFID reader (RDC), the integrated RFID reader (RDC) communicates wirelessly with the external device's RFID tag." *Id.* (citing Ex. 1003 ¶ 170). According to Petitioner, data received by the RFID reader is sent to the hybrid device's CPU for use by applications operating on the hybrid device to generate a

Bluetooth paging message, and thus "enable[s] a wireless connection and transmission of media to the external device." *Id.* (citing Ex. 1004 ¶¶ 103, 123, 128, 161, 171; Ex. 1003 ¶ 171). Petitioner further contends that Dua also teaches "local, encrypted financial information stored in the integrated, tamper-resistant memory" which "enables 'electronic payments' at point-of-sale." *Id.* at 35 (citing Ex. 1004 ¶¶ 52, 70, 109; Ex. 1003 ¶ 172).

Patent Owner contends that the Petition fails to establish Dua, Giobbi '157, or Kotola "enables" as that term "has been construed by the District Court" in a related litigation. PO Resp. 32. Patent Owner contends that "in response to arguments . . . that the term 'hybrid device' was indefinite" in the related litigation, "the District Court found it necessary to construe the term 'enabled' such that: 'An application, function or service is 'enabled' by a PDK when it receives information from a PDK in exchange for an access key.'" *Id.* (citing Ex. 2002, 26). According to Patent Owner, "such a construction of 'enable' conf[o]rms with a means-plus-function analysis and the *Phillips* Standard." *Id.*

Patent Owner then contends that, "Dua does not contemplate that information is received in exchange for an access provided to the PDK," but instead, at most, "discloses the use of RFID technology to establish wireless communication between a media player and a diverse set of devices." PO Resp. 32 (citing Ex. 1004 ¶¶ 51–52). Thus, according to Patent Owner, "Dua fails to disclose 'enabling one or more of an application, a function, and a service' as the term has been construed by the District Court." *Id.* at 33.

We find Patent Owner's arguments unavailing. In particular, we disagree with Patent Owner's contention that the District Court provided a

construction for "enabling one or more of an application, a function, and a service," as recited in claim 1. Although Patent Owner points to the District Court's Memorandum in Support of Claim Construction Order (*id.* at 32 (citing Ex. 2002, 26)) to support its contention that the District Court construed the term "enabling," as we determined in the Decision to Institute, this portion of the District Court's Memorandum merely discusses that "hybrid device" is not indefinite, and discusses exemplary operations of the "hybrid device" from which a POSITA "could reasonably ascertain the scope of the claim." *See* Dec. Inst. 9. As we explained, a determination of whether a term is indefinite is not the same thing as construing a claim term. *Id.* Thus, as we previously explained, by determining that "hybrid device" is not indefinite, the District Court did not construe the term "enabling." *Id.*; *see also* Ex. 2002, 26. Accordingly, nothing in the Memorandum provides a construction of "enabling" as Patent Owner contends. *Id.*

Thus, we find unavailing Patent Owner's contention that "nowhere does Dua teach or describe . . . providing an access key in exchange for information held locally in the PDK's service blocks." PO Resp. 33. That is, we decline to adopt Patent Owner's proposed construction that an application, function or service is "enabled" by a PDK "when it receives information from a PDK in exchange for an access key." *Id.* at 32.

Here, as Dr. Wolfe testified, Dua teaches that, "when an external device is within a proximity zone of its integrated RFID reader (RDC), the integrated RFID reader (RDC) communicates wirelessly with the external device's RFID tag." *See* Ex. 1003 ¶ 170. We are persuaded by Petitioner's reliance on Dua for teaching that data received by the RFID reader sent to the hybrid device's CPU is used to generate a Bluetooth paging message "to

enable a wireless connection and transmission of media to the external device." Pet. 34; *see* Ex. 1004 ¶¶ 103, 123, 128, 161, 171. We are also persuaded by Petitioner's contention that information stored in the integrated, tamper-resistant memory "enables 'electronic payments' at point-of-sale." Pet. 35; *see also* Ex. 1004 ¶¶ 52, 70, 109.

Based on the complete record presented, we determine that Petitioner has persuasively shown that Dua in view of Giobbi '157 teaches "one or more of (a) the integrated, RDC . . . and (b) the local, secured information stored by the integrated, secure memory enables one or more of an application, a function, and a service," as recited in claim 1.

v. Claim 1 Conclusion

Based on the complete record presented, Petitioner has shown that the proposed combination of Dua and Giobbi '157 teaches all limitations of claim 1.

Petitioner further provides detailed explanations as to why a POSITA would have found it obvious to combine the teachings of Dua and Giobbi '157 (Pet. 31), citing Dr. Wolfe's supporting testimony (Ex. 1003). In particular, Petitioner posits that POSITA would have been motivated and found it obvious to "securely store the financial information in its tamper-resistant tag 'to prevent hackers from retrieving confidential information'" (Pet. 31 (citing Ex. 1003 ¶¶ 105, 109)), as disclosed by Giobbi '157. As Petitioner points out, Giobbi '157 teaches "credit/debit card information" that is stored in a "profile memory field 232" in the "physical access secured and tamperproof" memory (*id.*; *see* Ex. 1006 ¶¶ 36, 42, 63), and we find persuasive Petitioner's contention that a POSITA would have reasonably expected to succeed in "storing the 'credit card profile or other payment

information' in Dua's tamper resistant tag memory," wherein such combination "would have been no more than combining prior art elements according to known methods to yield predictable results." *Id.* (citing Ex. 1003 ¶ 158).

Patent Owner does not address Petitioner's positions on combining the teachings of Dua and Giobbi '157 and thus Petitioner's positions stand unopposed as a part of this trial.

We have reviewed Petitioner's explanations and supporting evidence regarding Petitioner's proffered reasoning to combine the references, and we agree with and adopt them as our own. Based on the complete record presented, we determine that Petitioner has persuasively shown that a person of ordinary skill in the art would have combined Dua and Giobbi '157 as proffered in the Petition.

Based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claim 1 would have been obvious over the proposed combination of Dua and Giobbi '157.

vi. Claim 14

As discussed above, claim 14 is a method claim comparable to the device in claim 1, and recites "generating an enablement signal enabling one or more of an application, a function, and a service." *Compare* Ex. 1001, 22:44–49, *with id.* at 24:10–11. Petitioner provides detailed explanations as to how the combination of Dua and Giobbi '157 renders the limitations as recited in independent claim 14 obvious, citing Dr. Wolfe's testimony for support. Pet. 16–31 (citing Ex. 1004 ¶¶ 13, 57, 62, 70–72, 84, 89, 100–101, 104–109, 114, 122–123, 126–144, 152, 161, 172, 224, Figs. 1, 4, 6, 7; Ex.

1006 ¶¶ 36, 42, 47, 50, 63; Ex. 1003 ¶¶ 101–144, 146–158). In particular, Petitioner contends that Dua discloses a hybrid device "generating 'a Bluetooth paging message' (enablement signal)" to "enable an application, function, or service after receiving the RFID transmission data from an external device with an RFID tag-reader module." Pet. 28 (citing Ex. 1004 ¶¶ 123, 128; Ex. 1003 ¶¶ 142–143). According to Petitioner, in Dua, when a user of the hybrid device decides to transmit digital media (e.g., music) to an external device, by bringing the external device into proximity with the hybrid device, the hybrid device's integrated RDC wirelessly communicates interrogation signals to the external device's RFID tag, which in turn wirelessly communicates RFID transmission data to the RDC. *Id.* at 29 (citing Ex. 1004 ¶¶ 126–142). Petitioner contends that this "RFID discovery/paging process" causes the hybrid device to generate "a Bluetooth paging message (enablement signal) to enable a service (e.g., wireless connection and transmission of media) on the external device." *Id.* Petitioner contends that the Bluetooth paging message is also generated "to enable a function (e.g., wireless connection) between the hybrid device and external device." *Id.* at 30 (citing Ex. 1004 ¶ 144).

Alternatively, Petitioner contends that Dua's RFID tag can also "establish 'wireless communication between a diverse set of [external] devices' for various purposes," including "'for electronic payments' at point-of-sale or to 'secure key access to buildings.'" Pet. 30 (quoting Ex. 1004 ¶¶ 52, 70). According to Petitioner, in Dua, during electronic payments using RFID technology, "the integrated RFID tag (integrated, secure memory) would generate RFID signal (enablement signal) to exchange financial information with the external point-of-sale device that is

in close proximity to enable electronic payments." *Id.* at 31 (citing Ex. 1004 ¶ 70; Ex. 1003 ¶¶ 153–155).

Patent Owner provides the same argument for claim 14 as it does for claim 1. PO Resp. 30–33. In particular, Patent Owner contends that the Petition fails to establish Dua, Giobbi '157, or Kotola "enables an application, a function, and a service" as that term "has been construed by the District Court" in a related litigation. PO Resp. 32.

As discussed above, we disagree with Patent Owner's contention that the District Court provided a construction for one or more of the integrated, RDC and the local, secured information stored by the integrated, secure memory "enabling one or more of an application, a function, and a service," as recited in claim 1. As discussed above and as we determined in the Decision to Institute, by determining that "hybrid device" is not indefinite, the District Court did not construe the term "enabling." Dec. Inst. 9.

As Petitioner points out, Dua discloses a device that generates a "Bluetooth paging message" after receiving the RFID transmission data from an external device with an RFID tag-reader module. Pet. 28; *see* Ex. 1004 ¶¶ 123, 128. We find persuasive Petitioner's reliance on Dua for disclosing a "hybrid device" that generates an "enablement signal" to "enable an application, function, or service" after receiving the RFID transmission data from an external device with an RFID tag-reader module. *Id.* Based on the complete record presented, we determine that Petitioner has persuasively shown that the proposed combination of Dua and Giobbi '157 teaches "generating an enablement signal enabling one or more of an application, a function and a service" recited in claim 14.

As to the remaining limitations of claim 14, we have reviewed Petitioner's explanations and supporting evidence regarding the limitations, and we agree with and adopt them as our own. Pet. 16–28. Patent Owner does not separately address these limitations (*see* PO Resp. 30–33), and, as a result, the Petitioner's positions regarding these limitations of independent claim 14 stand unopposed as a part of this trial. Based on the complete record presented, we determine that Petitioner has persuasively shown that the proposed combination of Dua and Giobbi '157 teaches the remaining limitations recited in claim 14.

Accordingly, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claim 14 would have been obvious over the proposed combination of Dua and Giobbi '157.

vii. Dependent Claims 2–6, 8–11, and 14–19

Petitioner provides detailed explanations as to how the combination of Dua and Giobbi '157 allegedly renders obvious dependent claims 2–6, 8–11, and 15–19 respectively depending from claims 1 and 14, citing Dr. Wolfe's testimony for support. Pet. 35–43 (citing Ex. 1004 ¶¶ 13, 52, 57, 58, 62, 70–72, 84, 89, 100, 101, 103–109, 114, 122, 123, 126–144, 152–154, 161, 172–174, 224, Figs. 1, 4B, 6, 7; Ex. 1006 ¶¶ 28, 31, 33, 36–43, 47, 48, 50, 53, 58, 63, 70, 74; Ex. 1003 ¶¶ 173–179, 183–208).

Patent Owner does not address separately Petitioner's explanations and supporting evidence regarding the limitations in depending claims 2–6, 8–11, and 14–19 with respect to Dua and Giobbi '157. *See generally* PO Resp. 30–33. We have reviewed Petitioner's explanations and supporting evidence regarding these limitations, and we agree with and adopt them as our own. Pet. 35–43. Because Patent Owner does not separately address the

limitations in these claims, the Petitioner's positions regarding the limitations of dependent claims 2–6, 8–11, and 14–19 stand unopposed as a part of this trial.

Based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claims 2–6, 8–11, and 14–19 would have been obvious over the proposed combination of Dua and Giobbi '157.

5. Analysis of Claims 1–6, 8–11, 14–19 as Allegedly Obvious over Dua, Giobbi '157, and Kotola

Petitioner contends that claims 1–6, 8–11, and 14–19 of the '289 patent would also have been obvious over Dua and Giobbi '157 further in view of Kotola, providing the arguments discussed above for the obviousness ground over Dua and Giobbi '157. *See* Pet. 16–43. Petitioner adds that Kotola discloses a mobile terminal having an integrated RFID tag and an integrated RFID reader," "the RFID tag being connected to "[a]n antenna film or coil 220," and the separate RFID reader being connected to "antenna 219," wherein it would have been obvious "to implement separate antennas, as Kotola teaches." *Id.* at 23 (citing Ex. 1017, 56–58, Fig. 4). Patent Owner responds with the same arguments discussed above for the obviousness ground based on Dua and Giobbi '157. *See* PO Resp. 30–33.

As discussed above with respect to the Dua and Giobbi '157 ground, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claims 2–6, 8–11, and 14–19 would have been obvious over Dua and Giobbi '157.

Petitioner further provides detailed explanations as to why a POSITA would have found it obvious to combine the teachings of Dua and Giobbi

'157 with Kotola (Pet. 23–24), citing Dr. Wolfe's supporting testimony (Ex. 1003). In particular, Petitioner points out that Kotola discloses a mobile terminal having an integrated RFID tag and an integrated RFID reader, wherein the RFID tag is connected to "[a]n antenna film or coil 220" and the separate RFID reader is connected to "antenna 219." *Id.* at 23 (citing Ex. 1017, Fig. 4, ¶¶ 57–58). Petitioner contends that it would have been obvious to implement separate antennas, as Kotola teaches, because Dua cites to Kotola, wherein Dua itself "provide[s] a justification for combing the references." *Id.* (citing Ex. 1004 ¶ 114). Moreover, Petitioner contends that a POSITA would have been motivated to implement the teachings of Kotola, because "doing so provides antenna diversity for mitigating fading and improving signal reception and enables simultaneous transmission and reception of signals." *Id.* at 23–24 (citing Ex. 1003 ¶ 124).

Patent Owner does not address Petitioner's positions on combining the teachings of Dua, Giobbi '157, and Kotola, and thus Petitioner's positions stand unopposed as a part of this trial.

We have reviewed Petitioner's explanations and supporting evidence regarding Petitioner's proffered reasoning to combine the references, and we agree with and adopt them as our own. Based on the complete record presented, we determine that Petitioner has persuasively shown that a person of ordinary skill in the art would have combined Dua, Giobbi '157, and Kotola, as proffered in the Petition.

Based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claims 2–6, 8–11, and 14–19 would also have been obvious over the proposed combination of Dua and Giobbi '157, in further view of Kotola.

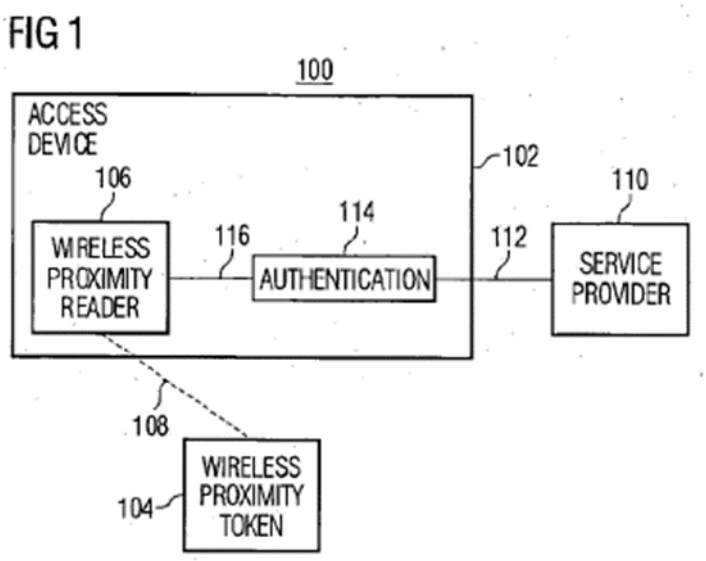
D. Claims 1–7, 10, 11, and 14–19 as Allegedly Obvious over Buer; Claims 4, 8–10, 12, 13, 17, and 20 as Allegedly Obvious over Buer and Giobbi '157; and Claim 4 as Allegedly Obvious over Buer and Nishikawa

Alternatively, Petitioner contends that claims 1–7, 10, 11, and 14–19 of the '289 patent also would have been obvious over Buer, and that claims 4, 8–10, 12, 13, 17, and 20 of the '289 patent would have been obvious over Buer and Giobbi '157. Pet. 44–78. Petitioner then contends that claim 4 would have been obvious over Buer and Nishikawa. *Id.* at 78–80. In response, Patent Owner contends that Petitioner fails to demonstrate that Buer discloses or renders obvious the claim limitations "local, secured information," and "enabling one or more of an application, a function, and a service." PO. Resp. 33–37.

We briefly summarize Buer and Nishikawa below.

1. Buer

Buer, titled "Proximity Authentication System," discloses controlling access to secured services based on the proximity of a wireless token to a computing device through which access to the secured services is obtained, wherein an authorized user is provided access to a service only when the wireless token assigned to the user is in the proximity of the computing device. Ex. 1005, codes (54), (57). A user's credential may be stored on the token and a reader may be implemented within a security boundary on the computing device, and thus, the credential may be passed to the security boundary without passing through the computing device via software messages or applications. *Id.* An illustration of Buer's proximity-based authentication system is depicted in Figure 1, reproduced below.



Buer's Figure 1 is a block diagram of system 100 comprising access device 102 used to determine whether wireless token 104 assigned to a user or users is proximate to access device 102. *Id.* ¶¶ 110–111. As shown in Figure 1, wireless proximity reader 106 is configured to receive signals 108 from wireless proximity token 104, wherein signals 108 include information that uniquely identifies wireless proximity token 104 and includes credentials (e.g., a password) that may be used to access a secured service provided by service provider 110. *Id.* ¶ 111.

2. Nishikawa

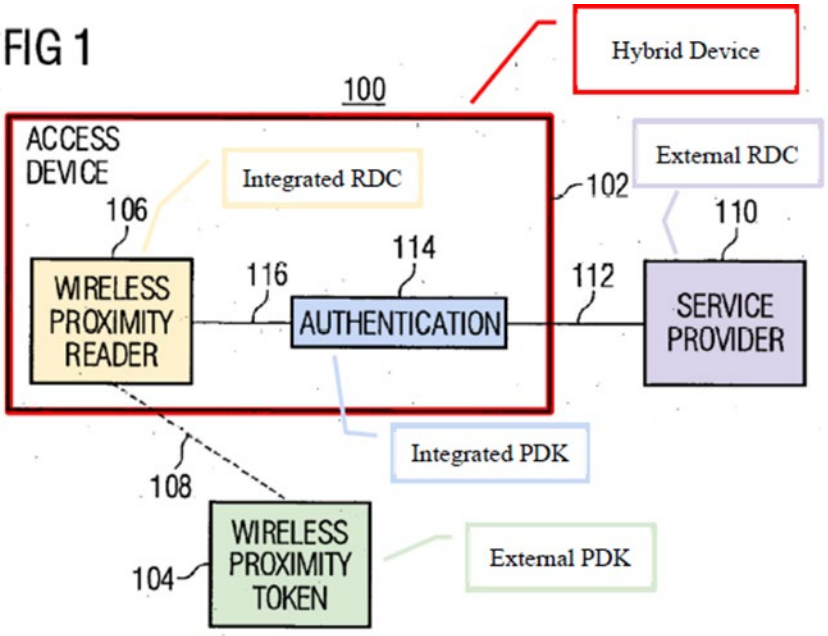
Nishikawa, titled "SIM Reader/Writer and Mobile Phone," discloses improving the convenience of a key holder type ID module by combining an IC chip of a SIM with contact and noncontact interfaces to provide the key holder type ID module with noncontact communication function. Ex. 1014, code (54), ¶ 17. Nishikawa also discloses combining a coil antenna and a display with a reader/writer to be used in combination with the SIM to provide the reader/writer with a short-distance communication function and a fingerprint sensing function. *Id.* ¶ 17.

3. Analysis of Claims 1–7, 10, 11, and 14–19 as Allegedly Obvious over Buer

We begin by addressing in detail Petitioner's contentions and Patent Owner's arguments with respect to the limitations of representative claim 1.

i. Preamble, "A hybrid device" (claim 1)

Petitioner contends that, "[t]o the extent that the preamble is limiting, . . . Buer discloses . . . an access device that combines an authentication circuitry and a wireless proximity reader to provide a hybrid device." Pet. 62 (citing Ex. 1003 ¶ 248). Petitioner provides an annotated Figure 1 of Buer, shown below, to illustrate its contentions.



The above annotated Figure 1 of Buer, according to Petitioner, illustrates "access device 102 ('hybrid device,' red)" that includes "two components: an authentication component 114 ('integrated PDK,' blue) and a wireless proximity reader 106 ('integrated RDC,' yellow)." Pet. 44–46 (citing Ex. 1005, Fig. 1, ¶¶ 111–112, 118). Petitioner contends that, in Buer, "authentication component 114 is configured to process (e.g., encrypt or

sign) the information before sending it to [] service provider 110 (purple)," and "wireless proximity reader 106 is configured to receive information from [] wireless proximity token 104 ('external PDK,' green) when the token is proximate to the access device." *Id.*

Patent Owner does not present arguments in the Response addressing the specific merits of Petitioner's contentions with respect to the preamble. *See generally* PO Resp. 33–37. We have reviewed Petitioner's explanations and supporting evidence regarding the preamble and we agree with and adopt them as our own. Pet. 62. Because Patent Owner does not separately address the preamble, the Petitioner's positions regarding the preamble of independent claim 1 stand unopposed as a part of this trial.

Based on the complete record presented, we determine that Petitioner has persuasively shown that Buer teaches a "hybrid device" as set forth in the preamble.

ii. "an integrated, secure memory storing local, secured information"

Petitioner contends that "Buer's hybrid device includes an integrated PDK, which includes an integrated, tamper-resistant memory storing local, encrypted information." Pet. 62 (citing Ex. 1005 ¶¶ 13, 134–137; Ex. 1003 ¶¶ 249–250). According to Petitioner, in Buer, "the integrated PDK may use 'tamper resistant and/or tamper evident hardware,'" and "[t]he information is encrypted when stored in data memory 314 within the cryptographic boundary." *Id.* at 55 (citing Ex. 1005 ¶¶ 13, 134–135, 137; Ex. 1003 ¶¶ 232–233).

Patent Owner replies that Buer's "'data memory 314' is not unlocked by an access key provided by the service provider as required by the

challenged claim(s)." PO Resp. 33. In particular, Patent Owner repeats the argument that "the specification defines 'local, secured information' as information stored within a service block of a PDK and unlocked with a corresponding access key provided to the PDK." *Id.* According to Patent Owner, Buer "only discloses the use of a key ***provided by a PDK*** to decrypt information received from data memory 314." *Id.* at 34 (citing Ex. 1005 ¶ 135).

We find Patent Owner's arguments unavailing, as they rely on Patent Owner's arguments that "the specification defines 'local, secured information' as information stored within a service block of a PDK and unlocked with a corresponding access key provided to the PDK" (PO Resp. 33), with which, as discussed above, we do not agree. That is, as discussed above, an interpretation of "local, secured information" as "information stored within a service block of a PDK and unlocked with a corresponding access key provided to the PDK," as Patent Owner asserts, (*id.*) is not required.

As Patent Owner acknowledges, Petitioner relies on Buer's data memory 314 storing the claimed "local, secured information." PO Resp. 33. In particular, Petitioner contends that data memory 314 stores information within the cryptographic boundary. Pet. 55. And even Patent Owner does not contest Petitioner's reliance on Buer's data memory 314 for teaching a tamper-resistant memory for storing encrypted information. PO Resp. 33.

As Petitioner points out, Buer discloses an "integrated PDK" that uses "tamper resistant and/or tamper evident hardware," wherein "information is encrypted when stored in data memory 314 within the cryptographic boundary." Pet. 55; *see* Ex. 1005 ¶¶ 13, 134–135, 137. We find persuasive

Petitioner's reliance on Buer for teaching the claimed "integrated, secure memory." *Id.*

Based on the complete record presented, we determine that Petitioner has persuasively shown that Buer teaches "an integrated, secure memory storing local, secured information," as recited in claim 1.

iii. "an integrated reader-decoder circuit (RDC) for communicating wirelessly with at least one external device within a proximity," "the integrated RDC communicatively coupled to the integrated, secure memory"

Petitioner contends that Buer discloses "the integrated wireless proximity reader (RDC) communicates 'wirelessly with at least' an external token 'within a proximity zone.'" Pet. 62 (citing Ex. 1003 ¶ 251). According to Petitioner, "Buer's wireless proximity reader (RDC) is configured to receive RF signals when the token is 'proximate to the access device,' such as 'when they are within a predefined distance of each other.'" *Id.* (citing Ex. 1005 ¶¶ 111, 146; Ex. 1003 ¶ 251). Further, Petitioner contends that Buer's integrated, wireless proximity reader 106 is "communicatively coupled to the integrated, secure memory in the 'authentication component 114' 'via a connection 116 within a common integrated circuit.'" *Id.* at 63 (citing Ex. 1005 ¶ 116, Fig. 1; Ex. 1003 ¶¶ 252–254).

Patent Owner does not present arguments in the Response addressing the specific merits of Petitioner's contentions with respect to these limitations. *See generally* PO Resp. 33–37. We have reviewed Petitioner's explanations and supporting evidence regarding these limitations and we agree with and adopt them as our own. Pet. 62. Because Patent Owner does

not separately address these limitations, the Petitioner's positions regarding these limitations of independent claim 1 stand unopposed as a part of this trial.

Based on the complete record presented, we determine that Petitioner has persuasively shown that Buer teaches "an integrated reader-decoder circuit (RDC) for communicating wirelessly with at least one external device within a proximity," "the integrated RDC communicatively coupled to the integrated, secure memory," as recited in claim 1.

iv. *"wherein one or more of (a) the integrated RDC . . . and (b) the local, secured information stored by the integrated, secure memory enables one or more of an application, a function, and service."*

Petitioner contends that Buer's "authentication component enabl[es] a wide variety of applications, functions, or services." Pet. 64 (citing Ex. 1003 ¶¶ 255–257). According to Petitioner, Buer's "integrated proximity reader (RDC), communicat[es] wirelessly with an external token within a proximity zone, enabl[ing] network access on a hybrid device." *Id.* at 64–65 (citing Ex. 1005 ¶¶ 120, 122, 165, 174–175, Figs. 6–7; Ex. 1003 ¶¶ 258–260). Further, Petitioner contends that, in Buer, "local, encrypted information stored by the integrated, tamper-resistant memory enables network access by sending encrypted or signed information to the 'network access provider (e.g., access point 608).'" *Id.* at 65 (citing Ex. 1005 ¶¶ 13, 134, 165, 174; Ex. 1003 ¶¶ 261–262). Alternatively, Petitioner contends that "Buer discloses that credit card information stored in its trusted platform module (TPM) is used to enable another processing system, such as a computer with a point-of-sale device." *Id.* (citing Ex. 1005 ¶¶ 192–195).

Patent Owner responds that "Buer at most teaches sending messages containing credential information from a token activated by proximity," which, according to Patent Owner, is "distinct from the invention claimed in the ['']289 [p]atent." PO Resp. 35. According to Patent Owner, Buer's method of providing access to a service "begins with a token sending a message containing authentication information," but the message "lacks information received from a token in exchange for an access key provided to the token." *Id.* at 35 (citing Ex. 1005 ¶¶ 146–149). That is, according to Patent Owner, "no key is provided in exchange for the information." *Id.* Accordingly, Patent Owner contends that "the Buer messages between token and reader and reader and service provider are not 'enabling one or more of an application, a function, and a service.'" *Id.* at 36.

We find Patent Owner's arguments unavailing because Patent Owner is again relying on a claim construction of "enabling" as comprising a token exchange (PO Resp. 35) that is not required, as discussed above. Thus, we are unpersuaded by Patent Owner's contention that Buer fails to disclose the "enabling" limitation because Buer's message "lacks information received from a token in exchange for an access key provided to the token." *Id.*

Here, we are persuaded by Petitioner's reliance on Buer's RDC communicating with an external token within a proximity zone as "enabl[ing] network access on a hybrid device." Pet. 64–65; *see* Ex. 1005 ¶¶ 120, 122, 165, 174–175, Figs. 6–7. We also find persuasive Petitioner's reliance on Buer's "local, encrypted information stored by the integrated, tamper-resistant memory" for "enabl[ing] network access" by sending encrypted or signed information to access point 608. *Id.* at 65 (citing Ex. 1005 ¶¶ 13, 134, 165, 174; Ex. 1003 ¶¶ 261–262). Alternatively, we

find persuasive Petitioner's reliance on Buer's use of credit card information stored in its TPM "to enable another processing system, such as a computer with a point-of-sale device." *Id.* (citing Ex. 1005 ¶¶ 192–195).

Based on the complete record presented, we determine that Petitioner has persuasively shown that Buer teaches "one or more of (a) the integrated, wireless communication interface . . . and (b) the local, secured information stored by the integrated, secure memory enables one or more of an application, a function, and a service," as recited in claim 1.

v. Claim 1 Conclusion

Based on the complete record presented, Petitioner has shown that the Buer teaches all limitations of claim 1. Thus, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claim 1 would have been obvious over Buer.

vi. Claim 14

Petitioner provides detailed explanations as to how Buer renders the limitations as recited in independent claim 14 obvious, citing Dr. Wolfe's testimony for support. Pet. 44–61 (citing Ex. 1005 ¶¶ 11, 13, 97, 111–112, 114, 118–122, 130, 134–138, 141, 146–150,152–153, 155, 157–159, 162–163, 165, 170, 173–175, 184–185, 190–196, 199–201, Figs. 1, 3–7, 9; Ex. 1003 ¶¶ 210–247). In particular, Petitioner contends that Buer discloses an authentication component "generating and enablement signal" because it provides "encrypted or signed credentials to a service provider to enable access to secured services." *Id.* at 56 (citing Ex. 1003 ¶¶ 237–239). According to Petitioner, Buer discloses that information received wirelessly by the integrated proximity reader from the external token enables an application, function or service. *Id.* at 58 (citing Ex. 1003 ¶¶ 240–245).

Petitioner contends that, in Buer, after a proximity reader verifies a user (via an external token), "the authentication component generates an enablement signal (e.g., RF signal) providing the necessary authentication information (e.g., signed information) via its cryptographic processing system to a service provider" to "enable a wide variety of applications, functions, or services on the hybrid device." *Id.* (citing Ex. 1005 ¶¶ 152, 174). Petitioner contends that, like the '289 patent, "Buer discloses enabling network access on a hybrid device." *Id.* at 59.

Alternatively, Petitioner contends that Buer's information stored by the integrated secure memory also enables an application, function or service. Pet. 61. According to Petitioner, in Buer, the mobile device may include a trusted platform module (TPM), which includes a proximity reader that is used to extract any user credentials from a token, wherein the extracted credential would be stored in its integrated PDK via the local data memory, and the mobile device's TPM may include an RFID client, which "generates an enablement signal (e.g., RF signal containing credit card information) that is transmitted to another processing system," such as a computer with a point-of-sale device. *Id.* at 61 (citing Ex. 1005 ¶¶ 184–185, 190–196; Ex. 1003 ¶¶ 246–247)

Patent Owner provides the same argument for claim 14 as it does for claim 1. PO Resp. 33–37. In particular, Patent Owner contends that the Petition "fails to establish Buer 'enables an application, a function, and a service'" as that term "has been construed by the District Court" in a related litigation. PO Resp. 34–35.

As discussed above, we disagree with Patent Owner's contention that the District Court provided a construction for one or more of the integrated,

RDC and the local, secured information stored by the integrated, secure memory "enabling one or more of an application, a function, and a service," as recited in claim 1. As discussed above and as we determined in the Decision to Institute, by determining that "hybrid device" is not indefinite, the District Court did not construe the term "enabling." Dec. Inst. 9.

As Petitioner points out, in Buer, after a proximity reader verifies a user, and an authentication component, for example, generates an RF signal providing the necessary authentication information for access. Pet. 58–59; *see also* Ex. 1005 ¶¶ 152, 174). We find persuasive Petitioner's reliance on Buer for disclosing a "hybrid device" that generates an "enablement signal" to "enable an application, function, or service." Based on the complete record presented, we determine that Petitioner has persuasively shown that Buer teaches "generating an enablement signal enabling one or more of an application, a function and a service" recited in claim 14.

As to the remaining limitations of claim 14, we have reviewed Petitioner's explanations and supporting evidence regarding the limitations, and we agree with and adopt them as our own. Pet. 44–61. Patent Owner does not separately address these limitations (*see* PO Resp. 33–37), and, as a result, the Petitioner's positions regarding these limitations of independent claim 14 stand unopposed as a part of this trial. Based on the complete record presented, we determine that Petitioner has persuasively shown that Buer teaches the remaining limitations recited in claim 14.

Accordingly, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claim 14 would have been obvious over Buer.

vi. Claims 2–7, 10, 11, and 15–19

Petitioner provides detailed explanations as to how Buer renders obvious claims 2–7, 10, 11, and 15–19, respectively depending from claims 1 and 14, citing Dr. Wolfe's testimony for support. Pet. 65–71, 74–78 (citing Ex. 1005 ¶¶ 7, 11, 114–115, 120–122, 125, 127, 129–130, 138, 143, 163, 165, 174–175, 177, 181, 193–196, Figs. 1, 3, 6, 8, 11; Ex. 1003 ¶¶ 264–269, 271–288, 304, 311).

Patent Owner does not separately address Petitioner's explanations and supporting evidence regarding the limitations in dependent claims 2–7, 10, 11, and 15–19 with respect to Buer. *See generally* PO Resp. 33–37. We have reviewed Petitioner's explanations and supporting evidence regarding these limitations, and we agree with and adopt them as our own. Pet. 65–71, 74–78. Because Patent Owner does not separately address the limitations in these claims, the Petitioner's positions regarding the limitations of dependent claims 2–7, 10, 11, and 15–19 stand unopposed as a part of this trial.

Based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claims 2–7, 10, 11, and 15–19 would have been obvious over Buer.

4. Analysis of Claims 4, 8–10, 12, 13, 17, and 20 as Allegedly Obvious over Buer in further view of Giobbi '157

Petitioner contends that claims 4, 8–10, 12, 13, 17, and 20 of the '289 patent would also have been obvious over Buer in further view of Giobbi '157, providing the same arguments discussed above for the obviousness ground over Buer (Pet. 65–71, 74–78), and relying on the additional teachings of Giobbi '157. *Id.* at 69, 72–76, 78 (citing Ex. 1005 ¶¶ 13, 35,

114, 125, 130, 134, 163, 195–196; Ex. 1006 ¶¶ 26, 28, 30–31, 33, 35, 37–43, 48, 53, 58, 63, 74; Ex. 1003 ¶¶ 294–304, 306–311). In particular, Petitioner contends that Giobbi '157 teaches that biometric input can be used "to compare 'stored biometric information' to authenticate the user," wherein a POSITA would have been motivated and found it obvious "to include biometric information for authenticating a user in Buer's local, tamper-resistant memory" because doing so "would promote Buer's purpose of further restricting access to service until the user satisfies additional verification queries." *Id.* at 69 (citing Ex. 1006 ¶¶ 28, 37–38, 43, 48; Ex. 1003 ¶¶ 289–292). Petitioner further contends that Giobbi '157 discloses an "external reader" to receive and/or transmit information to "remote databases" for remote authentication which include a "validation database" for "authorizing a transaction to be processed," wherein a POSITA would have been motivated to implement Giobbi '157's validation dataset in Buer's security processing system 114 with the point-of-sale components because "doing so would enhance Buer's 'credit card transactions.'" *Id.* at 72 (citing Ex. 1005 ¶¶ 195–196; Ex. 1006 ¶¶ 31, 33, 53, 74; Ex 1003 ¶¶ 294–296). Patent Owner does not address separately Petitioner's explanations and supporting evidence regarding the limitations in depending claims 4, 8–10, 12, 13, 17, and 20 with respect to Buer and Giobbi '157. *See generally* PO Resp. 33–37.

We have reviewed Petitioner's explanations and supporting evidence regarding these limitations, and we agree with and adopt them as our own. Pet. 65–78. Further, we have also reviewed and agreed with Petitioner's explanations and supporting evidence regarding Petitioner's proffered reasoning to combine the references, and similarly adopt them as our own.

Id. Because Patent Owner does not separately address the limitations in these claims, the Petitioner's positions regarding the limitations of dependent claims 4, 8–10, 12, 13, 17, and 20 stand unopposed as a part of this trial.

Based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claims 4, 8–10, 12, 13, 17, and 20 would have been obvious over Buer and Giobbi '157.

5. Analysis of Claim 4 as Allegedly Obvious over Buer and Nishikawa (Ground 5)

Petitioner provides detailed explanations as to how the combination of Buer in further view of Nishikawa also renders obvious claim 4 of the '289 patent, citing Dr. Wolfe's testimony for support. Pet. 78–80 (citing Ex. 1005 ¶¶ 114, 125, 163; Ex. 1014 ¶¶ 1, 4–13, 36, 73, 111, 114; Ex. 1003 ¶¶ 312–317). Patent Owner does not address separately Petitioner's explanations and supporting evidence regarding the limitations in dependent claim 4 with respect to Buer and Nishikawa. *See generally* PO Resp. 33–37. We have reviewed Petitioner's explanations and supporting evidence regarding these limitations, and we agree with and adopt them as our own. Pet. 78–80. Because Patent Owner does not separately address the limitations in these claims, the Petitioner's positions regarding the limitations of dependent claim 4 over Buer and Nishikawa stand unopposed as a part of this trial.

Based on the complete record presented, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claim 4 would have been obvious over Buer and Nishikawa.

III. CONCLUSION[11]

For the foregoing reasons, we determine on the complete record that Petitioner has demonstrated by a preponderance of the evidence that challenged claims 1–20 of the '289 patent are unpatentable.

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–6, 8–11, 14–19	103	Dua, Giobbi '157,	1–6, 8–11, 14–19	
1–6, 8–11, 14–19	103	Dua, Giobbi '157, Kotola	1–6, 8–11, 14–19	
1–7, 10, 11, 14–19	103	Buer	1–7, 10, 11, 14–19	
4, 8–10, 12, 13, 17, 20	103	Buer, Giobbi '157	4, 8–10, 12, 13, 17, 20	
4	103	Buer, Nishikawa	4	
Overall Outcome			1–20	

[11] Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

IV. ORDER

For the reasons given, it is

ORDERED that, based on the preponderance of the evidence, claims 1–20 of the ’289 patent have been shown to be unpatentable; and

FURTHER ORDERED that, because this is a final written decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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