

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

AIRE TECHNOLOGY LIMITED,
Patent Owner.

IPR2022-01137
Patent 8,581,706 B2

Before MIRIAM L. QUINN, JEFFREY S. SMITH, and
BRIAN J. McNAMARA,

SMITH, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
Denying Patent Owner's Motion to Amend
35 U.S.C. § 318(a)

I. INTRODUCTION

Petitioner, Apple Inc., filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–3, 11, 12, 16, 18, and 20 of U.S. Patent No. 8,581,706 B2 (Ex. 1001, “the ’706 patent”) pursuant to 35 U.S.C. § 311(a), which we instituted (Paper 11, “Dec.”). Patent Owner Aire Technology Limited filed a Response to the Petition. Paper 17 (“PO Resp.”). Petitioner filed a Reply (Paper 20, “Pet. Reply”) and Patent Owner filed a Sur-Reply (Paper 22, “PO Sur-Reply”). Patent Owner also filed a Contingent Motion to Amend (Paper 16, “Mot.”), Petitioner filed an Opposition to the Motion to Amend (Paper 19, “Opp.”), Patent Owner filed a Reply to the Opposition (Paper 23, “Reply to Opp.”), and Petitioner filed a Sur-Reply to the Motion to Amend (Paper 26, “Sur-Reply to Mot.”). A hearing was held on October 2, 2023 and a transcript (“Tr.”) was entered into the record. Paper 30.

We have jurisdiction to conduct this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). For the reasons discussed below, we determine claims 1–3, 11, 12, 16, 18, and 20 are unpatentable, and Patent Owner’s Motion to Amend is *denied* with respect to proposed substitute claims 23–26.

II. REAL PARTIES-IN-INTEREST

Petitioner identifies itself (Apple, Inc.) as its sole real party-in-interest. Pet. 90. Patent Owner identifies itself (Aire Technology Ltd.) as its sole real party-in-interest. Paper 4, 2.

III. RELATED MATTERS

The Petition states that the ’706 patent is the subject of the following proceedings:

Aire Technology Ltd. v. Google LLC, No. 6-21-01104, W.D. Tex., filed Oct. 25, 2021;

Aire Technology Ltd. v. Apple, Inc., No. 6-21-01101, W.D. Tex., filed Oct. 22, 2021 (“the Apple litigation”);

Aire Technology Ltd. v. Samsung Electronics co, Ltd. et al., No. 6-21-00955 W. D. Tex., filed Sep. 15, 2021;

Samsung Electronics Co., Ltd. v. Aire Technology Ltd., IPR2022-00876 (PTAB, May 2, 2022)

Aire Technology Ltd. v. Garmin International, Inc., No. 8-22-01027, C.D. Ca., filed May 20, 2022.

Pet. 68. Patent Owner identifies the following additional proceedings as “related current and/or former proceedings involving the patent at issue.”

Paper 4, 2–3.

Samsung Electronics Co., Ltd. v. Aire Technology Ltd., IPR2022-00874 (PTAB April 22, 2022);

Samsung Electronics Co., Ltd. v. Aire Technology Ltd., IPR2022-00875 (PTAB April 22, 2022);

Samsung Electronics Co., Ltd. v. Aire Technology Ltd., IPR2022-00877 (PTAB May 2, 2022);

Apple Inc. v. Aire Technology Ltd., IPR2022-01135 (PTAB June 15, 2022);

Apple Inc. v. Aire Technology Ltd., IPR2022-01136 (PTAB June 15, 2022).

IV. THE ’706 PATENT

The ’706 patent relates to “a method for contactless communication of at least two applications stored on a common portable data carrier.”

Ex. 1001, 1:8–11. The background of the ’706 patent explains “that a plurality of applications can be located on a portable data carrier at the same

time.” *Id.* at 2:5–9. The ’706 patent describes that the portable data carrier transmits communication-readiness signals for each of its applications to the reading device. *Id.* at 3:5–20. For example, “a first communication-readiness signal to the reading device is generated for a first of the at least two applications . . . indicating to the reading device the communication readiness of said first application.” *Id.* at 3:8–13. Additionally, “a second communication-readiness signal to the reading device is generated for a second of the at least two applications . . . and indicates to the reading device the communication readiness of said second application.” *Id.* at 3:13–20. The communication-readiness signals include an application identification number assigned to the corresponding application. *Id.* at 3:5–20. Figure 1 of the ’706 patent is reproduced below.

FIG 1

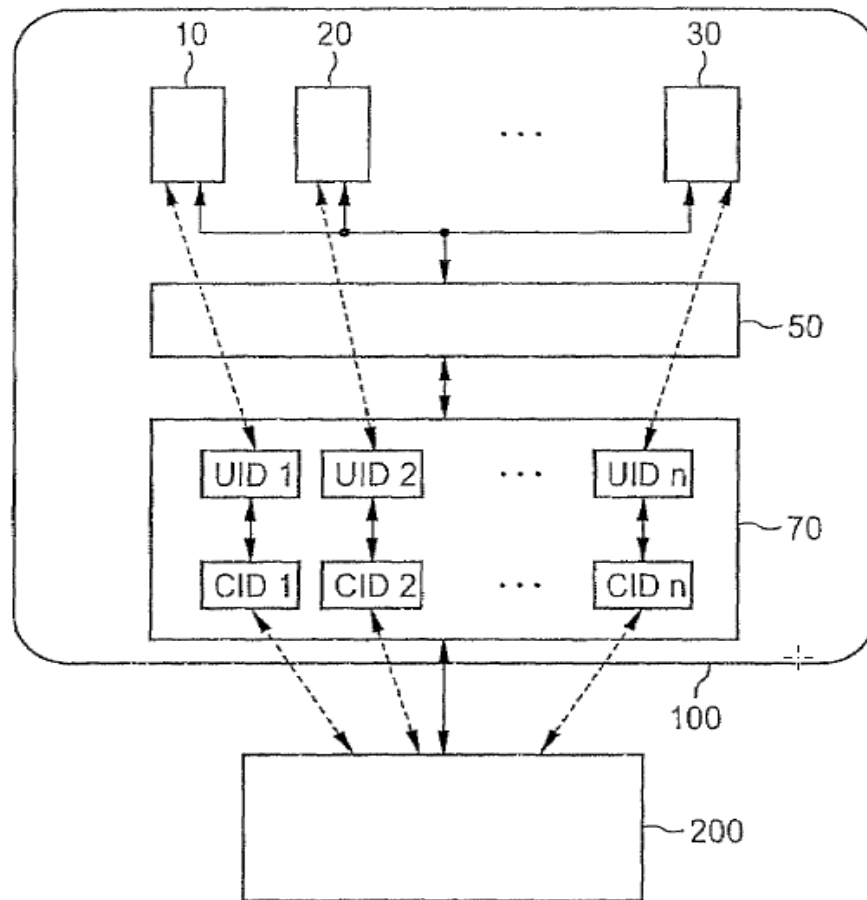


Figure 1 above illustrates data carrier 100 and reading device 200. Ex. 1001, 7:8–10. Applications 10, 20, 30 are located on the data carrier. *Id.* at 7:10–11. Toggling device 50 is set up to toggle between the different applications. *Id.* at 7:12–13. Each of the applications is assigned an identification number UID1, UID2, UIDn, numbers which are managed by communication device 70. *Id.* at 7:14–17. When the reading device enters into communication with one or more applications, the reading device can select them for further communication via the identification numbers and address them by means of dynamically assigned session numbers CID1, CID2, CIDn. *Id.* at 7:17–21.

The '706 patent discloses that the communication device 70 of data carrier 100 can be set up to store, in a nonvolatile memory, information about which of the applications 10, 20, 30 last communicated with the reading device 200. Ex. 1001, 9:5–9. This record may then be used to select the application that was most recently used; “It is also possible, however, to first generate a communication-readiness signal for that application 10, 20, 30 with which the reading device 200 actively communicated last.” *Id.* at 9:18–21.

V. ILLUSTRATIVE CLAIM

Challenged claim 1 of the '706 patent recites:

1. A method for contactless communication of a reading device with at least two communication-ready applications located on a portable data carrier, comprising the steps:

generating a first communication-readiness signal to the reading device for a first of the at least two applications, the communication-readiness signal comprising a first identification number which is assigned to the first of the at least two applications and indicates to the reading device the communication readiness of said first application, and

generating a second communication-readiness signal to the reading device for a second of the at least two applications, the second communication-readiness signal comprising a second identification number different from the first identification number, which is assigned to said second application and indicates to the reading device the communication readiness of said second application, and

storing information in a nonvolatile memory of the data carrier about which of the at least two applications was last selected for further communication by the reading device,

wherein the reading device selects for further communication one or more of the at least two applications via the identification numbers assigned to the applications.

VI. ASSERTED GROUNDS

Petitioner asserts that claims 1–3, 11, 12, 16, 18, and 20 of the ’706 patent are unpatentable on the following grounds.

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
1–3, 11, 12	103(a)	Guthery ² , Nozawa ³
16	103(a)	Guthery, Nozawa, RFID Handbook ⁴
18	103(a)	Guthery, Nozawa, Smart Card Handbook ⁵
20	103(a)	Guthery, RFID Handbook

VII. LEVEL OF ORDINARY SKILL

Petitioner identifies a person of ordinary skill as someone knowledgeable and familiar with the smart card and Radio Frequency Identifier (RFID) arts. Pet. 13. Petitioner states that such a “person would have a bachelor’s degree in electrical engineering, computer engineering, computer science, or equivalent training, and approximately two years of experience working in the electrical engineering field. Lack of work experience can be remedied by additional education, and vice versa.” *Id.* at 13. Patent Owner does not address the level of ordinary skill. *See generally*, PO Resp.

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. Because the ’249 patent has an effective filing date prior to the effective date of the applicable AIA amendment, we refer to the pre-AIA version of § 103.

² U.S. Patent No. 6,824,064 (Ex. 1005)

³ Japanese Patent Application No. 2000-163539A (Ex. 1006)

⁴ *RFID Handbook: Radio-Frequency Identification Fundamentals and Applications*, Klaus Finkenzeller, 1999 (Ex. 1007)

⁵ *Smart Card Handbook: Third Edition*, Wolfgang Rankl, 2003 (Ex. 1008)

The level of ordinary skill in the art usually is evidenced by the references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978). As Petitioner’s description of a person of ordinary skill appears commensurate with the subject matter before us, we apply Petitioner’s definition.

VIII. CLAIM CONSTRUCTION

We interpret claim terms using “the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2019). In this context, claim terms “are generally given their ordinary and customary meaning” as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (citations omitted) (en banc). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317 (citations omitted).

We construe only those claim terms that require analysis to determine whether to institute inter partes review. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that “only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy”). Any special definition for a claim term must be set forth in the specification with reasonable clarity,

deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner submits that the terms of the challenged claims should be given their plain and ordinary meaning, and no terms require specific construction. Pet. 13–14. Although we may discuss the scope of the claim language during our analysis, we agree that no specific construction is necessary for us to reach our decision.

IX. ANALYSIS

A. Legal Standards

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)); *see also* 37 C.F.R. § 42.104(b) (requiring a petition for *inter partes* review to identify how the challenged claim is to be construed and where each element of the claim is found in the prior art patents or printed publications relied upon).

A claim is unpatentable under 35 U.S.C. § 103(a) if “the differences between the subject matter sought to be patented 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 skill in the art; and (4) when in evidence, objective evidence

of obviousness or nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). An obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418.

Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2016) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)). Furthermore, Petitioner does not satisfy its burden of proving obviousness by employing “mere conclusory statements,” but “must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

B. Claims 1–3, 11, 12 As Obvious Over Guthery and Nozawa

1. Guthery – Exhibit 1005

Guthery relates to a “multi-application integrated circuit card (‘smart card’) [that] contains a plurality of application programs.” Ex. 1005, 2:42–43. Guthery discloses that its smart card can be presented to a smart card reader, which reads the smart card through wireless means or electrical contacts. *Id.* at 6:42–47. In Guthery’s system, “[w]hen a smart card is electrically activated, . . . the card manager 34 sends to the [smart card reader] an application-identification packet 60 for each application 32 on the smart card that identifies the application” with an “application index.” *Id.* at 8:32–39. The reader is then aware of each application on the smart card, and

can then select the desired application for further communication using the application index. *Id.* at 8:60–64.

To select an application with which to communicate, the reader sends a request-to-send packet to the smart card that identifies the application by its application index. Ex. 1005, 8:66–9:2. Then, the identified application generates and sends a “permission-to-send packet . . . when the application is ready” to communicate with the reader. *Id.* at 9:9–11. The permission-to-send packet “contains the application index 82 of the application sending the packet 80.” *Id.* at 9:14–16. This process flow is shown in Fig. 14A below.

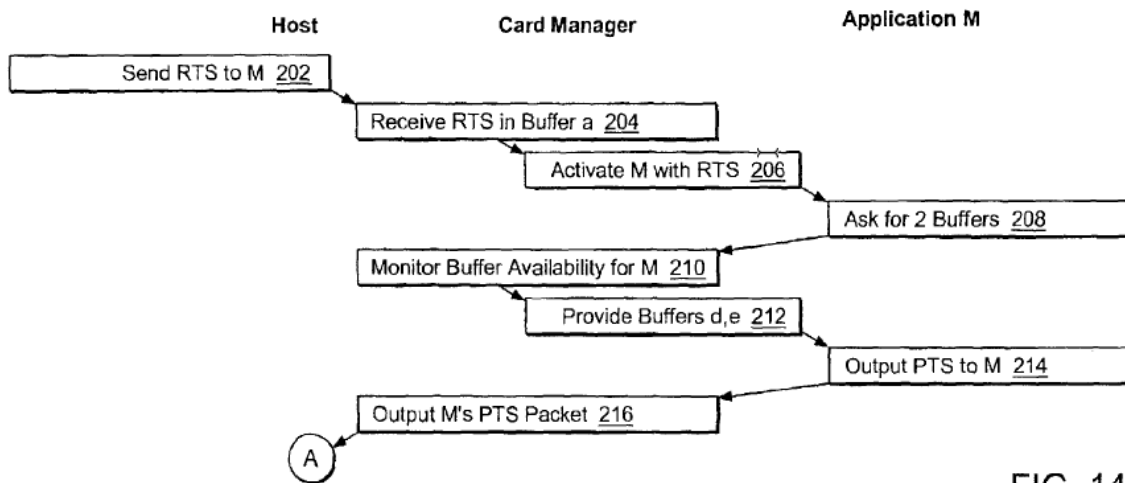


FIG. 14A

As shown in Figure 14A above, after receiving the request-to-send packet from a host, the smart card performs a series of steps before it outputs the permission-to-send packet to the host. Ex. 1005, 12:17–36. These steps include receiving the request-to-send packet in a buffer at step 204, activating application M at step 206, having application M ask for buffers at step 208, monitoring buffer availability at step 210, providing buffers at 212, and having application M output the permission-to-send packet to the card manager at step 216. *Id.*

2. *Nozawa – Exhibit 1006*

Nozawa “relates to IC cards, and particularly to an IC card having a CPU and a memory, and in which a plurality of application programs stored in the memory can be selectively executed by the CPU.” Ex. 1006 ¶ 1.

Nozawa discloses that when an external apparatus such as a reader desires to communicate with an application on the IC card, it can send an application-selection command to the IC card to select the desired application. *Id.* ¶ 6.

The IC card also has a function for automatically selecting an application having a high probability of being selected by the reader, so that, if the application that has been automatically selected by the IC card is the application that the reader desires to communicate with, then the reader does not need to send the application-selection command to the IC card. *Id.*

¶¶ 19, 22, 25. Nozawa discloses that one candidate with a high probability of being selected is the most recently selected application. *Id.* ¶ 22. Nozawa discloses maintaining a record of recently used applications in order to select the application having a high probability of being selected by the reader, such as the most recently selected or the most frequently selected application. *Id.* ¶¶ 16, 20, 22, 25.

3. *Reasons to Combine the Teachings of Guthery and Nozawa*

Petitioner contends a person of ordinary skill would have had reason to combine the teachings of Guthery and Nozawa because both references concern multi-application smart cards. Pet. 31. Petitioner contends that Guthery’s smart card waits until it receives a request-to-send packet from a smart card reader before it begins initializing the application identified in the packet. *Id.* at 32 (citing Ex. 1005, 9–12, 12:17–59, Figs. 14A, 15).

Petitioner contends that a person of ordinary skill would have recognized that this process can waste time and resources, especially in situations where

one application is utilized more than another. *Id.* (citing Ex. 1003, Phinney Decl. ¶¶ 52–53). Petitioner contends that a person of ordinary skill would have modified Guthery’s process to identify and initialize an application most likely to be selected by the smart card reader as taught by Nozawa to preemptively transmit a permission-to-send packet from the application to the reader without waiting to receive the request-to-send packet from the reader, thus improving efficiency and reducing latency. *Id.* at 33 (citing Ex. 1003, Phinney Decl. ¶¶ 55).

Petitioner contends that a person of ordinary skill would have had a reasonable expectation of success in making the combination because Nozawa’s technique was meant to improve multi-application smart card systems like Guthery’s. *Id.* at 34. According to Petitioner, Guthery includes the specific inefficiency noted by Nozawa, namely, that a waiting time is required for the smart card to receive a request-to-send packet from the reader, initialize the application identified in the packet, and transmit a response to the reader, before work can begin. *Id.*; *see id.* at 31–32 (citing Ex. 1006 ¶ 7; Ex. 1003, Phinney Decl. ¶¶ 52–53). Petitioner contends that the combination represents applying Nozawa’s known technique of automatically selecting an application based on selection history to Guthery’s multi-application smart card to yield the predictable result of initializing the selected application prior to receiving a request-to-send packet, thus improving efficiency and reducing latency at the start of a new communication session. *Id.* at 34–35 (citing Ex. 1003, Phinney Decl. ¶¶ 58–60).

Patent Owner contends that Petitioner ignores that Guthery “tightly couples the execution of applications and thereby communications with them with efficient management of the smart card’s limited RAM memory.”

PO Resp. 12 (citing Ex. 1005, 2:54–58). Patent Owner contends that an application in Guthery’s smart card may process packets after receiving all packets of a message and assembling the message, which requires multiple buffers, or may process packets as they are received, which only requires one buffer that can be reused to hold each new packet. *Id.* at 12–13 (citing Ex. 1005, 13:21–31, 13:43–52). Patent Owner contends that, without receiving a request-to-send packet from a host, the application would not know whether to request one buffer or multiple buffers. *Id.* at 14 (citing Ex. 1005, 12:65–13:4, 13:5–12, 13:46–52, Figs. 17B, 17C, 18B, and 18C). According to Patent Owner, without this information, the application would not be able to determine an efficient buffer request, which runs contrary to Guthery’s goal of efficiently using the limited RAM available on the smart card. *Id.* Patent Owner contends that Petitioner’s contentions show that a person of ordinary skill could have made the combination, not that a such person would have made the combination. *Id.* at 15–16.

Petitioner contends that Patent Owner does not address the combination proposed in the Petition. Pet. Reply 1. Petitioner contends that Guthery teaches that a host sends a request-to-send packet to a smart card in order to select an application, then the selected application responds with a permission-to-send packet. *Id.* at 1–2 (citing Ex. 1005, 8:65–9:2, 9:9–12, Fig. 14A). Petitioner contends that Nozawa teaches a smart card that automatically selects an application having a high probability of being selected by the host in order to reduce waiting time. *Id.* at 2 (citing Ex. 1006 ¶¶ 7, 19). Petitioner contends that a person of ordinary skill in the art at the time of invention would have modified Guthery’s smart card to automatically select an application that has a high probability of being utilized as taught by Nozawa for the benefit of beginning the initialization

process described in Figures 14 and 15 of Guthery without waiting for a request-to-send packet identifying the application as taught by Nozawa. *Id.* at 2–3 (citing Pet. 33).

Petitioner contends that the combination is based on Guthery’s disclosure of a request-to-send packet that does not include a message size or information used in determining buffer allocation. Pet. Reply 4–5 (citing Ex. 1005, 8:65–9:12, Fig. 8). Petitioner contends that in this embodiment, the application determines its memory requirements without message size information from the host. *Id.* at 5–6 (citing Ex. 1005, 9:25–31, 12:22–29). Petitioner contends that Patent Owner relies on an alternative embodiment in Guthery that is not part of the combination. Pet. Reply 4. In particular, Petitioner contends that Guthery discloses that “[i]n one embodiment, the original request-to-send packet contains an indication of the size of the message.” *Id.* at 7 (citing Ex. 1005, 12:65–13:12). Petitioner contends that this disclosure of the request-to-send packet that contains additional information about the message size cited by Patent Owner is presented in the context of “one embodiment” after an extensive explanation of a main embodiment in which the request-to-send packet does not contain the additional information. *Id.* Petitioner contends that Guthery’s use of “one embodiment” in this context indicates that the additional information in the request-to-send packet cited by Patent Owner is optional. *Id.*

Patent Owner contends that the different embodiments described by Guthery are not actually different embodiments, but rather, are specific implementations of aspects or features of Guthery’s invention. PO Sur-Reply 6. Patent Owner contends that Guthery does not differentiate between a preferred, or main, embodiment and an alternative embodiment. *Id.* at 7–10.

In particular, Patent Owner contends that the packet structure shown in Figure 5 includes a bit to indicate whether the packet either is not the last packet or is the last (or only) packet in a series of packets. PO Sur-Reply 7–8 (citing Ex. 1005, 7:57–61). Patent Owner emphasizes Guthery’s disclosure of several exemplary timelines shown in Figures 14–18, and contends that each of these Figures illustrates the operation of an embodiment for an exemplary case. *Id.* at 8–10. Patent Owner contends that Guthery contemplates not only single packet communications between the host and an application as described by Figures 14 and 15, but also contemplates multi-packet input from the host as described by Figures 17 and 18. *Id.* at 10–13.

According to Patent Owner, for the multi-packet embodiment, the application would not know whether an entire message comprising multiple packets must be received before processing by the smart card as shown in Figure 17, or whether each packet of the message can be processed by the smart card as they are received as shown in Figure 18, unless the application receives the request-to-send packet that includes information about the size of the message. PO Sur-Reply 13–15. Patent Owner contends that, without information about the size of the message from the request-to-send packet, the application would not know whether it needs to request only one buffer, or multiple buffers. *Id.* at 16. Patent Owner contends that this would render Guthery’s application inoperable for its intended purpose of making the most efficient use of the limited RAM on the smart card. *Id.* at 15–16 (citing Ex. 1005, 10:42–43, 10:62–64).

We disagree with Patent Owner, that Guthery only describes different implementations of aspects and features of a single embodiment. For example, Guthery discloses that features of “the invention will be apparent

from the following more particular descriptions of preferred embodiments of the invention, as illustrated in the accompanying drawings.” Ex. 1005, 5:7–10; *see id.* at 17:13–14 (“this invention has been particularly shown and described with references to preferred embodiments thereof.”). Guthery then describes each of Figures 14 through 18 as “an embodiment.” *Id.* at 5:46–66.

Further, although Patent Owner is correct in stating that Guthery discloses an embodiment of a request-to-send packet that includes size information, we do not agree that Guthery requires this information to be included in the request-to-send packet. Rather, we agree with Petitioner, that Guthery’s description of a request-to-send packet as shown in Figure 8, which does not include information about the size of the message, indicates that the size information is not required by the request-to-send packet in at least some embodiments of Guthery. Ex. 1005, 8:65–9:12, Fig. 8; *see id.* at 8:25–29 (The “present invention is not limited to the packet types discussed and in fact assumes that new types can and will be defined in the future as needed.”); 7:43–50 (“In one particular embodiment,” packets have a fixed number of bytes, but “in other embodiments, packet types may have different sizes.”).

We agree with Petitioner, that Guthery discloses multiple embodiments, and the combination made by Petitioner relies on the embodiments shown in Figures 14 and 15, where the requested application only needs two buffers and therefore would know, without receiving information from the request-to-send packet, to ask for two buffers. Ex. 1005, 12:19–59. We find that a person of ordinary skill, in combining the teachings in Guthery with Nozawa to identify and initialize an application most likely to be selected by the smart card reader, would rely on (a)

Guthery's teaching of a request-to-send packet that does not include information about the size of a message as shown in Figure 8, (b) Guthery's teaching of an application programmed to determine its own memory requirements (Ex. 1005, 9:25–31), and (c) Guthery's teaching of an application that only needs two buffers as shown in Figures 15A-15D, to preemptively transmit a permission-to-send packet from the application to the reader without waiting to receive the request-to-send packet from the reader, to yield the benefit of improving efficiency and reducing latency as taught by Nozawa. *See* Phinney Decl. ¶¶ 55 (testifying that Guthery's system would preemptively prepare the buffers and transmit the permission-to-send packet without waiting to receive the request-to-send packet).

Even accepting Patent Owner's contention, that the invention of Guthery requires a device that implements all embodiments shown in Figures 14 through 18, we still find that the combination would yield a benefit for the embodiments of Figures 14 and 15 for the reasons discussed above. Petitioner contends that the combination of Guthery and Nozawa teaches that when the host seeks to communicate with an application other than the application automatically selected by the smart card, the smart card would receive the normal request-to-send packet identifying the desired application, and the smart card would initialize the desired application. Pet. 33–34 (citing Ex. 1003 ¶ 56; Ex. 1006 ¶ 19; Ex. 1005, Fig. 15). Dr. Phinney testifies that “if Guthery's modified smart card did not select the correct application, the host would then send the typical Request-to-Send packet containing the application index of the desired application.” Ex. 1003 ¶ 56.

We agree with Petitioner, that Patent Owner's contentions regarding the efficient use of limited RAM in Guthery and the role and necessity of various types of messages in Guthery's buffer allocation and communication

processes are attorney argument that cannot take the place of objective evidence. Pet. Reply 13–14 (citing PO Resp. 12–13); *see Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1380 (Fed. Cir. 2009). Further, Patent Owner’s contentions are inconsistent with the credible and factually supported testimony of Dr. Phinney and the teachings of Guthery and Nozawa. Ex. 1003 ¶¶ 51–60; Ex. 1005, 3:24–26, 7:7–9, 8:30–9:48, 11:4–5, 12:17–59, Figs. 14 and 15; Ex. 1006 ¶¶ 1, 7, 19, 20, 22, 31.

We credit the testimony of Dr. Phinney cited above in finding that if Guthery’s modified smart card selects an application that requires a request-to-send packet, such as an application that implements the methods shown in Figures 17 and 18, the host would send the typical request-to-send packet containing the necessary information for the application to ask for the appropriate amount of buffers needed to achieve its intended purpose of making the most efficient use of the limited RAM on the smart card. Thus, even under Patent Owner’s understanding of Guthery, we find that a person of ordinary skill would have had reason to combine the teachings of Nozawa with those of Guthery because the combination would result in the efficiency of eliminating the waiting time needed to receive the request-to-send packet for the embodiments shown in Figures 14 and 15, and would result in making the most efficient use of the limited RAM on the smart card for the embodiments shown in Figures 14–18 of Guthery. In addition, because the combination of Guthery with Nozawa, even under Patent Owner’s understanding of Guthery, meets the claim for the embodiments of Figures 14 and 15 of Guthery, the combination is sufficient to show obviousness. *See Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1002 (Fed. Cir. 2016) (“[C]ombinations of prior art that sometimes meet the claim elements

are sufficient to show obviousness It is enough that the combination would sometimes perform all the method steps.”).

4. *Claim 1*

The preamble of claim 1 recites a “method for contactless communication of a reading device with at least two communication-ready applications located on a portable data carrier, comprising the steps.” Petitioner contends that Guthery teaches the preamble in describing a smart card having a plurality of applications, where the smart card wirelessly transmits permission-to-send packets to a smart card reader to indicate that the applications are ready for communication. *Id.* at 35–38 (citing Ex. 1005, 2:52–54, 3:44–48, 6:42–46, 7:3–9, 9:9–12, Figs. 1, 2, 15A–15C). Patent Owner does not dispute that Guthery teaches the features recited in the preamble. We find that Petitioner has demonstrated that Guthery teaches the features recited in the preamble of claim 1.⁶

Claim 1 recites “generating a first communication-readiness signal to the reading device for a first of the at least two applications,” where the communication-readiness signal comprises “a first identification number which is assigned to the first of the at least two applications and indicates to the reading device the communication readiness of said first application.” Petitioner contends that Guthery teaches this limitation in describing that the application transmits a permission-to-send packet that indicates the application is ready to receive information, where the permission-to-send packet includes an application index that identifies the application. Pet. 38–41 (citing Ex. 1005, 3:27–40, 3:44–48, 9:7–12, 9:14–16, 9:35–39, 12:30–36,

⁶ Because Petitioner has shown that the features in the preamble are satisfied by the prior art, we need not determine whether the preamble is limiting. See *Vivid Techs.*, 200 F.3d at 803.

Fig. 9). Patent Owner does not expressly dispute that Guthery teaches this limitation of claim 1. We find that Petitioner has demonstrated that Guthery teaches this limitation of claim 1.

Claim 1 recites “generating a second communication-readiness signal to the reading device for a second of the at least two applications,” where the second communication-readiness signal comprises “a second identification number different from the first identification number, which is assigned to said second application and indicates to the reading device the communication readiness of said second application.” Petitioner contends that Guthery teaches this limitation in describing that a first application M on the smart card generates a first permission-to-send packet when it is ready to receive data, and a second application N generates a second permission-to-send packet when it is ready to receive data, where each permission-to-send packet carries the corresponding application’s unique index. Pet. 41–44 (citing Ex. 1005, 3:44–48, 12:54–59, Figs. 15A–15C). Patent Owner does not expressly dispute that Guthery teaches this limitation. We find that Petitioner has demonstrated that Guthery teaches this limitation of claim 1.

Claim 1 recites “storing information in a nonvolatile memory of the data carrier about which of the at least two applications was last selected for further communication by the reading device.” Petitioner contends that the combination of Guthery and Nozawa teaches this limitation. Pet. 44–47. Petitioner contends that Guthery teaches that the smart card includes an EEPROM non-volatile memory. *Id.* at 44–45 (citing Ex. 1005, 6:62–66). Petitioner contends that Nozawa teaches storing a time and date in EEPROM each time a specific application is selected, so that the smart card can automatically select the application that was most recently selected by the

smart card reader. *Id.* at. 45–47 (citing Ex. 1006 ¶¶ 9, 16, 20–22). Other than the arguments concerning the reasons to combine, Patent Owner does not expressly dispute that the combination of Guthery and Nozawa teaches this limitation of claim 1. We find that Petitioner has demonstrated that the combination of Guthery and Nozawa teaches this limitation of claim 1.

Claim 1 recites “wherein the reading device selects for further communication one or more of the at least two applications via the identification numbers assigned to the applications.” Petitioner contends that the combination of Guthery and Nozawa teaches this limitation. Pet. 47–50. Petitioner contends that Guthery’s smart card as modified by the teachings of Nozawa preemptively sends a permission-to-send packet for an initial application M without waiting for a request-to-send packet. Pet. 48 (citing Ex. 1003, Phinney Decl. ¶ 82). Petitioner contends that for further communication with another application N, Guthery’s smart card would wait to receive a request-to-send packet for N as normal. *Id.* at 48–50 (citing Ex. 1005, Figs. 15A, 15B; Ex. 1003, Phinney Decl. ¶¶ 82–83). Patent Owner does not expressly dispute that the combination of Guthery and Nozawa teaches this limitation. We find that Petitioner has demonstrated that the combination of Guthery and Nozawa teach this limitation of claim 1.

Patent Owner argues generally that the Petition does not offer any expert-supported positions, because the testimony of Dr. Phinney is either identical, nearly identical, or substantially identical to the Petition. PO Sur-Reply 3. Patent Owner contends that even though the opinions that Dr. Phinney submitted in his Declarations were his own, the Declarations were initially drafted by attorneys. *Id.* Patent Owner contends that Dr. Phinney does not cite to any additional supporting evidence or provide any technical reasoning to support his statements, all of which bear the hallmark of being

copied and pasted from the draft of the Petition. *Id.* at 34 (citing *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022)); *see id.* at 47.

We do not accord the testimony of Dr. Phinney little or no weight simply because it matches what Petitioner states in the Petition. The *Xerox* case cited by Patent Owner does not require or indicate otherwise. *See Xerox* at 1517 (noting that the deficiencies with expert testimony are that they are conclusory and lacking supporting evidence or technical reasoning.). Dr. Phinney’s testimony apprises us of why one of ordinary skill in the art would have understood the assertions made in the Petition, and his testimony is supported by evidence. We find that the declarations of Dr. Phinney are based on specific factual disclosures in the evidence of record. Therefore, we credit Dr. Phinney’s declaration testimony for the matters asserted based on the evidence and technical reasoning provided therein.

Having considered the arguments and evidence of record, we determine that Petitioner has demonstrated by a preponderance of the evidence that a person of ordinary skill would have had reason to combine the teachings of Guthery and Nozawa and that their combined teachings would have suggested the limitations of claim 1 to such an ordinarily skilled artisan.

5. *Claim 2*

Claim 2 depends from claim 1 and recites “wherein upon new communication of the reading device with the data carrier, a communication-readiness signal is emitted first for one of the at least two applications that is different from the application designated by the stored information.” Petitioner contends that Guthery as modified by Nozawa

teaches transmitting a permission-to-send packet for the application having the highest selection frequency rather than for the application designated by the stored information as the most recently used. Pet. 50–52 (citing Ex. 1006 22, 25; Ex. 1003, Phinney Decl. ¶¶ 87–91). Patent Owner does not present arguments explicitly drawn to claim 2. We find that Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Guthery and Nozawa and that their combined disclosures teach the limitations recited in claims 2.

6. *Claim 3*

Claim 3 depends from claim 1 and recites “wherein, upon new communication of the reading device with the data carrier, a communication-readiness signal is emitted first for the application with which active communication was effected last.” Petitioner contends that Guthery as modified by Nozawa teaches transmitting a permission-to-send signal for the most recently used application. Pet. 52–54 (citing Ex. 1003, Phinney Decl. ¶¶ 92–98). Patent Owner does not present arguments explicitly drawn to claim 3. We find that Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Guthery and Nozawa and that their combined disclosures teach the limitations recited in claim 3.

7. *Claim 11*

Claim 11 recites a “contactlessly communicating portable data carrier, comprising at least two applications stored thereon and a communication device configured to control communication between a reading device and the at least two applications.” Petitioner contends that Guthery teaches this limitation in disclosing a smart card with a plurality of applications, where the smart card has a card manager that utilizes a port and driver to

communicate wirelessly with a smart card reader. Pet. 54–57 (citing Ex. 1005, 2:52–54, 6:42–46, 6:60–7:9, 7:24–32, Figs. 1, 2). Patent Owner does not expressly dispute that Guthery teaches this limitation. We find that Petitioner has demonstrated that Guthery teaches this limitation of claim 11.

Claim 11 recites “wherein the communication device is set up to generate communication-readiness signals to the reading device which in each case indicate to the reading device a communication readiness for one of the applications and comprise an identification number assigned to the corresponding communication-readiness application.” Petitioner contends that Guthery teaches this limitation in describing that each permission-to-send packet includes an application index identifying a corresponding application that is ready to receive information. Pet. 57–62 (citing Ex. 1005, 3:27–40, 3:44–48, 7:25–32, 9:7–12, 9:14–16, 9:35–39, 12:30–36, 12:54–59, Figs. 9, 15A–15C). Patent Owner does not expressly dispute that Guthery teaches this limitation. We find that Petitioner has demonstrated that Guthery teaches this limitation of claim 11.

Claim 11 recites “wherein the communication device is set up to store information in a nonvolatile memory of the data carrier about which of the at least two applications last communicated with a reading device.” Petitioner contends that Guthery as modified by Nozawa teaches storing information about the most recently selected application. Pet. 62–63 (citing Ex. 1003, Phinney Decl. ¶¶ 111–112). Patent Owner does not expressly dispute that the combination of Guthery and Nozawa teaches this limitation. We find that Petitioner has demonstrated that the combination of Guthery and Nozawa teaches this limitation of claim 11.

Having considered the arguments and evidence of record, we determine that Petitioner has demonstrated by a preponderance of the

evidence that a person of ordinary skill would have had reason to combine the teachings of Guthery and Nozawa and that their combined teachings would have suggested the limitations of claim 1 to such an ordinarily skilled artisan.

8. *Claim 12*

Claim 12 depends from claim 11 and recites “wherein the communication device is set up to emit, upon new contacting of a reading device with the data carrier, a communication-readiness signal first for one of the at least two applications that is different from the application designated by the stored information.” Petitioner contends that this limitation is similar to that recited in claim 2, and that the combination of Guthery and Nozawa teaches this limitation for the reasons given in Petitioner’s analysis of claim 2. Pet. 63–64 (citing Ex. 1003, Phinney Decl. ¶ 113). Patent Owner does not expressly dispute that the combination of Guthery and Nozawa teaches this limitation. We find that Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Guthery and Nozawa and that their combined disclosures teach the limitations recited in claim 12.

C. *Claim 16 As Obvious Over Guthery, Nozawa, and RFID Handbook*

1. *RFID Handbook – Exhibit 1007*

The RFID Handbook describes memory structures of portable data carriers such as smart cards. Ex. 1007, 14, 15. The RFID Handbook explains that “it is possible to divide the entire memory into small units called segments, and protect each of these from unauthorized access with a separate key.” Ex. 1007, 15. Segmented memory “permits data from different applications to be stored completely separately.” *Id.* As a result,

“a reader belonging to one application can only gain access to its ‘own’ segment if it only knows the application’s own key.” *Id.* at 16.

2. *Reason to Combine the Teachings of RFID Handbook with Guthery and Nozawa*

Petitioner contends that Guthery discloses a smart card including a non-volatile EEPROM memory and one or more applications. Pet. 67 (citing Ex. 1005, 6:60–7:4). Petitioner contends that a person of ordinary skill would have recognized that the applications would have been stored in the non-volatile EEPROM memory, so that the applications remain on the card even when the card is powered down. *Id.* at 67–68 (citing Ex. 1003, Phinney Decl. 122). Petitioner contends that the RFID Handbook teaches dividing EEPROM memory into segments to permit data from different applications to be stored separately to reduce the risk of unauthorized access. *Id.* at 68 (citing Ex. 1007 15–16). Petitioner contends that a person of ordinary skill would have segmented the memory in the EEPROM of Guthery such that each application corresponds to its own segment as taught by the RFID Handbook to yield the benefit of effectively isolating each application to provide enhanced security as taught by the RFID Handbook. *Id.* (citing Ex. 1003, Phinney Decl. ¶¶ 123–124). Petitioner contends that a person of ordinary skill would have had a reasonable expectation of success when combining the teachings of RFID Handbook and Guthery because the RFID Handbook describes techniques commonly implemented on smart cards such as Guthery’s. *Id.* at 68–69 (citing Ex. 1003, Phinney Decl. ¶ 125).

Patent Owner contends that the EEPROM is not the only memory on Guthery’s smart card. PO Resp. 19. Patent Owner contends that Petitioner ignores the RAM through which all communications to and from the host

are sent. *Id.* Patent Owner contends that Guthery's RAM is so limited that it could not possibly be segmented. *Id.* Patent Owner contends that Petitioner's suggestion of only segmenting Guthery's EEPROM would still leave the RAM subject to security issues and would leave all data communicated between the smart card and the host vulnerable. *Id.* Patent Owner concludes that a person of ordinary skill would not have recognized any benefit from modifying only Guthery's EEPROM, and would not have been motivated to make the proposed combination. *Id.*; PO Sur-Reply 17–18.

Petitioner contends that Patent Owner ignores the actual combination proposed in the Petition. Pet. Reply 13. Petitioner contends that even if Patent Owner's assessment of security vulnerabilities in Guthery's RAM were accurate, this assessment is irrelevant to the motivation to improve security in Guthery's separate EEPROM. *Id.* at 12. Petitioner contends that a person of ordinary skill would have been motivated to improve aspects of a system even if other possible challenges would still exist. *Id.* Petitioner contends that the Petition states that “[i]t would have been obvious, beneficial, and predictable for the EEPROM of Guthery's smart card to be divided into segments, each segment corresponding to only one application—for example, to improve security of addressing the segmenting of Guthery's EEPROM memory.” *Id.* (citing Pet. 66). Petitioner contends that a person of ordinary skill would have found this improvement to the EEPROM beneficial regardless of the security condition of Guthery's RAM. *Id.*

Petitioner also contends that Patent Owner relies on inaccurate characterizations of Guthery. Pet. Reply 13. Petitioner contends that Guthery teaches logically dividing its RAM into several buffers, where one

or more buffers can be assigned to an application. *Id.* at 10–11 (citing Ex. 1005, 4:1–8, 7:12–15, Fig. 3). Petitioner contends that Guthery’s RAM is always segmented by application. *Id.* at 12. Petitioner contends that the Petition did not have to propose modifying Guthery’s RAM because Guthery’s RAM is always segmented. *Id.*

We disagree with Patent Owner’s contentions. Claim 16 recites “a memory which is divided into sectors, each of the sectors having no more than one of the at least two applications stored therein.” The claim does not require the sectors to store data sent to and from an application, rather, the claim only requires each sector to store no more than one application. The RAM of Guthery stores data, not applications. Specifically, the RAM stores data sent from outside the smart card to an application and data from an application on the smart card to an outside entity. Ex. 1005, 7:24–33; 9:18–34, 9:65–10:3; 12:1–53. The applications are stored in EEPROM, not RAM. Ex. 1005, 6:60–7:9, Fig. 2; Ex. 1003 ¶¶ 122, 129; *see* Ex. 1006 ¶ 3, Fig. 2. Patent Owner’s contentions regarding the RAM of Guthery are not commensurate with the scope of the claim. We agree with Petitioner, and Patent Owner does not expressly dispute, that the segmented EEPROM memory taught by the combination of Guthery and RFID Handbook stores the applications, with “each of the sectors having no more than one of the at least two applications stored thereon.” Ex. 1003 ¶¶ 128–133.

We disagree with Patent Owner’s contention that a person of ordinary skill would not have segmented Guthery’s EEPROM because this would still have left the RAM subject to security issues and all data communicated between the smart card and the host vulnerable. Patent Owner’s contention does not address Petitioner’s contention that the combination would improve security of the applications stored in the EEPROM. We agree with

Petitioner, that a person of ordinary skill would have found this security improvement to the EEPROM beneficial for the security of the applications regardless of the security condition of data stored in Guthery's RAM.

Even under Patent Owner's construction of the claim, which we do not adopt, we disagree with Patent Owner's contention that the buffers of Guthery are shared among applications. PO Sur-Reply 17–18. Guthery discloses assigning one or more buffers to an application, not to multiple applications. Ex. 1005, 7:12–15. We agree with Petitioner, that even under Patent Owner's construction of the claim to encompass data sent to and from an application through RAM, Guthery teaches that its RAM is segmented by application. Pet. Reply 10–12 (citing Ex. 1005, 4:1–8, 7:12–15, Fig. 3). Further, we agree with Petitioner, that Patent Owner presents only attorney argument, but does not present objective evidence regarding the alleged security issues of Guthery's RAM. Pet. Reply 12–13 (citing PO Resp. 18–19). In particular, Patent Owner's contention that all data communicated between the smart card and the host through the RAM would be vulnerable is inconsistent with Guthery's disclosure that the data stored in the RAM can be encrypted. Ex. 1005, 13:26–30.

We rely on the testimony of Dr. Phinney in finding that a person of ordinary skill would have divided the EEPROM of Guthery into segments as taught by RFID Handbook for the benefit of reducing the risk of unauthorized access as taught by RFID Handbook. Ex. 1003 ¶¶ 120–124. We find that the combination represents applying the known technique of segmenting EEPROM as taught by RFID Handbook to Guthery's smart card ready for an improvement to security, to yield the predictable result of providing enhanced security by isolating the applications as taught by RFID Handbook. *Id.* at ¶¶ 125–126.

3. *Claim 16*

Claim 16 depends from claim 11 and recites “including a memory which is divided into sectors, each of the sectors having no more than one of the at least two applications stored therein.” Petitioner contends that Guthery as modified by the RFID Handbook teaches a smart card including an EEPROM divided into segments, where each application corresponds to its own segment in order to reduce the risk of unauthorized access. Pet. 70–73 (citing Ex. 1005, 6:64–66, 7:3–9; Ex. 1007, 15–17; Ex. 1003, Phinney Decl. ¶¶ 127–33). Patent Owner does not expressly dispute that the combination of Guthery and Nozawa teaches this limitation.

We find that Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Guthery, Nozawa, and the RFID Handbook, and that their combined disclosures teach the limitations recited in claim 16.

D. Claim 18 As Obvious Over Guthery and the Smart Card Handbook

1. *Smart Card Handbook – Exhibit 1008*

The Smart Card Handbook is a “book ... written for students, engineers and technically minded persons who want to learn more about smart cards.” Ex. 1008, 5. One aspect of smart cards described by the Smart Card Handbook is the relationship between a smart card and a SIM (subscriber identity module) card in a mobile phone. *Id.* at 13. The Smart Card Handbook describes a SIM card as a type of smart card that performs communication and security-related tasks within the mobile phone. *Id.* at 13. The Smart Card Handbook describes a SIM card as a mandatory security module within a mobile phone. *Id.* at 13.

2. *Reason to Combine the Teachings of Guthery and the Smart Card Handbook*

Petitioner contends that Guthery describes using a smart card as a SIM card and the Smart Card Handbook provides additional implementation details on using smart cards as SIM cards in accordance with GSM standards to act as a security module and to request services from a handset. Pet. 75–78 (citing Ex. 1005, 6:37–41; Ex. 1008, 10, 11, 13; Ex. 1003, Phinney Decl. ¶¶ 141, 143, 145). Petitioner contends that a person of ordinary skill would have had a reasonable expectation of success in combining the teachings of Guthery and the Smart Card Handbook because doing so would be applying GSM 11.14 standard commands to Guthery’s GSM 11.14 SIM card. *Id.* at 78 (citing Ex. 1005, 1:66–2:4, 8:9–10; Ex. 1008, 11). Petitioner contends that the combination represents applying the known technique of configuring a SIM card as a security module as taught by the Smart Card Handbook to Guthery’s known SIM card within a mobile phone to comply with GSM standards. *Id.* at 78 (citing Ex. 1003, Phinney Decl. ¶¶ 140–147). Patent Owner does not dispute Petitioner’s reason to combine. *See* Pet. Reply 14. We find that a person of ordinary skill would have had reason to combine the teachings of Guthery and the Smart Card Handbook.

3. *Claim 18*

Claim 18 recites a “contactlessly communicating portable data carrier, comprising at least two applications stored thereon and a communication device configured to control communication between a reading device and the at least two applications.” Petitioner contends that claim 11 recites a similar limitation, and that Guthery teaches this limitation for the reasons given in Petitioner’s analysis of claim 11. Pet. 78 (citing Pet. 54–56; Ex. 1003, Phinney Decl. ¶ 148). Patent Owner does not expressly dispute

that Guthery teaches this limitation. We find that Petitioner has demonstrated that Guthery teaches this limitation of claim 18.

Claim 18 recites “wherein the communication device is set up to generate communication-readiness signals to the reading device which in each case indicate to the reading device a communication readiness for one of the applications and comprise an identification number assigned to the corresponding communication-readiness application.” Petitioner contends that claim 11 recites a similar limitation, and that Guthery teaches this limitation for the reasons given in Petitioner’s analysis of claim 11. Pet. 78–79 (citing Pet. 57–62; Ex. 1003, Phinney Decl. ¶ 149). Patent Owner does not expressly dispute that the combination of Guthery teaches this limitation. We find that Petitioner has demonstrated that Guthery discloses this limitation of claim 18.

Claim 18 recites “wherein the data carrier is configured as a security module in a device comprising a communication device configured for contactless communication, the security module having software configured to communicate contactlessly via the communication device of the device.” Petitioner contends that the combination of Guthery and the Smart Card Handbook teaches a smart card configured as a security module when used as a SIM card in a mobile phone, and that the mobile phone would communicate wirelessly. Pet. 80–81 (citing Ex. 1003, Phinney Decl. ¶¶ 152–153). Petitioner contends that Guthery’s card manager would manage all communications to and from the smart card implemented as a SIM card in a mobile phone. *Id.* at 81–84 (citing Ex. 1003, Phinney Decl. ¶¶ 156–157). Patent Owner does not expressly dispute that the combination of Guthery and the Smart Card Handbook teaches this limitation. We find

that Petitioner has demonstrated that the combination of Guthery and the Smart Card Handbook teaches this limitation of claim 18.

We find that Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Guthery, Nozawa, and the RFID Handbook, and that their combined disclosures teach the limitations recited in claim 18.

E. Claim 20 As Obvious Over Guthery and the RFID Handbook

Claim 20 recites a “contactlessly communicating portable data carrier, comprising at least two applications stored thereon and a communication device configured to control communication between a reading device and the at least two applications.” Petitioner contends that claim 11 recites a similar limitation, and that Guthery teaches this limitation for the reasons given in Petitioner’s analysis of claim 11. Pet. 84 (citing Pet. 54–56; Ex. 1003, Phinney Decl. ¶ 159). Patent Owner does not expressly dispute that Guthery teaches this limitation. We find that Petitioner has demonstrated that Guthery discloses this limitation of claim 20.

Claim 20 recites “wherein the communication device is set up to generate communication readiness signals to the reading device which in each case indicate to the reading device a communication readiness for one of the applications and comprise an identification number assigned to the corresponding communication-readiness application.” Petitioner contends that claim 11 recites a similar limitation, and that Guthery teaches this limitation for the reasons given in Petitioner’s analysis of claim 11. Pet. 84 (citing Pet. 57–62; Ex. 1003, Phinney Decl. ¶ 160). Patent Owner does not expressly dispute that Guthery teaches this limitation. We find that Petitioner has demonstrated that Guthery discloses this limitation of claim 20.

Claim 20 recites “wherein the data carrier is configured as an electronic device with a contactless interface for communication with a reading device and with a plurality of memories, each of the memories having no more than one of the at least two applications stored therein in each case.” Petitioner contends that the combination of Guthery describes a smart card having multiple applications that wirelessly communicate with a smart card reader, and the RFID Handbook teaches partitioning the memory of the smart card into segments, such that each application corresponds to its own segment, in order to yield the benefit of reducing the risk of unauthorized access as discussed in Petitioner’s analysis of claim 16. Pet. 85–88 (citing Pet. 66–69; Ex. 1003, Phinney Decl. ¶¶ 166–167). Patent Owner does not expressly dispute that the combination of Guthery and the RFID Handbook teaches this limitation. We find that Petitioner has demonstrated that the combination of Guthery and the RFID Handbook teaches this limitation of claim 20.

Patent Owner’s contentions that a person of ordinary skill would not have combined the teachings of Guthery and the RFID Handbook are the same as those presented by Patent Owner regarding ground 2. PO Resp. 16–19. We disagree with Patent Owner for the reasons given in our analysis of ground 2 above. We find that Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Guthery and the RFID Handbook, and that their combined disclosures teach the limitations recited in claim 20.

X. ANALYSIS OF THE CONTINGENT MOTION TO AMEND

In *Aqua Products, Inc. v. Matal*, 872 F.3d 1290 (Fed. Cir. 2017), the Federal Circuit addressed the burden of persuasion that the Board applies when considering the patentability of substitute claims presented in a motion

to amend filed under 35 U.S.C. § 316(d) in an *inter partes* review. The lead opinion concludes with the following:

The only legal conclusions that support and define the judgment of the court are: (1) the PTO has not adopted a rule placing the burden of persuasion with respect to the patentability of amended claims on the patent owner that is entitled to deference; and (2) in the absence of anything that might be entitled to deference, the PTO may not place that burden on the patentee.

Aqua Prods., 872 F.3d at 1327.

In accordance with *Aqua Products*, Patent Owner does not bear the burden of persuasion to demonstrate the patentability of substitute claims presented in a motion to amend. Rather, the burden of persuasion ordinarily will lie with Petitioner to show that any proposed substitute claims are unpatentable by a preponderance of the evidence. The Board itself also may justify any finding of unpatentability by reference to evidence of record in the proceeding under limited circumstances, for example, when a Petitioner ceases to participate. *Hunting Titan, Inc. v. DyanEnergetics Europe GmbH*, IPR2018-00600, Paper 67, 25–26 (PTAB July 6, 2020) (precedential) (explaining that the Board may raise grounds of unpatentability not raised, or insufficiently developed by, a petitioner “for example, where the petitioner ceased to participate in the proceeding”). Ultimately, the Board determines whether substitute claims are unpatentable by a preponderance of the evidence based on the entirety of the record, including any opposition made by the Petitioner. *See Lectrosonics, Inc. v. Zaxcom, Inc.*, Case IPR2018-01129, -01130, Paper 15 at 4 (PTAB Feb. 25, 2019) (precedential).

Patent Owner proposes cancelling challenged claims 11, 12, 18, and 20 and substituting claims 23–26. Mot. 1. Substitute claim 23 is reproduced below.

23. (Proposed substitute for claim 11) A contactlessly communicating portable data carrier, comprising at least two applications stored thereon and a communication device configured to control communication between a reading device and the at least two applications,

wherein the communication device is set up to generate communication readiness signals to the reading device which in each case indicate to the reading device a communication readiness for one of the applications and comprise an identification number assigned to the corresponding communication-readiness application, ~~and~~

wherein after selection of one of the plurality of applications, subsequent communication between the reading device and the selected application takes place without requiring any further steps, and

wherein the communication device is set up to store information in a nonvolatile memory of the data carrier about which of the at least two applications last communicated with a reading device.

A. Whether the Substitute Claims Contain New Matter

Petitioner contends that substitute claims 23–26 contain new subject matter. Opp. 3–5; *see* 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii).

Independent claims 23, 25, and 26

Proposed substitute claims 23, 25, and 26 each recite the “wherein after selection of one of the plurality of applications, subsequent communication between the reading device and the selected application takes place without requiring any further steps.” Mot. App’x A 1, 2, 3. For support, Patent Owner cites paragraph 21 of the original disclosure of the ’706 patent, which states, among other things, that “[w]hen an application has been selected for further communication by the reading device, said

communication takes place subsequently without requiring any further steps.” Mot. 4 (citing Ex. 1002, 290 (Spec. ¶ 21)).

Petitioner argues that “[a]lthough the new claim language and the cited support both describe (i) an application ‘selection’ and (ii) ‘communication’ that takes place ‘without requiring any further steps,’ the relationship between these requirements is fundamentally different in the claim.” Opp. 3. Petitioner then makes several assertions in support of its position:

(1) [T]here is no previous recitation of a “*selection*” in claim 23, even though the claim is directed to functionality that happens “*after selection*” (*id.*);

(2) The claim doesn’t tell us *when* the selection takes place or *which element* performs the selection or *for what* the application is being selected [and] thus offers no guidance as to when the time period of “*after selection*” begins. In contrast, the cited portion of the specification describes a different time period related to the application selection that begins “**when** an application has been selected for further communication **by the reading device**” (*id.* at 3–4). This difference alone divorces the claim from the functionality described in the specification; and

(3) There is no indication in the specification that the inventor possessed the idea that *all* subsequent communication after *any* selection of an application would take place without requiring any further steps” (*id.* at 4).

Patent Owner contends that the claims when read in light of the specification do not require reciting which element performs the selection. Reply to Opp. 5. Patent Owner contends that the substitute claims imply that a selection is made, which marks the start of when subsequent communications occur “without requiring any further steps” as claimed. *Id.* Patent Owner contends that the express language of the claims provides that this requirement is applied to the selected application and to subsequent

communications, consistent with the written description. *Id.* at 6. Patent Owner contends that “selecting an application” as claimed is not a single step, because, at least for the embodiment in paragraph 21 of the specification, selection is not completed until the identification/session numbers are linked in the data carrier so that the correct application can be addressed upon communication with the reader. *Id.* at 6–7.

Petitioner contends that the proposed substitute claims lack the essential feature of which element performs the selection. Sur-Reply to Mot. 7. Petitioner contends that the Board noted that paragraph 21 of the specification makes it clear that the reading device is the element that selects an application. *Id.* (citing Preliminary Guidance (“Guidance”) 7; Ex. 1002, 290 (Spec. ¶ 21)). Petitioner contends that if the specification covers only the reading device making the selection, the claim cannot omit that essential feature, and that the substitute claims cannot cover a broader invention in which any device makes the selection. *Id.* Petitioner contends that Patent Owner does more than interpret the claim in light of the specification, rather, Patent Owner seeks to add an entirely new limitation to the claim—that selection is done by the reader—by reading this limitation from the specification into the claim. *Id.* at 9.

Although we said in our Preliminary Guidance that the specification makes it clear that the reading device is the element that selects an application, Patent Owner, in its Reply, did not indicate whether it agrees with our interpretation. During the Oral Hearing, Patent Owner was asked whether another element of the communication system could perform the claimed selection. Tr. 34:16–19. Patent Owner responded “Yes it can . . . the selection process may be made by the host.” *Id.* at 34:20–35:1. When asked “So do you think your specification describes and enables any other

element of the system performing that selection,” Patent Owner answered “I think based on the disclosure a person of ordinary skill in the art would understand that the selection process may be made by other components of the system.” *Id.* at 35:5–8. When asked what evidence Patent Owner has to support this understanding of a person of ordinary skill, Patent Owner answered “I make this statement based on my understanding and the understanding that the specification itself doesn’t need an expert to make . . . these conclusions.” *Id.* at 14–22.

In light of the full record before us, including Patent Owner’s arguments at the Oral Hearing, we now consider whether the proposed amended claim properly encompasses a device other than the reader performing the claimed selection. We agree with Petitioner’s contention, that the “claim doesn’t tell us . . . which element performs the selection,” and that “[t]his difference . . . divorces the claim from the functionality described in the specification.” *Opp.* 3–4 (citing Ex. 1002, 290 (Spec. ¶ 21)). Dr. Phinney’s testimony supports this contention. Ex. 1026 ¶ 12. We do not give weight to the arguments by Patent Owner’s attorney at the Oral Hearing, because attorney argument cannot take the place of objective evidence. *Gemtron Corp.*, 572 F.3d at 1380. This is especially true here, where the specification discloses that the reader makes the selection, but does not disclose that any other device makes or would be capable of performing the selection. Patent Owner has not shown, nor do we find, support in the disclosure of the ’706 patent for a device other than the reader performing or capable of performing a selection. Thus, based on Patent Owner’s position that the proposed claim amendment would encompass non-reader devices making the selection, the proposed amendment adds new matter and is impermissible. *See Gentry Gallery Inc. v. Berkline Corp.*, 134

F.3d 1473, 1480 (Fed. Cir. 1998) (“[C]laims may be no broader than the supporting disclosure, and therefore . . . a narrow disclosure will limit claim breadth.”).

Accordingly, Patent Owner has not shown, nor do we find, support for “wherein after selection of one of the plurality of applications, subsequent communication between the reading device and the selected application takes place without requiring any further steps” as recited in independent proposed substitute claims 23, 25, and 26. Due to the lack of support in the original disclosure of the ’706 patent for this limitation, proposed substitute claims 23, 25, and 26, and claim 24 by virtue of its dependency from claim 23, seek to introduce new subject matter.

Dependent claim 24

Proposed substitute dependent claim 24 recites:

wherein the communication device is set up to uniquely address the one or more of the least two applications with a receiving device, and

wherein communication between the reading device and the uniquely addressed application takes place subsequently without requiring any further steps after the communication-readiness signals are generated.

Mot. App. A 2. Patent Owner asserts that the original disclosure of the ’706 patent provides support for claim 24, including the newly recited limitations. Mot. 5–6 (citing, e.g., Ex. 1002, 289 (Spec. ¶ 16), 290 (Spec. ¶ 21), 292 (Spec. ¶ 27), 295 (Spec. ¶ 35)); PO Reply 7 (citing Ex. 1002, 290, 294–295, 297–298).

Petitioner argues that “[t]he proposed amendments to substitute claim 24 . . . add new matter because they require a different process than the process described in the specification.” Opp. 7–9. In particular, Petitioner

contends that the limitation “wherein communication between the reading device and the uniquely addressed application takes place subsequently without requiring any further steps after the communication-readiness signals are generated” adds new matter because “the specification requires at least two further steps—application selection and session number assignment—for communication after the communication readiness signals have been generated.” Opp. 8–9 (citing Ex. 1002, 285 (Spec. ¶ 3); Ex. 1026 ¶¶ 16–21). In our Preliminary Guidance, we agreed, finding that the “communication” recited in proposed substitute claim 24 occurs after “selection” as required by proposed substitute claim 23, but the specification discloses that the communication-readiness signals are generated before selection. Guidance 8–9. We determined that the claimed “communication” of claim 24 therefore requires further steps, namely, selection after the signals are generated in order to take place. *Id.*

Patent Owner responds that the specification teaches the use of unique IDs to identify applications and storing information on the data carrier about which application has communicated with the reading device. Reply to Opp. 7. Patent Owner contends that since selection is a prerequisite to communication, this information also indicates the last application selected for further communication. *Id.* at 7–8. Patent Owner contends that this information may be used in instances when the energy supplied to the data carrier is interrupted, in order to complete communications with the previously selected application. *Id.* at 8. In particular, Patent Owner contends that the specification discloses that the communication device may later generate another communication readiness signal for that application with which the reading device actively communicated last in order to bring to an end a data communication that was commenced but not completed. *Id.*

(citing Ex. 1002, 298 (Spec. ¶43). Patent Owner contends that because the selection of the application has occurred previously and the selection was stored by the communication device before the second readiness signal, the reader can communicate with the selected application “without requiring any further steps after the [second] communication-readiness signals are generated” as claimed. *Id.*

Petitioner contends that Patent Owner improperly attempts to import the term “second” into the claim. Sur-Reply to Mot. 10. Petitioner contends that Patent Owner had the opportunity to draft claim language that precisely and clearly defines the scope of the invention. *Id.* at 11. Petitioner contends that it would be improper to now interpret Patent Owner’s specifically selected language to include additional limitations that Patent Owner itself elected not to include when given the opportunity. *Id.* at 11–12.

We agree with Petitioner. The claim does not recite “second communication-readiness signals” and we find no basis for reading the term “second” into the proposed claim language. Further, even under Patent Owner’s narrower construction, claim 24 recites “the communication device is set up to emit . . . a communication-readiness signal first for one of the at least two applications that is different from the application designated by the stored information.” That is, one of the communication-readiness signals recited in claim 24 is for an application “that is different from the application designated by the stored information.” However, the portion of the specification cited by Patent Owner to show support for claim 24 states that the communication device stores, in a nonvolatile memory, information about which of the applications last communicated with the reading device, and generates a communication-readiness signal for that application “in order for example to bring to an end a data communication that was

commenced but not completed.” Ex. 1002, 297–298 (Spec. ¶ 43). The communication-readiness signal cited by Patent Owner is for an application that is designated by the stored information, not for an application “that is different from the application designated by the stored information” as recited in the claim.

Accordingly, Patent Owner has not shown, nor do we find, support for “wherein communication between the reading device and the uniquely addressed application takes place subsequently without requiring any further steps after the communication-readiness signals are generated,” where one of the communication-readiness signals is for an application “that is different from the application designated by the stored information” as recited in claim 24. Due to the lack of support in the original disclosure of the ’706 patent for this limitation, proposed substitute claim 24 seeks to introduce new subject matter.

B. Whether the Substitute Claims are Indefinite

Petitioner contends that, “by reciting pure method steps not tied to specific structure, apparatus claims 23–26 are improper hybrid claims that are indefinite under § 112.” Opp. 11. Petitioner explains that “[c]laim 23 is directed to a ‘portable data carrier,’ and is thus an apparatus claim,” which “recites structural elements including ‘a communication device configured to...,’ along with several ‘wherein’ clauses.” Opp. 10. Petitioner asserts, however, that while “[e]ach of the original ‘wherein’ clauses found in claim 11 tie functional language to a specific structure—e.g., ‘wherein the communication device is set up to generate[’] . . . , the new limitation in proposed claim 23 is a pure method limitation that is not tied to any structure: ‘wherein after selection of one of the plurality of applications, subsequent communication between the reading device and the selected

application takes place without requiring any further steps.” *Id.* According to Petitioner, “[t]he plain language of this new limitation does not link any specific structural element of the claimed portable data carrier to either the ‘selection’ of the application or the ‘communication,’ and “[o]n its face, this pure method step recited in the context of an apparatus claim is improper under *IPXL* and *Rembrandt*.” *Id.* at 10–11 (citing *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005); *Rembrandt Data Techs., LP v. AOL, LLC*, 641 F.3d 1331, 1339 (Fed. Cir. 2011)).

Patent Owner contends that the claims at issue are directed to an apparatus, and that the added wherein clause further defines the functionality of the communication device, therefore tying the added functionality to the apparatus. Reply to Opp. 8–9. Patent Owner contends that the substitute claims are unlike those of *IPXL* and *Rembrandt*. *Id.* at 9 (citing Guidance 14–16).

We agree with Patent Owner. We determine that Petitioner’s arguments are not persuasive because the proposed substitute claims are distinguishable from the claims held indefinite in *IPXL* and *Rembrandt*. In *IPXL*, a single claim that “recite[d] both a system and the method for using that system” was held to be unclear, ambiguous, and, thus, indefinite. *IPXL*, 430 F.3d at 1384. The Court explained that “it is unclear whether infringement of claim 25 occurs when one creates a system that allows the user to change the predicted transaction information or accept the displayed transaction, or whether infringement occurs when the user actually uses the input means to change transaction information or uses the input means to accept a displayed transaction.” *Id.* In *Rembrandt*, a patent claim was held indefinite because “[t]he first four elements . . . recite[d] apparatus elements: buffer means, fractional encoding means, second buffer means, and trellis

encoding means,” whereas “[t]he final element [was] a method: ‘transmitting the trellis encoded frames’” that appeared in isolation and was not specifically tied to the structure of the apparatus. *Rembrandt*, 641 F.3d at 1339.

Here, however, the proposed substitute claims tie sufficiently the portable data carrier with the recited capability of that structure. The phrase “wherein after selection of one of the plurality of applications, subsequent communication between the reading device and the selected application takes place without requiring any further steps” establishes the communication functionality between the reading device and a selected application of the portable data carrier, which describe the underlying network environment in which the portable data carrier operates. *See HTC Corp. v. IPCom GmbH & Co., KG*, 667 F.3d 1270, 1277 (Fed. Cir. 2012). *Id.* Although the claim language has an “unconventional format,” it still makes clear “that infringement occurs when one makes, uses, offers to sell, or sells the claimed apparatus: the [portable data carrier]—which must be used in a particular network environment.” *Id.* For similar reasons, in *HTC*, claims directed to a mobile station for use with a network that included steps for achieving a handover were not held to be indefinite. *Id.*

Accordingly, Petitioner’s arguments do not persuade us that proposed substitute claims 23–26 are indefinite.

C. Whether the Substitute Claims Would Have Been Obvious

Petitioner contends that the proposed substitute claims are unpatentable under the following grounds:

- (1) Guthery and Nozawa as to claims 23 and 24;

(2) Guthery, Nozawa, and Smart Card Handbook⁷ as to claim 25;
and

(3) Guthery and RFID Handbook as to claim 26.
Opp. 8–19.

2. Obviousness of Substitute Claim 23

Substitute claim 23 recites the limitations of original claim 11, and adds the limitation “wherein after selection of one of the plurality of applications, subsequent communication between the reading device and the selected application takes place without requiring any further steps.”

Petitioner contends that the limitations in proposed claim 23 found in original claim 11 are taught by the combination of Guthery and Nozawa for the reasons given in the Petition. Opp. 13–14. We agree with Petitioner for the reasons given in our analysis of ground 1.

With respect to the language of proposed substitute claim 23 reciting “wherein after selection of one of the plurality of applications, subsequent communication between the reading device and the selected application takes place without requiring any further steps,” Petitioner asserts that Guthery teaches an application selection process in which the reading device

⁷ Although the Opposition on page 13 states that claims 23–26 are obvious in view of Guthery and Nozawa, the following sentence states that the limitations that are unchanged from claims 11, 12, 18, and 20 are rendered obvious by the same portions presented in the Petition, and thus will not be addressed in the Opposition. The portions presented in the Petition showing that claims 18 and 20 would have been obvious rely on the combination of Guthery, Nozawa, and Smart Card Handbook for claim 18, and the combination of Guthery and RFID Handbook for claim 20. Thus, we find that the statement on page 13 that claims 25 and 26 are rendered obvious by Guthery and Nozawa is harmless error.

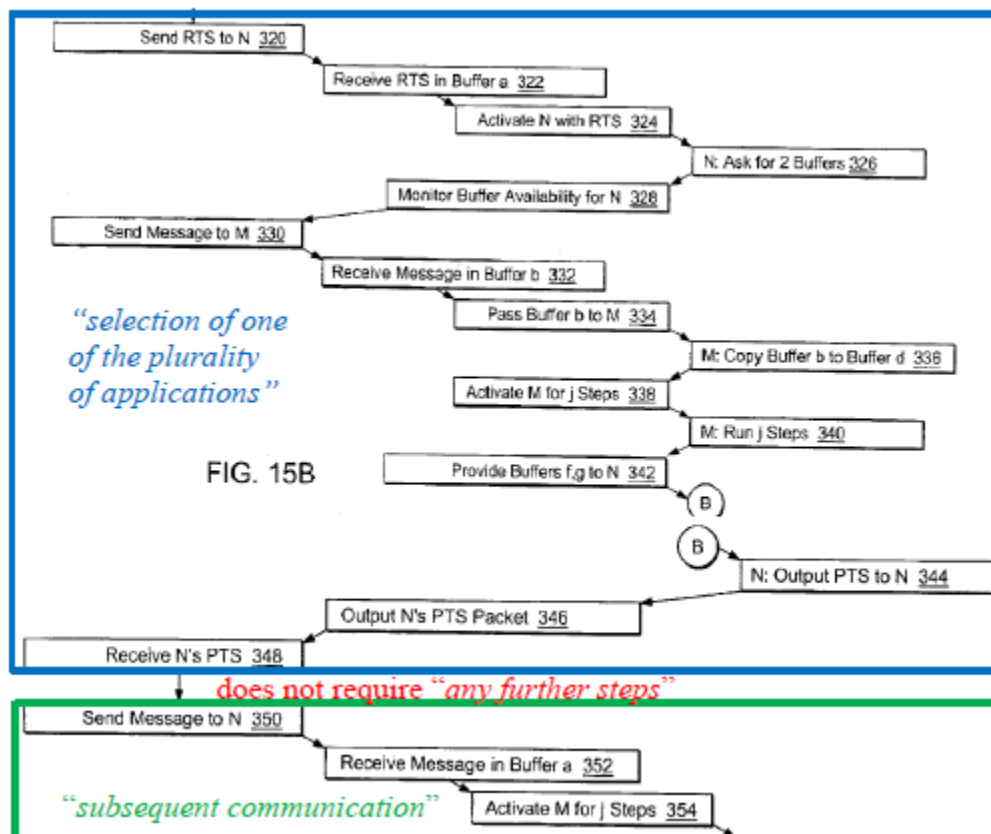
sends a request to an application on a smart card and receives a permission-to-send packet confirming its selection. Opp. 14 (citing Ex. 1005, 12:20–52). Petitioner contends that, after receiving the permission-to-send packet, the reading device then begins to communicate with the application. *Id.* (citing Ex. 1005, 12:20–52; Ex. 1026 ¶ 27). Petitioner contends that, after the selection process, there are no steps before subsequent communication. *Id.* at 15–16 (citing Ex. 1005, Figs. 15B and 15C; Ex. 1026 ¶¶ 27–28).

Patent Owner contends that Guthery’s silence with respect to communication “without requiring any further steps” does not teach this negative limitation. Reply to Opp. 10 (citing *International Business Machines Corp. v. Iancu*, 759 Fed. Appx. 1002, 1022 (Fed Cir. 2019)). Patent Owner further contends that “the claimed selection process includes the steps necessary for the reading device to engage in communications with the selected application, i.e., when the selected application is sufficiently addressed by the reading device to begin communicating with the data carrier.” *Id.* at 11 (citing Ex. 1002, 290, 295–296 (Spec. ¶¶ 21, 35–37)). Patent Owner contends that application selection in Guthery occurs when the reading device receives the index of applications, not after receiving the permission to send packet. *Id.* at 11–12. Patent Owner contends that Guthery therefore requires further steps after selection before subsequent communication. *Id.* at 12.

Petitioner contends that Guthery is not silent with respect to the steps required for the interaction between the reader and the application. Sur-Reply to Mot. 3–4. Petitioner contends that no steps are required between the last step of selection (348) and the first step of communication (350) shown in Figures 15B and 15C. *Id.* at 4. Petitioner contends that as long as all the steps of shown in Figures 15B and 15C are performed, there will be

communication between the reader and the smart card, and no other steps are “required” as claimed. *Id.*

Petitioner contends that Guthery’s multi-step selection process is consistent with Patent Owner’s interpretation that “selection of one of the plurality of applications” as claimed is not a single step, but rather a function that may involve several steps. Sur-Reply to Mot. 3 (citing PO Reply 6). Petitioner’s modified version of Guthery’s Figures 15B and 15C is reproduced below.



Petitioner’s modified version of Guthery’s Figures 15B and 15C above depicts a portion of a timeline illustrating the operation of an embodiment in the case of simultaneous communication between a reader and two applications on a smart card. Opp. 15. Petitioner, relying on the testimony of Dr. Phinney, contends that its modified version of Figures 15B

and 15C of Guthery illustrates an example of where the application selection process spans steps 320–348 and communication subsequently begins at step 350 with no steps between 348 and 350. *Id.* at 14–16; Ex. 1026 ¶¶ 25–29; Sur-Reply to Mot. 3–4.

Patent Owner’s interpretation of “selection” to mean that the claimed selection process includes the steps necessary for the reading device to engage in communications with the selected application is consistent with our interpretation that subsequent communication between the reading device and the selected application takes place when the application has been selected, and does not require any further steps between selection and the subsequent communication. Guidance 7. We are not persuaded that the claimed “selection” is limited to when the selected application is sufficiently addressed by the reading device to begin communicating with the data carrier as contended by Patent Owner. The specification of the ’706 patent discloses that “the application 10 is selected for further communication by the reading device 200 in the course of the selection process 400 by means of an anti-collision method.” Ex. 1002, 295 (Spec. ¶ 35). In this embodiment, selection process 400 is an anti-collision method that selects a data carrier, and is therefore not limited to addressing an application. *Id.* at 285–286 (Spec. ¶¶ 3–4). Thus, the scope of the claimed “selection” encompasses steps other than addressing an application.

Even under Patent Owner’s narrower interpretation, that the claimed selection occurs when the selected application is sufficiently addressed by the reading device to begin communicating with the data carrier, we find that Guthery teaches this limitation. We agree with Petitioner, that when the reader of Guthery receives the permission-to-send packet as shown in Figure 15 of Guthery, the selected application has been sufficiently addressed by

the reading device to begin communicating with the carrier. That is, before receiving the permission-to-send packet, the selected application has not been sufficiently addressed by the reader to begin communication as shown in Figure 15 of Guthery.

We agree with Petitioner and Dr. Phinney, that Guthery teaches this limitation, because Guthery is not silent with respect to the steps required for the interaction between the reader and the application. We rely on the testimony of Dr. Phinney in finding that Guthery teaches the newly amended “wherein” limitation because the reader sends a message to application N at step 350 (“subsequent communication between the reading device and the selected application takes place”) right after the reader receives a permission-to-send message from Application N at step 348 (“after selection of one of the plurality of applications”), without any intermediate steps (“without requiring any further steps”). Contrary to Patent Owner’s contention, Guthery does not need to explicitly state a feature’s absence in order to disclose this negative limitation. *See AC Technologies S.A. v. Amazon.com, Inc.*, 912 F.3d 1358, 1367 (Fed. Cir. 2019).

We agree with Petitioner and Dr. Phinney, that the limitations of substitute claim 23 are taught by the prior art for the reasons given above and in our analysis of claim 11.

3. Obviousness of Claims 25 and 26

Petitioner contends that proposed substitute claim 25 is obvious over the combination of Guthery, Nozawa, and Smart Card Handbook for the reasons given with respect to proposed substitute claim 23 in the Opposition and original claim 18 in the Petition. Opp. 13–14, 20. We agree with Petitioner for the reasons given in our analysis of claim 18 and our analysis of claim 23.

Petitioner contends that proposed substitute claim 26 is obvious over the combination of Guthery and RFID Handbook for the reasons given with respect to proposed substitute claim 23 in the Opposition and original claim 20 in the Petition. Opp. 13–14, 20. We agree with Petitioner for the reasons given in our analysis of claim 20 and our analysis of claim 23.

4. Obviousness of Substitute Claim 24

Proposed substitute dependent claim 24 includes the same “wherein after selection” limitation discussed above because it depends from proposed substitute independent claim 23. Mot., App. A 2. Thus, for the same reasons as those discussed above, we agree with Petitioner that Guthery appears to disclose or suggest the newly amended “wherein after selection” limitation.

Proposed substitute dependent claim 24 additionally recites

wherein the communication device is set up to uniquely address the one or more of the least two applications with a receiving device, and

wherein communication between the reading device and the uniquely addressed application takes place subsequently without requiring any further steps after the communication-readiness signals are generated.

Mot., App. A 2. Petitioner contends that Guthery renders obvious each of these limitations. Opp. 16–20 (citing Ex. 1005; Ex. 1026).

Patent Owner contends that Guthery does not teach that the communication device is configured to control communication “between the reading device and the uniquely addressed application takes place subsequently without requiring any further steps after the communication-readiness signals are generated” as claimed for the reasons given in Patent Owner’s arguments regarding the non-obviousness of claim 23. Reply to

Opp. 12. We disagree with Patent Owner for the reasons discussed in our obviousness analysis of claim 23.

We agree with Petitioner and Dr. Phinney that Guthery teaches “wherein communication between the reading device and the uniquely addressed application takes place subsequently without requiring any further steps after the communication-readiness signals is generated” as claimed.

5. Conclusion for Obviousness

For the reasons above, we find that Guthery teaches or suggests each of the newly recited limitations of proposed substitute claims 23–26. Opp. 13–20. Having considered all the arguments and evidence of record, and considering our analysis of the evidence above in sections IX.B–C, we conclude that Petitioner has demonstrated, by a preponderance of the evidence, that

- (1) Guthery and Nozawa would have taught or suggested all the limitations of proposed substitute claims 23 and 24 to a person of ordinary skill;
- (2) Guthery, Nozawa, and the Smart Card Handbook would have taught or suggested all the limitations of proposed substitute claim 25 to a person of ordinary skill; and
- (3) Guthery and the RFID Handbook would have taught or suggested all the limitations of proposed substitute claim 26 to a person of ordinary skill.

Therefore, we find that claims 23–26 would have been obvious to a person of ordinary skill.

C. Whether the Substitute Claims Are Enabled

Petitioner contends proposed substitute claims 23–26 lack enablement under 35 U.S.C. § 112, first paragraph, because “the newly added claim

limitations require the impossible—communication without any steps: “*wherein after selection of one of the plurality of applications, subsequent communication between the reading device and the selected application takes place without requiring any further steps.*” Opp. 11–12. Petitioner asserts that “the newly added language requires that ‘*subsequent communication*’ must somehow take place ‘*without requiring any further steps*[,] [b]ut communication is itself—or at least involves—‘steps.’” According to Petitioner, “the negative limitation of ‘*without requiring any further steps*’ is written so broadly that it carves out any step, whether performed by man or machine,” which “is impossible because communication cannot occur if the devices involved do not take any steps to perform the communication (e.g., formatting data, transmitting data).” *Id.* at 12–13 (citing Ex 1026 ¶¶ 22–23).

This argument is not persuasive. “Claims are not interpreted in a vacuum, but are part of and are read in light of the specification.” *Slimfold Mfg. Co., Inc. v. Kinkead Industries, Inc.*, 810 F.2d 1113, 1116 (Fed. Cir. 1987). We understand the “wherein after selection” limitation to mean that subsequent communication between the reading device and the selected application takes place when the application has been selected and does not preclude functionality needed to engage in the communication between them. Accordingly, any steps needed to engage in the subsequent communication, such as formatting data and transmitting data, would not be “further steps” that are precluded by the claim limitation. Thus, we disagree with Petitioner that the claim language is “written so broadly that” it “requires the impossible” or “carves out any step, whether performed by man or machine” such that proposed substitute claims 23–26 lack enablement.

Accordingly, Petitioner's arguments do not persuade us that proposed substitute claims 23–26 lack enablement.

XI. CONCLUSION⁸

Claims 1–3, 11, 12, 16, 18, and 20 are unpatentable over the prior art. We deny Patent Owner's Motion to Amend because proposed substitute claims 23–26 are unpatentable over the prior art and are unpatentable under 35 U.S.C. § 112.

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1–3, 11, 12	103	Guthery, Nozawa	1–3, 11, 12	
16	103	Guthery, Nozawa, RFID Handbook	16	
18	103	Guthery, Nozawa, Smart Card Handbook	18	
20	103	Guthery, RFID Handbook	20	
Overall Outcome			1–3, 11, 12, 16, 18, 20	

⁸ 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).

Motion to Amend Outcome	Claim(s)
Original Claims Cancelled by Amendment	
Substitute Claims Proposed in the Amendment	23–26
Substitute Claims: Motion to Amend Granted	
Substitute Claims: Motion to Amend Denied	23–26
Substitute Claims: Not Reached	

XII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–3, 11, 12, 16, 18, and 20 are unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Amend is *denied*; and

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

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Patent 8,581,706 B2

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