

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KINGSTON TECHNOLOGY COMPANY, INC.,
Petitioner,

v.

SPEX TECHNOLOGIES, INC.,
Patent Owner.

Case IPR2017-01021
Patent 6,003,135

Before LYNNE E. PETTIGREW, DANIEL N. FISHMAN, and
CHARLES J. BOUDREAU, *Administrative Patent Judges*.

BOUDREAU, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Kingston Technology Company, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 55–58 (“the challenged claims”) of U.S. Patent No. 6,003,135 (Ex. 1001, “the ’135 patent”) pursuant to 35 U.S.C. §§ 311–319. SPEX Technologies, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”). On October 4, 2017, based on the record before us at that time, we instituted an *inter partes* review of only claim 58. Paper 7 (“Institution Decision” or “Dec.”), 32.

Patent Owner filed a Patent Owner Response (Paper 13, “Response” or “PO Resp.”) and Petitioner filed a Reply (Paper 16, “Pet. Reply”). Petitioner relies on a Declaration of Roy A. Griffin III, P.E. (Ex. 1010) and Patent Owner relies on a Declaration of Zaydoon Jawadi (Ex. 2003).

Following the Supreme Court’s decision in *SAS Institute, Inc. v. Iancu*, 138 S. Ct. 1348 (2018), we issued an Order on May 7, 2018, modifying our Decision to institute review of all claims and all grounds. Paper 20 (“SAS Order”). In a telephone conference on May 10, 2018, we granted a request by Petitioner for authorization to file a motion for submission of supplemental information under 37 C.F.R. § 42.123 and authorized Patent Owner to file an opposition to such motion. See Paper 22. Petitioner filed a transcript of the conference call as Exhibit 1013. Petitioner and Patent Owner filed the authorized motion (Paper 24) and opposition (Paper 28), respectively. Following consideration of Petitioner’s motion and Patent Owner’s opposition, we issued an Order on May 29, 2018, granting the motion and authorizing supplemental briefing limited to argument regarding Petitioner’s assertions that the supplemental information supports

arguments in the Petition or demonstrates inconsistencies in Patent Owner's arguments and evidence (Paper 31). Petitioner filed its supplemental information as Exhibits 1012–1018. Pursuant to our May 29 Order, Petitioner also filed a Supplemental Brief Addressing the Supplemental Information (Paper 33, "Pet. Supp. Br."), and Patent Owner filed a Response to Petitioner's Supplemental Brief (Paper 34, "PO Supp. Br.") (collectively, "Supplemental Briefing").

Patent Owner also filed a Motion to Exclude Evidence (Paper 35, "Mot. Excl."), to which Petitioner filed a Response (Paper 36, "Resp. Mot. Excl."). Patent Owner did not file a reply to Petitioner's Response.

Oral argument for this proceeding was held on July 23, 2018, and a transcript has been entered into the record as Paper 38 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claim 58 of the '135 patent is unpatentable but has not shown that claims 55–57 are unpatentable.

II. BACKGROUND

A. *Related Matters*

The parties indicate that the '135 patent is asserted against Petitioner in *SPEX Technologies, Inc. v. Kingston Technology Corp.*, No. 8:16-cv-01790 (C.D. Cal. filed Sept. 27, 2016). Paper 9, 2; Paper 29, 2. Patent Owner further indicates the '135 patent is asserted in *SPEX Technologies, Inc. v. Western Digital Corp.*, No. 8:16-cv-01799 (C.D. Cal. filed Sept. 28, 2016); *SPEX Technologies, Inc. v. Toshiba America Electronics*

Components Inc., No. 8:16-cv-01800 (C.D. Cal. filed Sept. 28, 2016); *SPEX Technologies, Inc. v. CMS Products, Inc.*, No. 8:16-cv-01801 (C.D. Cal. Filed Sept. 28, 2016); *SPEX Technologies, Inc. v. Integral Memory, PLC*, No. 8:16-cv-01805 (C.D. Cal. filed Sept. 28, 2016); and *SPEX Technologies, Inc. v. Apricorn*, No. 2:16-cv-07349 (C.D. Cal. filed Sept. 28, 2016). Paper 9, 2–3.

Claims 55 and 57 were the subject of a petition for *inter partes* review filed January 31, 2017, by Petitioner on the same grounds as asserted in the present Petition. Case IPR2017-00825, Paper 2. We denied institution of *inter partes* review in that case on August 17, 2017. Case IPR2017-00825, Paper 8.

Claims 55–58 also have been the subject of petitions for *inter partes* review filed by Western Digital Corp., Petitioner Kingston Technology Company, Inc., and Toshiba Corporation, respectively, in IPR2018-00084 (filed October 16, 2017), IPR2018-01002 (filed May 2, 2018), and IPR2018-01068 (filed May 10, 2018). Case IPR2018-00084, Paper 1; Case IPR2018-01002, Paper 2; Case IPR2018-01068, Paper 5. We instituted *inter partes* review in IPR2018-00084 on April 25, 2018. Case IPR2018-00084, Paper 14. The Petitions in IPR2018-01002 and IPR2018-01068, which were filed with motions for joinder with IPR2018-00084 (Case IPR2018-01002, Paper 3; Case IPR2018-01068, Paper 6), currently remain pending.

B. The '135 Patent

The '135 patent, titled “Modular Security Device,” relates generally to a modular device that can communicate with a host computing device to enable one or more security operations to be performed by the modular device on data stored within the host computing device, data provided from

the host computing device to the modular device, or data retrieved by the host computing device from the modular device. Ex. 1001, [54], 1:17–26. Figures 1, 2, and 4B of the '135 patent are reproduced below.

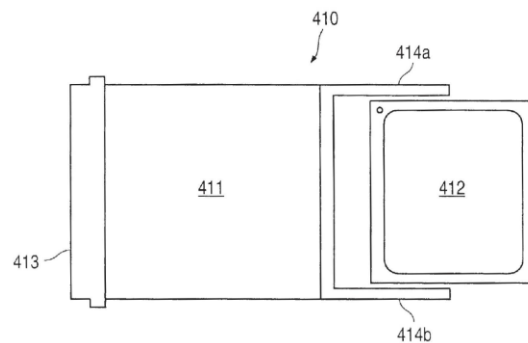
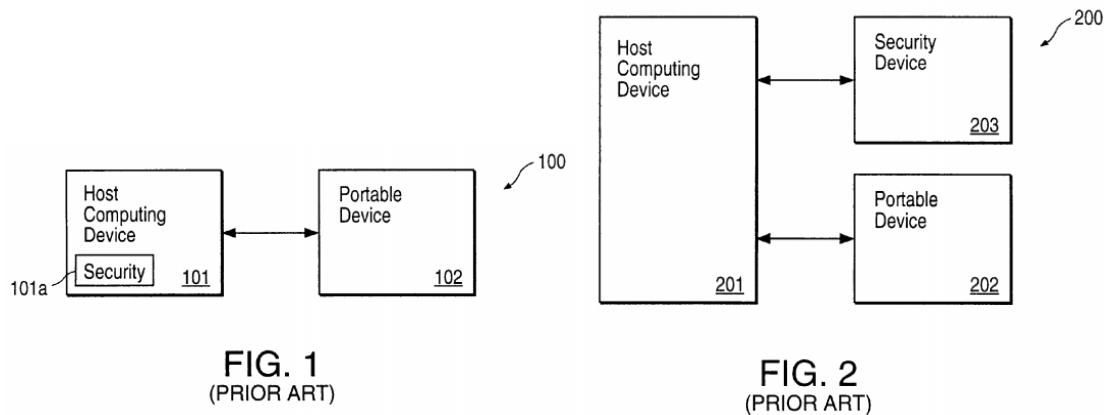


FIG. 4B

Figures 1 and 2 are block diagrams of prior art systems described in the '135 patent. *Id.* at 1:51–3:14, 6:3–8. Figure 4B is a plan view of a modular device according to one embodiment of the invention of the '135 patent. *Id.* at 6:18–20. The '135 patent explains that in the prior art, security operations were either performed by the host computer, as illustrated in Figure 1 with security mechanism 101a included in host computing device 101, or by a standalone security device, as illustrated by security device 203 in Figure 2. *Id.* at 1:57–58, 2:21–31. According to the '135 patent, both of those arrangements were deficient in various ways. *Id.* at 2:9–20, 2:58–3:14. The '135 patent purports to solve those deficiencies

by placing a security module between the host and target modules. With reference to Figure 4B reproduced above, the '135 patent explains that either first module 411 or second module 412 can be a security module and the other can be a target module. *Id.* at 8:25–27. The '135 patent further explains, however, that connector 413 makes connection to a host computing device, and it is therefore preferable that first module 411 be the security module and second module 412 be the target module “to facilitate implementation of the in-line security aspect of the invention.” *Id.* at 8:27–32.

C. Challenged Claims

Of the challenged claims, claims 55, 57, and 58 are independent. Those independent claims are reproduced below:

55. For use in a modular device adapted for communication with a host computing device, the modular device comprising a security module that is adapted to enable one or more security operations to be performed on data and a target module that is adapted to enable a defined interaction with the host computing device, a method comprising the steps of:

receiving a request from the host computing device for information regarding the type of the modular device;

providing the type of the target module to the host computing device in response to the request; and

operably connecting the security module and/or the target module to the host computing device in response to an instruction from the host computing device.

57. For use in a modular device adapted for communication with a host computing device, the modular device comprising a security module that is adapted to enable one or more security operations to be performed on data and a target module that is

adapted to enable a defined interaction with the host computing device, a method comprising the steps of:

communicating with the host computing device to exchange data between the host computing device and the modular device;

performing one or more security operations and the defined interaction on the exchanged data;

mediating communication of the exchanged data between the host computing device and the modular device so that the exchanged data must first pass through the security module; and

operably connecting the security module and/or the target module to the host computing device in response to an instruction from the host computing device.

58. For use in a modular device adapted for communication with a host computing device, the modular device comprising a security module that is adapted to enable one or more security operations to be performed on data and a target module that is adapted to enable a defined interaction with the host computing device, a method comprising the steps of:

receiving an instruction from a host computing device regarding operation of the modular device; and

operably connecting the security module and/or the target module to the host computing device in response to the instruction from the host computing device.

Ex. 1001, 26:12–25, 34–65.

D. Asserted Grounds

The Petition sets forth the following asserted grounds of unpatentability:

Reference(s)	Bas(is/es)	Claim(s) Challenged
Jones ¹	§ 102(b) or § 103(a) ²	55–58
Jones in combination with either or both of Security Modules ³ and Common Interface Specification ⁴	§ 103(a)	55–58
Jones in combination with either or both of Schwartz ⁵ and Kimura ⁶	§ 103(a)	57

Pet. 4–5.

¹ PCT Application WO 95/16238, published June 15, 1995 (“Jones”) (Ex. 1003).

² Section IV.C. at page 4 of the Petition states “Jones (Ex. 1003) renders claims 55–58 of the ’135 patent obvious,” whereas Heading VII.A. at page 15 of the Petition identifies the same ground of challenge as “Anticipation or Obviousness of Claims 55–58 Based on Jones” (emphasis omitted). We consider both anticipation and obviousness herein.

³ Charles Cresson Wood & Howard M. Zeidler, *Security Modules: Potent Information Security System Components*, 5 Computers & Security 114 (1986) (“Security Modules”) (Ex. 1004).

⁴ *Common Interface Specification for Conditional Access and Other Digital Video Broadcasting Decoder Applications*, Digital Video Broadcasting, DVB Document A017, dated May 31, 1996 (“Common Interface Specification”) (Ex. 1005).

⁵ U.S. Patent No. 5,675,645, issued Oct. 7, 1997 (filed Apr. 18, 1995) (“Schwartz”) (Ex. 1006).

⁶ U.S. Patent No. 5,237,609, issued Aug. 17, 1993 (filed Mar. 26, 1990) (“Kimura”) (Ex. 1007).

III. DISCUSSION

A. Claim Construction

1. Applicable Standard and General Principles

The '135 patent issued from an application filed June 4, 1997, and accordingly expired no later than June 4, 2017. 35 U.S.C. § 154(a)(2). We construe expired patent claims according to the standard applied by the district courts. *See In re Rambus Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012). Specifically, we apply the principles set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (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). Only those terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

The words of a claim are generally given their ordinary and customary meaning, and that is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *See Phillips*, 415 F.3d at 1312–13.⁷ Claims are

⁷ We note in this regard that Patent Owner contends that Mr. Griffin’s declaration and the Petition are based on the broadest reasonable interpretation standard rather than the *Phillips* standard, and that, accordingly, “no weight should be given to Mr. Griffin’s expert testimony regarding claim construction.” PO Resp. 11–12. Patent Owner, however, does not identify any specific claim terms for which a different construction

not interpreted in a vacuum but are a part of and read in light of the specification. *See Slimfold Mfg. Co. v. Kinkead Indus., Inc.*, 810 F.2d 1113, 1116 (Fed. Cir. 1987). Although it is improper to read a limitation from the specification into the claims (*In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993)), the claims still must be read in view of the specification of which they are a part. *See Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1347 (Fed. Cir. 2004).

If the applicant for patent desires to be its own lexicographer, the purported definition must be set forth in either the specification or prosecution history. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). And such a definition must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

2. “*security module*” and “*target module*”

In the Petition, Petitioner identified a dispute between itself and Patent Owner in related district court litigation as to whether the terms “security module” and “target module” recited in each challenged claim require only “functional (not necessarily physically distinct) modules.” Pet. 15. In the Institution Decision, we explained that although Patent Owner in its Preliminary Response stated that it disagreed with Petitioner’s position, both parties agreed that construction of “security module” and “target module” was not necessary to determine whether Petitioner had demonstrated a reasonable likelihood of prevailing on the asserted grounds of

would result from application of the *Phillips* standard as opposed to the broadest reasonable interpretation standard.

unpatentability for the purposes of institution of *inter partes* review. Dec. 8–9 (citing Pet. 17–18; Prelim. Resp. 5 n.1). We agreed that it was unnecessary at that preliminary stage to construe either term. *Id.* at 9 (citing *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)))). Although we recognize that we adopted specific constructions of “security module” and “target module” as means-plus-function limitations under 35 U.S.C. § 112 ¶ 6 for purposes of the institution decision in a related proceeding also involving the challenged claims of the ’135 patent (see Case IPR2018-00084, slip op. at 13–14 (Paper 14)), on the complete record now before us, we maintain our prior determination that it is unnecessary to expressly construe those terms for purposes of this proceeding. In particular, Patent Owner does not challenge Petitioner’s specific mapping of structures disclosed in the asserted prior art references to the recited modules (see *generally* PO Resp.), and Petitioner confirmed at the oral hearing that its analysis would not be affected if we likewise were to construe those terms under § 112 ¶ 6 in this proceeding (see Tr. 6:22–7:25).

B. Analysis of Asserted Grounds of Unpatentability

1. General Principles

A claim is anticipated under 35 U.S.C. § 102 “only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). “Under the principles of inherency, if the prior art necessarily functions in accordance with, or

includes, the claimed limitations, it anticipates.” *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349 (Fed. Cir. 2002) (citations and internal quotation marks omitted). “Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations and internal quotation marks omitted). Moreover,

unless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102.

Net MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1371 (Fed. Cir. 2008); accord *In re Arkley*, 455 F.2d 586, 587 (CCPA 1972).

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are “such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when presented, objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

2. Level of Skill in the Art

Relying on the testimony of Mr. Griffin, Petitioner asserts that “a person of ordinary skill in the art as of the time of the ’135 patent would have had a bachelor’s degree in Electrical Engineering and at least three years of experience working in the fields of digital electronic interfacing, computing, and electronic data security.” Pet. 13 (citing Ex. 1010 ¶ 20). Patent Owner disputes Petitioner’s assessment, offering instead that “[a] person having ordinary skill in the art at the time of the invention of the ’135 Patent would have possessed a bachelor’s degree in electrical engineering, computer engineering, or a related field, and at least one year of working experience in data storage systems or electronic data security.” PO Resp. 6. According to Patent Owner, “[w]hen given the opportunity to explain Petitioner’s proposed level of ordinary skill in the art, . . . Mr. Griffin[] could not meaningfully distinguish between skilled artisans with one year of working experience versus three years of working experience” (*id.* at 6–7 (citing Ex. 2002 (Griffin Dep.), 45:5–46:18)), and “[a]ccordingly, Petitioner and Mr. Griffin have no basis for requiring such [a] high . . . level of ordinary skill in the art which includes three years of working experience in three fields” (*id.* at 7 (citing Ex. 2003 ¶ 14)).

At oral argument, Petitioner’s counsel represented that the differences between the parties’ assessments are not decisive here and that Petitioner is willing to accept Patent Owner’s standard. Tr. 23:2–20. In view of Petitioner’s representations, we adopt Patent Owner’s assessment to the extent necessary here.

3. Anticipation or Obviousness of Claims 55–58 over Jones

Petitioner asserts that claims 55–58 are unpatentable as anticipated by or obvious over Jones. Pet. 15–32. Having reviewed the Petition, Response, and Supplemental Briefing, as well as the presented evidence and supplemental information, we determine that Petitioner has established by a preponderance of the evidence only that claim 58 is anticipated by Jones.

a. Overview of Jones

Jones, titled “Secure Computer Memory Card,” describes a detachable memory card that may be interconnected with a host personal computer by means of a hardware and software interface in conformance with the Personal Computer Memory Card International Association (PCMCIA) standard. Ex. 1003, [54], [57], 4:3–7.⁸ According to Jones, the memory card consists of a data storage unit, storage-access locking circuitry, and a tamper-proof key information substorage unit. *Id.* at 2:19–23. The locking circuitry is adapted to prevent access to the data stored on the memory card unless the would-be user first presents identifying information which is validated by the locking circuitry with reference to one or more key values stored in the key information substorage unit. *Id.* at 2:23–27. Figures 1 and 2 of Jones are reproduced below.

⁸ Following Petitioner’s usage, cited page numbers of Exhibit 1003 refer to the original pagination at the top center of the pages of Jones rather than to the page numbers added by Petitioner at the bottom of each page of the exhibit.

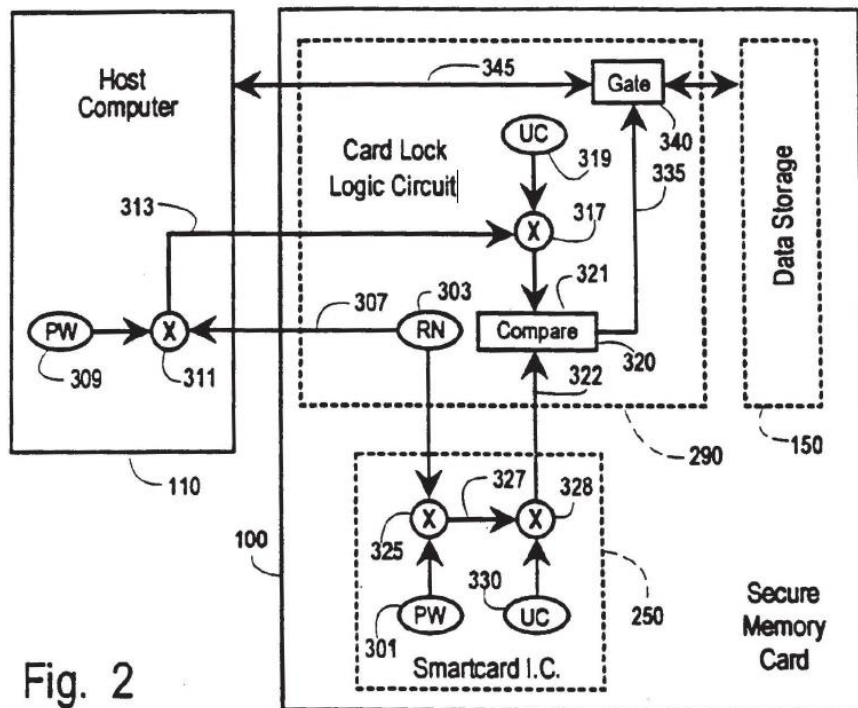
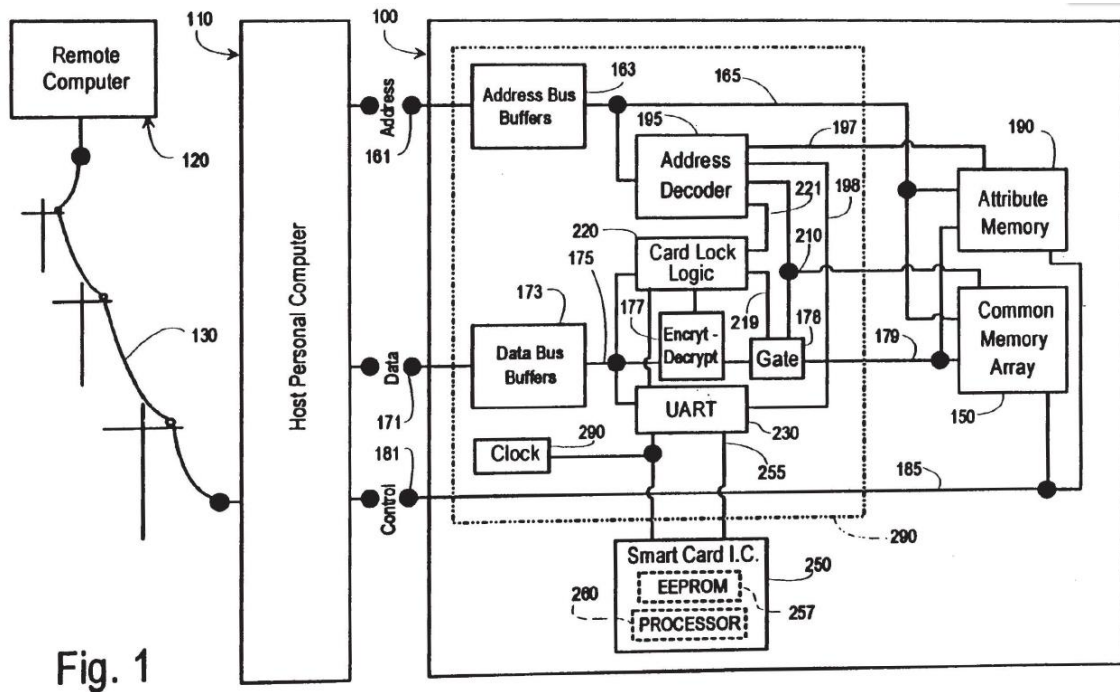


Figure 1 is a block diagram of a memory card described by Jones, shown interconnected with a host computer that is, in turn, connected to other computers by telecommunications links. Ex. 1003, 3:26–29. Figure 2

is a data flow diagram depicting a mechanism for providing password protection for information stored within a memory card of the type shown in Figure 1. *Id.* at 3:30–31. As illustrated in Figure 1, memory card 100 includes smartcard integrated circuit (I.C.) 250 for storing a password, as well as logic circuitry for preventing access to information stored on the memory card unless a user of host computer 110 to which memory card 100 is connected can supply a password matching the stored password. *Id.* at Abstract. Smartcard I.C. 250 may also be used to store public and private key values used to encrypt and decrypt data stored on memory card 100, elsewhere on host computer 110, or exchanged with remote computer 120. *Id.*

According to Jones, memory card 100 stores data in common memory array 150, preferably implemented with non-volatile flash memory integrated circuits. *Id.* at 4:29–30. Data transfers between common memory array 150 and host computer 110 are accomplished via interface data terminals 171, data bus buffer 173, internal data bus 175, internal encryption/decryption unit 177, gate 178, and internal data bus 179. *Id.* at 5:1–4. Control signals are exchanged between common memory array 150 and host computer 110 via PCMCIA interface control terminals 181 and internal control bus 185. *Id.* at 5:4–7.

Jones discloses that the address space provided by common memory array 150 is preferably partitioned into independently accessed regions, access passwords for which are stored in EEPROM 257 within smartcard I.C. 250. *Id.* at 7:8–17. Once a password has been stored for a particular partition, card lock logic circuit 220 has exclusive control over access to that partition. *Id.* at 7:25–26. Any attempt to access that partition results in

notification to device driver software that a valid password must be provided, and the driver software will then prompt the user with a password request. *Id.* at 7:26–29. If the entered password matches the password stored in EEPROM 257, smartcard I.C. 250 so notifies card lock logic 220, which in turn notifies the device driver software executing in the host that the partition has been successfully unlocked, thereafter permitting data transfers between that partition and data terminals 171. *Id.* at 7:32–8:2.

Jones additionally discloses that, when a PCMCIA card is newly inserted into the socket of a running host computer, the Client Device Driver is notified by the Card Services software, so that it can process the card's card information structure ("CIS") entries to identify each partition that may be password protected. *Id.* at 10:10–13. A similar sequence occurs when the host computer is first powered up and the Client Device Driver is initialized. *Id.* at 10:13–16. If an identified partition is locked, card lock logic 220 notifies the device driver of the locked condition, allowing the device driver to request a valid password from the user, either at the time the host computer is being initialized with an already socketed memory card, or at the time a memory card is first inserted into an already running host computer. *Id.* at 10:17–23.

Jones further notes that the data stored in a protected partition within memory card 100 is available only to those who possess both the card and the password. *Id.* at 11:21–23. Neither one without the other is sufficient to obtain access to the data. *Id.* at 11:23–25.

b. Discussion

i. Claims 55 and 56

Claim 55 recites, in part, the steps of “*receiving a request* from the host computing device for information regarding the type of the modular device” and “*providing the type of the target module to the host computing device in response to the request.*” Ex. 1001, 26:18–21 (emphasis added). Claim 56 depends from claim 55 and accordingly includes the same steps in addition to reciting additional limitations. *Id.* at 26:25–33.

In support of its contentions that claims 55 and 56 are unpatentable over Jones, Petitioner contends “Jones discloses that ‘[c]ontrol signals are exchanged between the common memory array 150 and the host computer via the PCMCIA interface control terminals 181 and an internal control bus 185,” and further quotes Jones as follows:

[T]o implement the PCMCIA interface standard, the secure memory card includes a non-volatile attribute memory 190 which stores information enabling the host computer to automatically identify the particular PCMCIA card as soon as the card and host are connected, and to automatically establish the appropriate hardware/software interface using suitable driver software which executes on the host computer 110.

Pet. 18–19 (quoting Ex. 1003, 5:24–29 (emphasis added by Petitioner)). Petitioner also argues that the Jones system “is able to identify the type of modular device even in cases wherein the host computer is not provided with PCMCIA Card Services and Socket Services functions,” pointing to disclosure in Jones that, “[f]or host computers which are not provided with standard PCMCIA Card Services and Socket Services functions, the device driver directly interrogates the CIS structures in the attribute memory” and “when the host computer is first powered up and the Client Device Driver is

initialized, the Client Device Driver calls Card Services functions to process the card's CIS entries to identify each partition that may be locked.” *Id.* at 19 (quoting Ex. 1003, 9:4–6, 10:14–16). Petitioner concludes, “[t]hus, a request is received from the host computing device for information regarding the type of modular device,” and “Jones discloses providing the type of the target module to the host computing device in response to the request mentioned above, as set forth above.” *Id.* at 19–20 (citing Ex. 1010 ¶¶ 49, 51).

In the Institution Decision, we agreed with arguments raised by Patent Owner's Preliminary Response that the PCMCIA Card Services embodiments of Jones cited by Petitioner do not disclose, teach, or suggest a modular device (i.e., Jones's memory card) responding to a “receiv[ed] . . . request” from a host computer for information regarding the type of the modular device; that the “without Card Services” embodiment referenced by Petitioner is not properly combined with the PCMCIA Card Services embodiment either in an anticipation or obviousness context; and that Petitioner also fails to show that Jones discloses providing the type of target module to the host computing device “in response to the request.” Dec. 16 (citing Prelim. Resp. 16–19). We further agreed with Patent Owner's arguments that Petitioner did not explain sufficiently (1) how Jones's disclosure that “[c]ontrol signals are **exchanged** between the common memory array 150 and the host computers via the PCMCIA interface control terminals 181 and internal control bus 185” teaches “the **request** of information from the host to the modular device and the modular device's response thereto” or (2) “how Jones's ‘automatic’ identification of ‘the particular PCMCIA card as soon as the card and host are connected’ relied

upon by Petitioner discloses a request by the host for information from the modular device and a response thereto.” *Id.* (quoting Prelim. Resp. 16–17).

As we explained:

Petitioner does not sufficiently, persuasively explain how Jones’s disclosure of a memory card that “stores information enabling [a] host computer to automatically identify the particular . . . card as soon as the card and host are connected, and to automatically establish [an] appropriate hardware/software interface” teaches or suggests “*receiving a request* from the host computing device for information regarding the type of the modular device” and “providing the type of the target module to the host computing device in response to the request,” as recited in claim 55. Indeed, Jones’s statement that the card includes information enabling the host to “automatically” identify the card “as soon as the card and host are connected” suggests not only that receipt of a request is unnecessary, but also that the information is not provided “in response to [a] request.”

Dec. 17. As to Petitioner’s alternative reliance on the embodiment of Jones in which the host computer lacks standard Card Services and Socket Services functions (Pet. 19), we agreed with Patent Owner that “Jones describes that as separate from the embodiment relied upon by Petitioner as disclosing all other limitations of claim 55, whereas anticipation requires that all of the limitations be arranged or combined in the same way in the prior art as recited in the claim.” Dec. 17–18 (citing Prelim. Resp. 17; *Net MoneyIN*, 545 F.3d at 1371). We further explained:

Moreover, because Petitioner does not advance any argument that the “CIS structures in the attribute memory” perform the remaining claim steps or explain how the “operably connecting” step of claim 55 would be taught or suggested by Jones “in cases wherein the host computer is not provided with PCMCIA Card Services and Socket Services functions,” we agree with Patent Owner that this alternative argument also fails to establish a

reasonable likelihood that Petitioner would prevail in its challenge to claim 55 over Jones.

Id. at 18. For these reasons, we concluded that Petitioner had not established a reasonable likelihood of showing that claims 55 and 56 are unpatentable as anticipated by or obvious over Jones. *Id.*

Following issuance of our SAS Order, as mentioned above (*see supra* Section I.), Petitioner filed the following exhibits as supplemental information on June 15, 2018:

Ex. 1012:⁹ Excerpts from “Rebuttal Report of Dr. V. Thomas Rhyne Regarding the Validity of the Asserted Claims of the Patents-In-Suit,” *SPEX Techs., Inc. v. Kingston Technology Corp.*, No. 8:16-cv-01790 (C.D. Cal.)

Ex. 1013:¹⁰ Excerpts from “Expert Report of Dr. V. Thomas Rhyne re Infringement of Certain Claims of U.S. Patent Nos. 6,088,802 and 6,003,135 by Kingston Technology Corporation, Kingston Digital, Inc., and Kingston Technology Company,” *SPEX Techs., Inc. v. Kingston Technology Corp.*, No. 8:16-cv-01790 (C.D. Cal.)

Ex. 1014: Transcript of April 20, 2018, Deposition of Dr. V. Thomas Rhyne, *SPEX Techs., Inc. v. Kingston Technology Corp.*, No. 8:16-cv-01790 (C.D. Cal.)

Ex. 1015: Excerpts from “Expert Report of John Villasenor,” *SPEX Techs., Inc. v. Kingston Technology Corp.*, No. 8:16-cv-01790 (C.D. Cal.)

Ex. 1016: Exhibit F to Exhibit 1015 (Jones et al., U.S. Patent No. 5,623,637)

⁹ We note that the record includes two exhibits numbered as “Ex. 1012”; specifically, Petitioner also filed a Declaration of Oliver J. Richards as Exhibit 1012 on April 17, 2018.

¹⁰ We note that the record includes two exhibits numbered as “Ex. 1013”; specifically, Petitioner also filed a transcript of the May 10, 2018, teleconference between the Board and the parties as Exhibit 1013 on May 14, 2018.

Ex. 1017: Excerpts from Exhibits G & H to Ex. 1015 (PCMCIA PC Card Standard, Release 2.01, and PCMCIA Card Services Specification, Release 2.0, respectively)¹¹

Ex. 1018: Exhibit D to Ex. 1015 (Bialick et al., U.S. Patent No. 6,088,802)

In its Supplemental Brief, Petitioner contends that Patent Owner interpreted the claims differently in district court litigation for the purpose of alleging infringement by certain of Petitioner's products and that "[t]he supplemental evidence [sic] resolves any concerns the Board might have had at institution regarding Jones' disclosure" of the "receiving" and "providing" steps that the Board found not to be disclosed by Jones. Pet. Supp. Br. 2–3. Specifically, Petitioner argues, first, that "Spex's litigation expert Dr. Rhyne admitted that because Jones (the substantive identical US counterpart^[12]) discloses a PCMCIA card, Jones incorporates the teachings of the PCMCIA standard to a [person of ordinary skill in the art]"; second, that "Dr. Rhyne further admitted that 'there is teaching within the PCMCIA standard of performing' the step of 'receiving a request from a host computing device for information regarding the type of the peripheral device,'" as recited in claim 38 of related U.S. Patent No. 6,088,802 (Ex. 1018, "the '802 patent"); third, that "the PCMCIA standard taught 'providing to the host computing device in response to a request information regarding the type of defined interaction,'" as recited in claim 38 of the '802 patent; and fourth, that

¹¹ We note that Petitioner incompletely described Exhibit 1017 in its Exhibit List in its Supplemental Brief as "Excerpts from Exhibits G & H to Exhibit 1015, PCMCIA PC Card Standard," without any reference to the "PCMCIA PC Card Services Specification" indicated in the headers of pages 68–75 of the exhibit. Pet. Supp. Br. ii.

¹² Referring to Exhibit 1016.

“[t]hese limitations from claim 38 of a related patent are substantively identical to the limitations at issue in claim 55 and Dr. Rhyne opined that the limitations rise and fall together.” Pet. Supp. Br. 3–4 (citing Ex. 1013 ¶¶ 177–180; Ex. 1014, 135:4–10, 137:18–22, 162:15–17, 281:16–24, 289:20–24; Ex. 1018, 22:18–23). Petitioner asserts that “Spex should be held to the admissions of its litigation expert, which resolve any dispute concerning whether Jones teaches these limitations of claim 55.” *Id.* at 4.

Petitioner further contends that Dr. Rhyne’s admissions are supported by Jones; the ’135 patent itself; the testimony of Dr. John D. Villasenor, Petitioner’s declarant in related litigation; and the PCMCIA PC Card standard. *Id.* at 4–5. Petitioner points, in particular, to disclosure in Jones of “attribute memory” that “holds a Card Information Structure (‘CIS’) which is organized in a ‘Metaformat’ defined in Section 5 of the PCMCIA PC Card Standard, Release 2.01, for handling numerous different data recording formats,” where “[t]he CIS is organized as hierarchy of layers and takes the form of a chain (linked-list) of data blocks called ‘tuples’” (*id.* (quoting Ex. 1003, 8:25–31¹³)) and disclosure in the ’135 patent that “[t]he PCMCIA standard . . . includes a specification, called the . . . [CIS] that defines, among other things, a location in a portion of memory of a PCMCIA card, denoted as ‘attribute memory’, that stores data identifying the type of the PCMCIA card” (*id.* at 5 (quoting Ex. 1001, 10:36–41)). Petitioner alleges that the stored information “unquestionably includes information regarding the type of PCMCIA device,” citing disclosure in the PCMCIA PC Card

¹³ Although Petitioner cites “Ex. 1003, at 10:25:31,” we find the quoted language at Jones’s page 8, corresponding to page 10 of Exhibit 1003. See *supra* note 8.

Standard that “device-information tuples” include, among other things, “device type . . . information.” *Id.*; Ex. 1017, 27.

Citing a separate portion of Exhibit 1017 (i.e., that bearing the header “PC Card Services Specification, Release 2.0”; *see supra* note 11), Petitioner further alleges that “[w]hen a PCMCIA card is inserted into a host computer, the computer needs to ‘process a [PCMCIA] Card’s Card Information Structure to determine if and how [it] will interact with a card detected in a socket.’” Pet. Supp. Br. 5 (citing Ex. 1017, 68). Relying on Dr. Villasenor’s declaration, Petitioner further alleges that “the PCMCIA specification ‘discloses multiple commands . . . that can be used to request information including the type of peripheral device from the CIS,’ and that “[t]he client retrieves the contents of the tuple by using GetTupleData’ and teaches that when a card is inserted into a host computer, ‘Card Services uses a “Callback” function that “attempts to read the [CIS].”’” *Id.* at 5–6 (quoting Ex. 1015 ¶¶ 259, 238). “In addition,” Petitioner contends, “the PCMCIA specification also includes a command called ‘GetConfigurationInfo’ which ‘returns information about the specified socket and PC Card configuration.’” *Id.* at 6 (quoting Ex. 1017, 72–73). According to Petitioner, “Dr. Rhyne did not dispute this and admitted in deposition that ‘[i]t’s a standard PCMCIA interface protocol to gather tuple information on a peripheral device by the host computer’ and that this tuple information include information about ‘device speed, device size, device type, and address-space layout information.’” *Id.* (citing Ex. 1014, 99:21–24, 291:18–21). Petitioner further asserts, without any citation to evidence, that “[t]he ‘automatic’ process described in Jones is standard PCMCIA functionality, which allow the host computer to automatically request information regarding the type of

PCMCIA card and the PCMCIA card to provide the requested device information in response.” *Id.*

Patent Owner responds, as an initial matter, that the Board should not consider Petitioner’s arguments in its Supplemental Brief because it “injects new arguments and new invalidity theories into this review.” PO Supp. Br. 1. Patent Owner contends, “[e]ssentially Petitioner seeks a do-over with Exhibit 1017 as prior-art reference” and “proposes new arguments which are not factually supported by the Jones disclosure and found only in the newly-introduced exhibits.” *Id.* at 1–2. Patent Owner further contends that, whereas Petitioner represented to the Board in its motion for submission of supplemental information that “in deposition, SPEX’s expert admitted that [the receiving and providing] steps [of claim 55] were taught by the U.S. counterpart to . . . Jones,” “Petitioner’s characterization of Dr. Rhyne’s PCMCIA testimony amounts to a gross overstatement,” and Dr. Rhyne did not admit that any of the claimed limitations are disclosed by the Jones reference. *Id.* at 2. According to Patent Owner, “[i]t would be improper to draw conclusions about components of the Jones disclosure based on the concepts of PCMCIA generally, unless those concepts are disclosed in [a] reference that was explicitly incorporated by reference or inherent in Jones.” *Id.* at 3. “[T]hat is not the case here,” Patent Owner contends, and “[e]ach of Petitioner’s out-of-context excerpts identified by Petitioner in Dr. Rhyne’s testimony reflects statements made concerning ‘PCMCIA,’ not concerning the disclosure of the Jones reference.” *Id.* at 3–4.

Patent Owner further contends, “Petitioner constructs a new invalidity theory based on user-specified functions that *may* be implemented in a callback, such as GetTupleData and GetConfigurationInfo,” but “neither of

the commands is mandated by the PCMCIA standard and there is no proof in this case that GetTupleData and GetConfigurationInfo have ever been actually implemented in the same embodiments as disclosed by Jones.” PO Supp. Br. 6–7. In particular, Patent Owner contends, “Jones makes no reference to these commands,” “Petitioner’s expert in this proceeding, Mr. Roy A. Griffin, III, has not provided any testimony to the contrary,” and “[t]he Petition and its expert declaration do not reference any such commands.” *Id.* at 7. Patent Owner further contends that “Petitioner did not argue inherency or submit any evidence to meet its burden of proof to show inherency.” *Id.* at 9.

With regard to Petitioner’s alternative assertion of unpatentability over Jones under 35 U.S.C. § 103(a), Patent Owner argues

Petitioner does not identify any obviousness argument with the requisite motivation or expert testimony from Mr. Griffin as to why the invention as claimed would have been obvious to a person of ordinary skill in the art at the time of the invention in view of Jones and the PCMCIA reference Ex. 1017.”

PO Supp. Br. 9. Finally, Patent Owner argues that “Petitioner did not identify any incorporations-by-reference in the Jones disclosure . . . to the PCMCIA, and Mr. Rhyne’s testimony cannot be used to circumvent the exacting requirements on incorporating a document.” *Id.* According to Patent Owner, “[b]ecause Jones does not incorporate-by-reference any of the new exhibits 1012–1018, Petitioner never asserts that the Jones reference identifies which specific material for incorporation and its expert fails to opine on the same.” *Id.* at 10. Patent Owner concludes, “Petitioner has failed to meet its burden to show that the claimed limitations are disclosed in or rendered obvious by the Jones reference.” *Id.*

As stated in Section III.B.1. *supra*, a claim is anticipated “only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros.*, 814 F.2d at 631. Because Jones does not *expressly* disclose the receiving and providing steps of claim 55, it was Petitioner’s burden to show that those steps were necessarily present, i.e., that they were inherently disclosed. Petitioner has not met that burden here.

Even if we accept that Exhibit 1017 includes, *inter alia*, excerpts from the “PC Card Standard, Release 2.01” referenced by Jones (*see* Ex. 1003, 5:22–23; *see also id.* at 8:28 (referring to “PCMCIA Card Standard, Release 2.01”)), the evidence of record is insufficient for us to conclude that a person of ordinary skill in the art at the time of the invention would have understood from Jones’s citation to the standard and its disclosure of information stored in attribute memory of a secure memory card to enable a host computer “to automatically identify the particular PCMCIA card as soon as the card and host are connected” (*id.* at 5:24–27) that the memory card in Jones’s system *necessarily* functions by “*receiving a request* from the host computing device for information regarding the type of the modular device” and “*providing* the type of the target module . . . *in response to the request*,” as recited in claim 55 (*italics added*). Although the `GetTupleData` or `GetConfigurationInfo` commands appear to provide two potential ways that a host computer could request information from a PCMCIA-compliant card, we are not persuaded that either command is *necessarily* involved in the “automatic[] identif[ication]” recited by Jones. Although those commands *may* be involved, “inherency . . . may not be established by probabilities or possibilities.” *Robertson*, 169 F.3d at 745. We note in this

regard that Exhibit 1017 provides only bibliographic information, a table of contents, and one section from what purports to be the PCMCIA PC Card Standard, Release 2.01, whereas the remainder—including the specific pages cited by Petitioner and relied upon in Dr. Villasenor’s declaration¹⁴ as disclosing the GetTupleData and GetConfigurationInfo commands—instead are from what appears to be the PCMCIA PC Card Services Specification, Release 2.0. *See supra* note 11. Without the complete versions of these documents or persuasive evidence that the GetTupleData and GetConfigurationInfo commands provided the only means by which a PCMCIA-compliant card could have provided module type information to a host, we can only speculate as to what else might be disclosed in them.

Indeed, Petitioner’s omission from its description of Exhibit 1017 of any reference to the PC Card Services Specification (*see id.*; Pet. Supp. Br. ii) is particularly substantial, given that Petitioner’s arguments in its Supplemental Brief and at the oral hearing were premised in substantial part on the fact that Jones contains explicit references to the PCMCIA PC Card Standard, Release 2.01. We find no reference in Jones to the PCMCIA PC Card *Services Specification*, whether Release 2.0 or any other release.

¹⁴ As Patent Owner points out (PO Supp. Br. 6), Petitioner’s district court declarant, Dr. Villasenor, is not an expert in this proceeding and has not filed any expert testimony in this proceeding, and, Patent Owner contends, Patent Owner has not had the opportunity to cross-examine Dr. Villasenor in connection with the Petition (*id.*). As Patent Owner also points out (*id.* at 7), neither the Petition nor the declaration of Petitioner’s declarant in *this* proceeding, Mr. Griffin, referenced the GetTupleData and GetConfigurationInfo commands relied upon by Petitioner in its Supplemental Brief, nor did either the Petition or Mr. Griffin’s declaration cite the PCMCIA PC Card Standard or PC Card Services Specification (*see generally* Pet.; Ex. 1003).

Further, although Exhibit 1017 includes a table of contents for the PC Card Standard (see Ex. 1017, 9–15), it includes no table of contents for the PC Card Services Specification, leaving the record devoid of any evidence of what was not included in the provided excerpts.

Further, despite Petitioner’s argument that, “[w]hen a PCMCIA card is inserted into a host computer, the computer needs to ‘process a [PCMCIA] Card’s Card Information Structure to determine if and how [it] will interact with a card detected in a socket’” (Pet. Supp. Br. 5 (quoting Ex. 1017, 68–69)), we find that the quoted portion of the PC Card Services Specification, in context, does not include such mandatory language. Rather, the complete sentence from which Petitioner abstracted the quoted language, and a following explanatory parenthetical, state: “Card Services clients *may* need to process a PC Card’s Card Information Structure (CIS) to determine if and how they will interact with a card detected in a socket. (*Some clients may receive all the information they require from the CARD_INSERTION event*).” Ex. 1017, 68 (italics added). The complete quotation suggests that the described functions that follow—including later in the same paragraph the use of the GetTupleData command relied upon by Petitioner—are not necessarily required.

Lastly, with regard to Petitioner’s alternative assertion of unpatentability over Jones under 35 U.S.C. § 103(a), we agree with Patent Owner (PO Supp. Br. 9) that Petitioner also has not made out a persuasive case of obviousness by a preponderance of the evidence. As we stated in our discussion of claim 58 in the Institution Decision, and equally applicable here with regard to claims 55 and 56, “despite asserting obviousness, Petitioner does not identify which, if any, of the limitations of the Jones

reference may be missing and how those limitations might be obvious.” Dec. 26 (quoting Prelim. Resp. 3). Whereas Petitioner recognizes, in connection with its asserted ground based on the combination of Jones with either or both of Security Modules and Common Interface Specification the possibility that we might find that Jones does not disclose physically separate security and target modules recited in claim 55 (*see* Pet. 33; *see also infra* Section III.B.4.), Petitioner does not allege that such physically separate structures would have been obvious to a person of ordinary skill in the art in view of Jones if they are not taught by Jones. More to the point here, Petitioner does not allege that a person of ordinary skill in the art would have been motivated to modify Jones to include the recited “receiving” and “providing” steps, but instead merely alleges that Jones itself discloses or teaches those steps. Pet. 18–20; Pet. Supp. Br. 3–7.

In conclusion, therefore, we agree with Patent Owner that Petitioner has not met its burden to show by a preponderance of the evidence that claims 55 and 56 are anticipated or rendered obvious by Jones. PO Supp. Br. 10.

ii. Claim 57

Claim 57 recites, in part, the steps of “*communicating with the host computing device to exchange data between the host computing device and the modular device*” and “*performing one or more security operations and the defined interaction on the exchanged data.*” Ex. 1001, 26:42–46 (italics added). Petitioner contends with respect to the first of these steps that “[t]he preferred embodiments [of the ’135 patent] utilize a PCMCIA bus to communicate with the host computing device to exchange data.” Pet. 26 (citing Ex. 1001, Fig. 1; Ex. 1010 ¶ 64). In support of its contention that

Jones teaches or suggests this step, Petitioner merely asserts that “Jones discloses using the same bus (i.e., PCMCIA) for communication between the host and the modular device.” *Id.* (citing Ex. 1003, 4:1–15; Ex. 1010 ¶ 65). With respect to the step of “performing one or more security operations and the defined interaction on the exchanged data,” Petitioner contends that “Jones’s modular device performs one or more security operations on the exchanged data,” including “selectively enabl[ing] and disabl[ing] the exchange of data between a host and modular device based upon a security comparison involving a password,” and “[i]f the comparison involving the password is successful, the defined interaction (i.e., the transfer of data between the host computer 110 and the data storage 150) is effected.” *Id.* at 26–28 (citing Ex. 1003, 7:16–8:12, 11:15–20, Figs. 1, 2; Ex. 1010 ¶¶ 67–69).

In the Institution Decision, we found that Petitioner did not identify, in connection with the “communicating” step of claim 57, any disclosure in Jones of “communicating . . . to exchange data between [a] host computing device and [a] modular device,” but instead that the only disclosure Petitioner identified in Jones of any such communication is the transfer of data between host computer 110 and data storage 150 that Petitioner relies upon as corresponding to the step of “performing . . . the defined interaction on the exchanged data.” Dec. 19–20 (citing Pet. 26–28). We agreed with Patent Owner that claim 57 “explicitly requires ‘communicating . . . to exchange data’ as a separate limitation from ‘performing one or more security operations and the defined interaction on the exchanged data,’” and “[t]hus, the ‘defined interaction on the exchanged data’ cannot simply be the transfer of data that satisfies the ‘communicating . . . to exchange data’

step.” *Id.* at 20 (citing Prelim. Resp. 23; claim 57). Because Petitioner did not identify in the Petition any disclosure in Jones of “communicating . . . to exchange data” as a step separate from the exchange alleged to teach the “perform[ance of] . . . the defined interaction,” we concluded Petitioner had not established a reasonable likelihood of prevailing in showing that Jones anticipates or renders obvious the subject matter of claim 57. *Id.*

In its Supplemental Brief, Petitioner contends it explained in its Petition “that because the PCMCIA card of Jones allowed for the transfer and storage of data, it taught the steps of ‘communicating with the host computing device to exchange data . . .’ and the ‘performing . . . the defined interaction’ steps of claim 57.” Pet. Supp. Br. 8 (citing Pet. 26–28). Petitioner further contends that although the Board denied institution “[b]ased on Spex’s argument that these limitations could not both be met by transfer and storage of data” (*id.* at 8–9 (citing Dec. 19–20)), Patent Owner’s “arguments . . . are directly contrary to what Spex asserted in accusing infringement in the district court litigation” (*id.* at 9). In particular, citing Dr. Rhyne’s expert report on infringement, Petitioner asserts, “[a]ccording to Spex’s litigation expert, the ‘defined interaction’ in the accused storage devices performed was ‘mass storage’ – *i.e.* the transfer and storage of data.” *Id.* (citing Ex. 1013 ¶¶ 88–90, 163, 192). Petitioner points out that Dr. Rhyne also “[a]t deposition . . . confirmed that ‘the defined interaction would be then it can store data.’” *Id.* (citing Ex. 1014, 191:12–16). Petitioner further alleges that “[w]ith respect to the ‘communicating’ step, the expert similarly identified ‘mass storage’ – arguing that because the accused products were ‘data storage device[s],’ they infringed this element.” *Id.* (citing Ex. 1013 ¶¶ 161, 189; Ex. 1012, 89–90; Ex. 1015, 130–132).

Petitioner argues, “Spex cannot argue that claim limitations can be met by transfer and storage of data for infringement purposes, then deny that transfer or storage of data is sufficient to anticipate these elements.” *Id.*

Patent Owner responds:

Petitioner submits new argument and new invalidity theories based on various citations to new exhibits 1012–1015. However, Petitioner did not assert any “mass storage” to disclose or render obvious the defined interaction limitation. Indeed, Petitioner only asserted that “transfer of data” constituted a defined interaction. *See* Pet. at 27; *see also* Paper 7 at 19. Petitioner’s expert in this proceeding, Mr. Griffin, has not provided any testimony to the contrary. Accordingly, Petitioner’s new “mass storage” argument constitutes a new invalidity theory. The Board should reject these new arguments and find that the defined interaction limitations are not disclosed by Jones or otherwise obvious.

PO Supp. Br. 8.

We agree with Patent Owner that Petitioner’s Supplemental Brief presents new argument and new invalidity theories not presented or relied upon in the Petition. *See* 37 C.F.R. § 42.23(b) (“A reply may only respond to arguments raised in the corresponding opposition, patent owner preliminary response, or patent owner response.”); *see also* Office Patent Trial Practice Guide, August 2018 Update 14, <https://go.usa.gov/xU7GP> (“Petitioner may not submit new evidence or argument in reply that it could have presented earlier, e.g. to make out a prima facie case of unpatentability.”). Notwithstanding Petitioner’s assertions in its Supplemental Brief (Pet. Supp. Br. 8), we do not find in the Petition any mapping of “storage of data” to the communicating and performing steps of claim 57. In fact, the only mention of the word “storage” in the discussion of those steps in the Petition is in a parenthetical statement identifying the

physical components between which the “transfer of data,” alleged in the Petition to be the recited “defined interaction,” allegedly takes place: “If the comparison involving the password is successful, the defined interaction (i.e., the transfer of data between the host computer 110 and the data storage 150) is effected.” Pet. 27–28.¹⁵ Whether or not Patent Owner in district court litigation asserted that “data storage” may, itself, be a “defined interaction” within the meaning of that term in claim 57, that position was not presented in the Petition, and constitutes impermissible new argument.

For these reasons and the reasons stated in our Institution Decision as summarized above, we conclude Petitioner has not established by a preponderance of the evidence that Jones anticipates or would have rendered obvious the subject matter of claim 57.

iii. Claim 58

Claim 58 recites a method “[f]or use in a modular device adapted for communication with a host computing device, the modular device comprising a security module that is adapted to enable one or more security operations to be performed on data and a target module that is adapted to enable a defined interaction with the host computing device.” Referring to Figure 1 of Jones, reproduced in Section III.B.2.a. *supra*, Petitioner contends that Jones’s memory card 100 is a “modular device” that is “adapted for communication with a host computing device” (i.e., host personal computer 110). Pet. 16. Petitioner further contends that memory card 100 includes two “security modules” (smartcard I.C. 250 and application specific integrated circuit (ASIC) 290), each of which is “adapted to enable one or

¹⁵ Nor does any other grammatical form of “storage,” such as “store” or “storing,” appear in the Petition in connection with these limitations.

more security operations to be performed on data,” as well as “target modules” (common memory array 150, attribute memory 190). *Id.* at 16–17. With respect to the security modules, Petitioner argues that ASIC 290, for example, performs security operations such as Encrypt-Decrypt of bus data (177), gating of bus data (178), and card lock logic functions (220). *Id.* at 16. Petitioner asserts that smartcard I.C. 250 similarly performs security operations. *Id.* at 16–17 (citing Ex. 1003, 8:7–8 (“The unit 250 encrypts data from the data bus buffer 173 prior to storing the data in the common memory array 150”); Ex. 1010 ¶ 43). With respect to the target modules, Petitioner argues that common memory array 150 and attribute memory 190 each store and retrieve data on command by host personal computer 110. *Id.* at 17. Based on these assertions, Petitioner contends that Jones discloses a “modular device comprising a security module that is adapted to enable one or more security operations to be performed on data and a target module that is adapted to enable a defined interaction with the host computing device,” as recited in the preamble of claim 58. *Id.* at 29.

With respect to the first recited step of the claimed method, “receiving an instruction from a host computing device regarding operation of the modular device,” Petitioner contends Jones teaches provision by the host of various instructions regarding operation of the modular device, including both “conventional PCMCIA standard mechanisms for host computer/PCMCIA Card communications” and “partition lock and partition unlock command[s] . . . for the purpose of establishing access controls (partition locks and unlocks) for subsequent secure access to particular partitions in the target module.” Pet. 29–30. Petitioner asserts, “[t]he partition lock and partition unlock commands are exemplary host originated

instructions regarding operation of the module device.” *Id.* (citing Ex. 1003, 9:16–10:23; Ex. 1010 ¶ 75). Petitioner contends “Jones also teaches that, once a partition lock command has been processed, host access to data within locked partitions requires the communication of a host-originated command that conveys an obfuscated password from the host to the security module so that the security module can validate the password,” and “[i]f the password is successfully validated, the security module then provides the host with access to a locked partition within the target module.” *Id.* at 30–32 (quoting Ex. 1003, 7:20–24, 7:29–33, 10:10–23, 10:32–11:20, Fig. 2; Ex. 1010 ¶¶ 76–77).

With respect to the second recited step of the claimed method, “operably connecting the security module and/or the target module to the host computing device in response to the instruction from the host computing device,” Petitioner refers back to its analysis of a substantively identical step in independent claim 55 and also cites Mr. Griffin’s Declaration. Pet. 32 (citing Ex. 1010 ¶ 78 (citing Ex. 1003, 7:32–8:2)). The referenced analysis of claim 55 advances several theories as to how this step is disclosed by Jones. *Id.* at 20–22. First, Petitioner contends, “operably connecting the target module to the host computing device in response to an instruction from the host computing device is met by the normal ‘unsecured’ operation of the PCMCIA memory card device features.” *Id.* at 20–21 (citing Ex. 1010 ¶ 52). Second, Petitioner asserts that “a partition lock and partition unlock command from the host to the modular device operatively connects the host to the security module for the purpose of establishing access controls (partition locks and unlocks) for subsequent secure access to particular partitions in the target module.” *Id.* at 21. According to

Petitioner, “[t]he partition lock and partition unlock commands are exemplary host originated instructions that operatively connect the security module to the host computing device.” *Id.* (citing Ex. 1003, 10:7–23; Ex. 1010 ¶ 53). Third, Petitioner again cites Jones’s teaching that once a partition lock command has been processed, host access to data within locked partitions requires the communication of a host-originated command that conveys an obfuscated password from the host to the security module so that the security module can validate the password, as being “yet another example of Jones teaching operably connecting the host to the security module in response to a host instruction.” *Id.* In particular, Petitioner contends, “[i]f the password is successfully validated, the security module then provides the host with access to a locked partition within the target module.” *Id.* (citing Ex. 1003, 10:17–23, 10:32–11:20); *see also id.* at 21–22 (citing Ex. 1003, 6:14–20, 7:8–24, 7:29–33, 10:10–20; Ex. 1010 ¶¶ 54–55). Petitioner contends further that this conclusion is reinforced by “Patent Owner’s admissions regarding prior art in connection with the prosecution” of a commonly owned patent application filed the same day as the application for the ’135 patent. *Id.* at 22 (citing Ex. 1009, 5–6; Ex. 1010 ¶ 56).

In the Preliminary Response, Patent Owner argued Petitioner had failed to show that the step of “operably connecting the security module and/or the target module to the host computing device in response to an instruction from the host computing device” is disclosed in Jones. Prelim. Resp. 19. Regarding Petitioner’s argument that this step is disclosed by “the conventional PCMCIA card services specification” (Pet. 20), Patent Owner argued, “[o]ther than this conclusion, . . . Petitioner offers no evidence from

Jones to suggest that this operative connection is made ‘in response to an instruction from the host computing device’” (Prelim. Resp. 19). Regarding Petitioner’s alternative argument, relying on the “partition lock” and “partition unlock” commands of Jones (Pet. 20–21), Patent Owner asserted that “Petitioner does not explain why these commands meet the stated limitations of this step,” and “[i]ndeed, if Petitioner’s arguments are to be taken at face value, ‘the conventional PCMCIA card services specification’ should operably **connect** the modular device to the host computing device prior to the receipt of any ‘PARTITION LOCK’ or ‘PARTITION UNLOCK’ claims” (Prelim. Resp. 19–20). According to Patent Owner, “Petitioner argues that its second argument is in support of its first argument, not in the alternative,” and “Petitioner, however, does not explain how the ‘PARTITION LOCK’ and ‘PARTITION UNLOCK’ commands are relevant if the device is already operably connected to the host computing device.” *Id.* at 20 (citing Pet. 22). Lastly, Patent Owner pointed out that the prosecution history excerpt identified by Petitioner as allegedly reinforcing its arguments was in fact a statement made by the examiner, and contended that Petitioner’s characterization of that excerpt as an admission by Patent Owner is misleading. *Id.*

In our Institution Decision, we explained that we were persuaded, on the record then before us, that Petitioner had established a reasonable likelihood of showing that claim 58 is anticipated by Jones. Dec. 24. We agreed with Patent Owner that Petitioner does not sufficiently demonstrate in the Petition that the step of “operably connecting the security module and/or the target module to the host computing device *in response to an instruction from the host computing device*” (emphasis added) is taught or

suggested by “the conventional PCMCIA card services specification,” but we explained that we were persuaded by Petitioner’s showing that the operation of Jones’s partition lock and partition unlock commands discloses that step. *Id.* at 24–25. We further explained that, contrary to Patent Owner’s argument that “Petitioner argues that its second argument is in support of its first argument” (Prelim. Resp. 20), we understood Petitioner to have presented the partition lock and partition unlock commands as an alternative to—rather than in support of—its mapping of the conventional PCMCIA card services specification to that step. Dec. 25 (citing Pet. 21 (“Jones teaches that, *in addition to conventional card services . . .*” (italics added))). We additionally pointed out that Petitioner further contends that “Jones *also* teaches that, once a partition lock command has been processed, host access to data within locked partitions requires the communication of a host-originated command . . . so that the security module can validate the password,” and that “[t]*his is yet another example* of Jones teaching operably connecting the host to the security module in response to a host instruction.” *Id.* (quoting Pet. 21 (italics added))).

We also disagreed with Patent Owner’s argument that Petitioner “does not explain how the ‘PARTITION LOCK’ and ‘PARTITION UNLOCK’ commands are relevant if the device is already operably connected to the host computing device” (Prelim. Resp. 20), finding that Petitioner persuasively contends that “a partition lock and partition unlock command from the host to the modular device operatively connects the host to the security module,” and similarly, that “[t]he partition lock and partition unlock commands are exemplary host originated instructions that operatively connect the security module to the host computing device.”

Dec. 25 (quoting Pet. 21). Thus, contrary to the premise of Patent Owner’s argument—that the “device” is “already operably connected” to the host computing device (Prelim. Resp. 20)—we found that Petitioner instead contends that the security module is operably connected to the host computing device only in response to an instruction (e.g., a partition unlock command) from the host computing device, as recited in claim 58. Dec. 25–26.

As to Petitioner’s alternative assertion that claim 58 is unpatentable as obvious over Jones, we agreed with Patent Owner that, “despite asserting obviousness, Petitioner does not identify which, if any, of the limitations of the Jones reference may be missing and how those limitations might be obvious.” Dec. 26 (quoting Prelim. Resp. 3). Whereas Petitioner recognized, in connection with its asserted ground based on the combination of Jones with either or both of Security Modules and Common Interface Specification, the possibility that we might find that Jones does not disclose physically separate security and target modules (*see* Pet. 33; *see also infra* Section III.B.3.), we found that Petitioner does not allege that such physically separate structures would have been obvious to a person of ordinary skill in the art in view of Jones if they are not taught by Jones. Dec. 26.

Lastly, we noted that we were not relying on Petitioner’s arguments concerning the prosecution history (Pet. 22 (quoting Ex. 1009, 5–6)) in support of our determinations. Dec. 26. We agreed with Patent Owner that the excerpt quoted by Petitioner from the prosecution history is a statement of the Examiner, not of the Patent Owner, and that excerpt does not, in any

event, appear to refer to Jones or to any of the other references relied upon in the Petition. *Id.*

In its Response, Patent Owner raises four principal arguments in response to Petitioner's contentions: (1) Jones fails to disclose "receiving an instruction from a host computing device regarding operation of the modular device"; (2) Jones fails to disclose "operably connecting the security module and/or the target module to the host computing device in response to the instruction from the host computing device"; (3) Petitioner failed to identify where Jones discloses the claimed "defined interaction"; and (4) Petitioner's interpretation of the terms "instruction," "security operation," and "operation of the modular device" impermissibly renders required claim limitations superfluous. PO Resp. 13–23. We address each, along with Petitioner's counterarguments in its Reply, in turn below.

"receiving an instruction . . . regarding operation of the modular device"

With respect to the "receiving" step, Patent Owner summarizes Petitioner's three proposed mappings of Jones's disclosure to "receiving an instruction . . . regarding operation of the modular device" (i.e., (1) "conventional PCMCIA standard mechanisms for host computer/PCMCIA Card communications," (2) "partition lock and partition unlock command . . . for the purpose of establishing access controls (partition locks and unlocks) for subsequent secure access to particular partitions in the target module," and (3) "a host-originated command that conveys an obfuscated password from the host to the security module so that the security module can validate the password" (Pet. 30–31)), and contends:

The Board rejected the first theory regarding PCMCIA Card Services in its Institution Decision, and Patent Owner agrees. Paper 7 at 17-18, 24. The second and third theories are

directed to access control, which lacks relation to the **operation of the modular device** and cannot disclose the claimed *instruction regarding. . . the operation of the modular device.*

PO Resp. 14–15. In particular, according to Patent Owner, “neither the communication of a password from user via the host, nor the attempts to access a partition, constitutes an *instruction regarding the operation of the modular device* as claimed,” but “[a]t best a password is merely supplied data.” *Id.* at 15 (citing Ex. 1003, 14:9–10; Ex. 2003 ¶ 27).

Moreover, Patent Owner asserts, “Jones discloses that attempts to access the partition cause the modular device to notify the host about the locked condition and request a password (instead of the modular device receiving an instruction).” PO Resp. 15 (citing Ex. 1003, 7:26–30, 10:17–23; Ex. 2003 ¶ 27). According to Patent Owner:

Following Petitioner’s mapping of Jones’s “command[s]” to the claimed *instruction*, communicating an identity of a modular device is more than simply identifying the presence of the modular device upon a physical (not yet operable) connection. Ex. 1001, at 9:20-50. And, in the broadest sense, the claimed **instruction** is undoubtedly different from access control information because the identity or type of device will be used to inform whether security operations are configured or enabled for the modular device and whether the requirement of access control information (e.g. a password) is, in fact, necessary. Ex. 1001, at 9:51-55 and 13:38-44; Ex. 2003, ¶ 28. One clear example showing that the claimed instruction is different from access control information is that the identity or mode of the modular device may include a mode that configures or enables only the target module, but not the security module and the security module’s operations. Ex. 2003, ¶ 28. Furthermore, receiving access control information ahead of the ordered sequence of claimed steps, would impermissibly exclude key embodiments of the invention.

Id. at 15–16.

In its Reply, Petitioner argues that Patent Owner incorrectly asserts that the recited “instruction . . . regarding operation of the modular device” excludes instructions related to “access control,” but that “there is no basis in the claim language for such an exclusion.” Pet. Reply 3. Petitioner contends that “the claim language is undoubtedly quite broad – merely requiring an instruction ‘regarding operation’ of the entire modular device,” and “[Patent Owner] has not asserted any construction of the terms ‘regarding,’ ‘operation,’ or ‘modular device’ that would somehow exclude access control commands from being an instruction regarding operation.” *Id.* Petitioner further contends, “[Patent Owner’s] argument on this term . . . does little more than declare conclusory that access control commands, like password loading commands are ‘undoubtedly different’ from the claim limitation,” but “[Patent Owner] never explains how the password loading commands fail to be in ‘regard’ to the operation of Jones’s memory card (the modular device), and as Jones shows, it clearly does.” *Id.* at 3–4. For example, Petitioner contends, “as noted in the Petition, the host sends the PARTITION LOCK/PARTITION UNLOCK command and the password loading command to the modular device to enable operation of device after a partition lock has occurred.” *Id.* at 4 (citing Pet. 30–32; Ex. 1010 ¶¶ 76–78; Ex. 1003, 9:20–30, 10:7–23). “To the extent that [Patent Owner] is arguing that the password loading command, partition lock and unlock commands are merely data (password) and not instructions,” Petitioner contends, “this is clearly contradicted by Jones, which even used the term command to refer to the ‘password loading command.’” *Id.* at 4 n.1.

In response to Patent Owner’s argument that the access control information fails to satisfy this limitation because the claimed instruction

“may include a mode that configures or enables only the target module, but not the security modules” (PO Resp. 16), Petitioner argues that “[e]ven if this was true, a command that configures the target means on the modular device as taught by Jones is still an instruction that regards the operation of the modular device, which is all this limitation requires.” Pet. Reply 4–5. In particular, Petitioner points out, “[t]here is no requirement in this limitation that the claimed instruction concern every component within the modular device,” and “[m]oreover, as the commands cited by Petitioner concern password protection (*i.e.*, security), the [Patent Owner’s] entire example actually fails, as the partition lock and unlock commands undoubtedly do affect the operation of the security module.” *Id.* at 5.

We are persuaded by Petitioner’s arguments. Patent Owner has not pointed to any evidence of claim scope disavowal or other special lexicography suggesting that the inventors of the ’135 patent intended to give the phrase “instruction . . . regarding operation” anything other than its plain and ordinary meaning, so as to exclude access-control commands such as the partition lock and partition unlock commands disclosed by Jones as being received by Jones’s modular device from Jones’s host computer and mapped to this limitation by Petitioner. See Pet. 30 (citing Ex. 1003, 9:16–10:23; Ex. 1010 ¶ 75). We agree with Petitioner that Jones’s access-control commands clearly “regard operation” of Jones’s memory card 100, because, for example, “the host send[ing] the . . . PARTITION UNLOCK command and the password loading command to the modular device . . . enable[s] operation of [the] device after a partition lock has occurred.” See Pet. Reply 4 (citing Pet. 30–32; Ex. 1010 ¶¶ 76–78; Ex. 1003, 9:20–30, 10:7–23). We additionally agree with Petitioner that Patent Owner’s example

purportedly “showing that the claimed instruction is different from access control information” (PO Resp. 16) actually supports Petitioner’s position. *See* Pet. Reply 4. Claim 58 recites a “modular device comprising a security module . . . and a target module” and further recites an “instruction . . . regarding operation of the *modular device*” generally, as opposed to operation of *every component within the modular device*. *See* claim 58 (italics added); Pet. Reply 5. Accordingly, we agree with Petitioner that a command that “configures or enables only the target module” within the modular device would nonetheless be an instruction “regarding operation of the modular device” even if it did not also configure or enable the modular device’s security module. Pet. Reply 4–5; *cf.* PO Resp. 16. Finally, although we are unable to ascertain exactly what “ordered sequence” or “key embodiments” Patent Owner is referring to in its argument that “receiving access control information ahead of the ordered sequence of claimed steps, would impermissibly exclude key embodiments of the invention” (PO Resp. 16), which relies on a verbatim statement in Dr. Jawadi’s declaration (Ex. 2003 ¶ 28), we are persuaded by Petitioner’s arguments and evidence that access-control commands such as Jones’s partition unlock command result in—and indeed would logically precede—operable connection of the host and a previously locked memory module. *See* Pet. 30–32; Pet. Reply 4; Ex. 1003 ¶¶ 74–78.

“operably connecting the security module and/or the target module to the host computing device in response to the instruction from the host computing device”

With respect to the “operably connecting” limitation of claim 58, Patent Owner argues, first, that “[t]**he instruction** of this limitation, by antecedent basis, must correspond to the **instruction** of the previous

limitation,” and “[b]ecause the Board rejected the conventional PCMCIA Card Services . . . , disclosure of this limitation must come from the second and third theories advanced above, *i.e.*, partition lock, partition unlock, and host-originated password commands.” PO Resp. 17. According to Patent Owner, however, Petitioner “[i]nstead . . . advances only the already-rejected first theory to allege disclosure of this limitation,” and “Petitioner’s failure to explain, or even allege, whether the second or third theories apply to this limitation is fatal to its case.” *Id.* (citing Pet. 32).

Patent Owner next argues that “Jones fails to disclose *operably connecting . . . in response to the instruction from the host computing device*,” as “Jones’s failure to disclose the claimed instruction regarding operation of the modular device permeates to this limitation.” *Id.* at 18. Patent Owner states that it agrees, in this regard, with the Board’s finding in the Institution Decision that “Petitioner has not sufficiently demonstrated that the [operably connecting] step . . . is taught or suggested by ‘the conventional PCMCIA card services specification.’” *Id.* at 18 (citing Dec. 24). While contending “the analyses should stop here and the validity of claim 58 should be affirmed,” Patent Owner further contends that “Petitioner’s second and third theories [also] fail to disclose operably connecting the security module and/or the target module to the host computing device in response to an instruction from the host computing device,” because “[t]he evidence in Jones supports that the target module and/or security module become operably connected immediately upon configuration, *i.e.* long before the PARTITION LOCK/UNLOCK commands and the password loading command.” *Id.* at 19. According to Patent Owner, “Jones discloses that the ‘memory card 100 is initialized [sic]

as a standard memory card before being first delivered to the end user, and provides one or more freely accessible storage partitions **prior to receiving the first PARTITION LOCK command.**” *Id.* (quoting Ex. 1003, 10:3–5 (emphasis added)). Lastly, Patent Owner alleges:

[R]egardless of whether “PARTITION LOCK” and “PARTITION UNLOCK” commands could constitute an instruction, the fact remains that each and every embodiment of Jones is implemented in accordance with the PCMCIA interface standard, about which Jones explains: “To implement the PCMCIA interface standard, the secure memory card includes a non-volatile attribute memory 190 which stores information enabling the host computer to automatically identify the particular PCMCIA card as soon as the card and host are connected, **and to automatically establish the appropriate hardware/software interface using suitable driver software which executes on the host computer 1 10** [sic].” Ex. 1003, 5:24-29 (Emphasis added.); Ex. 2003, ¶ 32. Thus, Jones discloses that the *operably connecting* occurs **prior to** the proposed commands being sent. Ex. 2003, ¶ 32.

Id. at 19–20.

In its Reply, Petitioner responds that Patent Owner’s argument that “unlocking a target module so that a host computer can write to it is not enough to qualify as an operable connection” is “clearly wrong.” Pet. Reply 5. According to Petitioner, “[t]here is no legitimate dispute that the host computer in Jones cannot perform a write operation to a locked card”; “[t]he card is locked and not connected to the host for its intended storage purpose,” and “only becomes operable and connected for reading and writing in response to the PARTITION LOCK/PARTITION UNLOCK command and the password.” *Id.* at 5–6. Petitioner contends that although Patent Owner’s argument apparently “relies on a narrow construction of ‘operably connecting’ that limits that term to initialization,” “[Patent Owner]

never proposed such a construction and the Board did not adopt such a narrow construction in its institution decision.” *Id.* at 6. Moreover, Petitioner argues, Patent Owner “provides absolutely no support from the specification of the ’135 Patent to justify this narrow construction” and “does not provide a single citation to the ’135 Patent in its entire argument about ‘operably connecting.’” *Id.* Indeed, Petitioner points out, “[t]he term ‘operably connecting’ only appears once outside of the claims of the ’135 Patent, and that is in the Summary of the Invention section,” where its use is merely as a copy of its use in the claims. *Id.*

Nonetheless, Petitioner contends, the specification does provide some insight into the meaning of the term—specifically, according to Petitioner, “[s]ince the operable connection occurs in response to a command from the host, the operable connection cannot be the physical connection of a memory card to the computer.” Pet. Reply 6. Petitioner explains as follows:

Th[e] physical connection (step 501 shown in Figure 5) is the main type of connection described in the specification of the ’135 Patent.

However, as part of Step 505 of Figure 5, the ’135 Patent describes that use of the claimed modular device “can be enabled by one or more Software programs (referred to collectively herein after as a ‘modular device driver’...).” Ex. 1001 at 12:10–16. In other words, prior to enabling actions taken by the device driver on the host, the physical connection with the modular device is not operable to store data on the card. It is only through additional commands from the host that the physical connection become enabled and operable.

Jones describes a virtually identical function. While the card of Jones may be physically connected to a system at any earlier point in time, the storage (*i.e.*, the target module) would not be operably connected if it is in in locked state. PO does not appear to dispute that a locked card is not operable to store data,

and, indeed, it cannot. It is only when the host computer sends the password loading command and unlocks the partition that the connection between the host and the modular device becomes operational.

Accordingly, given that the PO has not requested a claim construction for “operably connecting” that be limited to just the initial physical connection and the ’135 Patent itself does not support finding the plain meaning to be limited in this way, the password loading command and unlock partition commands clearly meet the requirements of claim 58.

Id. at 6–8 (footnote omitted).

We are persuaded by Petitioner’s arguments and cited evidence that Jones discloses the step of “operably connecting the security module and/or the target module to the host computing device in response to the instruction from the host computing device,” where the “instruction” is, for example, a partition unlock command, as discussed in our discussion above of the step of “receiving an instruction . . . regarding operation of the modular device.” Although Patent Owner correctly points out that we found in the Institution Decision that Petitioner had not sufficiently demonstrated in the Petition that this step was taught or suggest by “the conventional PCMCIA card services specification,” as explained above we also found in that Decision that Petitioner had cross-referenced its arguments with respect to a similar limitation of claim 55, including its reliance on the partition lock, partition unlock, and host-originated password commands as being the recited “instructions.” See Dec. 22–25; Pet. 20–22, 32; *see also* Pet. Reply 8–9 (“[T]he operably connecting limitation occurs identically in non-instituted claim 55, which is section VII.A.1.d in the Petition. Pet at 20–22. In addressing the identical limitation in claim 58, it is not necessary to repeat the entire discussion in claim 55, and, indeed, Petitioner did not. . . . SPEX

cannot plausibl[y] argue that it believed that Petitioner was . . . somehow dropping that reliance for the same ‘instruction’ in the second limitation.”). Accordingly, we are not persuaded by Patent Owner’s arguments that “Petitioner fails to carry through each of the . . . theories discussed in the preceding section to this limitation” and that “the analyses should stop here” on the basis of that alleged failure. PO Resp. 17–19. Further, we agree with Petitioner that there is no basis for limiting “operably connecting” to an initial physical connection between a host computing device and modular device, and particularly that, “[s]ince the operable connection occurs in response to a command from the host, the operable connection cannot be the physical connection of a memory card to the computer.” Pet. Reply 6.

We also are not persuaded by Patent Owner’s arguments based on Jones’s disclosures either of a memory card being initialized “before being first delivered to the end user, and provid[ing] . . . freely accessible storage partitions prior to receiving the first PARTITION LOCK command” or of the PCMCIA card having “store[d] information enabling the host computer to automatically identify the particular PCMCIA card as soon as the card and host are connected, and to automatically establish the appropriate hardware/software interface.” PO Resp. 19–20 (emphasis omitted) (quoting Ex. 1003, 10:3–5, 5:24–29). In the paragraphs of Jones following the first of those quotations, Jones further discloses, for example, that a PCMCIA card may already have locked partitions at the time that it is “newly inserted into the socket of a running host computer” or “when the host computer is first powered up.” See Ex. 1003, 10:10–23 (cited at Pet. 21). In such scenarios, although a hardware/software interface may be automatically established as soon as the card and host are connected, we are persuaded by Petitioner’s

arguments and evidence that no “operable connection” would exist between the host computer and the locked memory partitions until after the appropriate access-control commands had been received from the host computer.

“defined interaction”

Regarding the term “defined interaction,” which appears in the preamble of claim 58, Patent Owner contends that Mr. Griffin “confirm[ed] that he did not consider the term ‘defined’ in construing the meaning of the claimed limitation ‘defined interaction’ and simply ignored the term.” PO Resp. 20 (citing Ex. 2002 (Griffin Dep.), 86:11–19). According to Patent Owner, “Mr. Griffin’s testimony confirms that Petitioner and Mr. Griffin failed to address the particularity of the claimed invention when Mr. Griffin’s declaration overlooked the ‘defined’ aspect of the required term ‘defined interaction.’” *Id.* at 21. Accordingly, Patent Owner contends, “Petitioner cannot show that each and every element as set forth in the claim is found in Jones,” and “[m]oreover, Petitioner has failed to meet its burden to specify where this element of the claim is found in the prior art.” *Id.* (citing 37 C.F.R. § 42.104(b)(4); Ex. 2003 ¶ 33).

Petitioner responds that “[t]he Petition clearly identifies a purported defined interaction”; “[Patent Owner] never claims there is a flaw in this section of the Petition nor does it assert that Jones lacks a ‘defined interaction’”; and “[i]ndeed, in its argument, [Patent Owner] never even references the section of the Petition that addresses the ‘defined interaction’ term.” Pet. Reply 9.

We agree with Petitioner that it sufficiently accounted for the term “defined interaction,” as recited in the preamble of claim 58, in its mapping

of Jones’s “exchange of data between the host and the target module (memory)” to the defined interaction recited in claim 57, both of which claims cross-reference discussion in the Petition of the same term in claim 55. *See* Pet. 25–26 (discussion of claim 57, citing discussion of claim 55), 29 (discussion of claim 58, citing discussion of claim 55). Notably, although Patent Owner contends that Mr. Griffin failed to address the “‘defined’ aspect” of this term (PO Resp. 21), Patent Owner does not allege that Jones’s exchange of data is not a defined interaction within the meaning of claim 58 or provide any proposed construction for that term that would exclude such a mapping. Finally, we do not find in the ’135 patent any express definition of “defined interaction,” but find that “communication” between a host computing device and a remote device, a biometric module, or a smart card reader module adapted to communicate with a smart card are provided as examples thereof. *See* Ex. 1001, 4:18–21.

Alleged conflation of claim terms

Patent Owner contends,

Claim 58 requires three distinct claim terms: *instruction*, *security operation*, and *operation of the modular device*. Mr. Griffin’s deposition testimony confirms that Petitioner applied the same interpretation to the three distinct claim terms, thus impermissibly rendering several claim limitations superfluous. Mr. Griffin admitted that he asserted Jones’s commands not only to meet the instruction limitations, but also the *security operation* and *operation of the modular device* limitations Ex. 2002, Griffin Dep., 87:19–88:25.

Accordingly, Petitioner cannot show that each and every element as set forth in the claim is found in . . . Jones, and Petitioner has failed to meet its burden to specify where this

element of the claim is found in the prior art. 37 C.F.R. § 42.104(b)(4). Ex. 2003, ¶ 34.

PO Resp. 21–23.

Petitioner responds that there is no basis in the claims for Patent Owner’s arguments. Pet. Reply 10. Petitioner contends the section of deposition testimony cited by Patent Owner “simply shows that Mr. Griffin was relying on various aspects of the Access Control functions to cover multiple claim elements,” and “[n]othing in the language of claim 58 mandates that the received instruction has no relationship to the claimed security operation.” *Id.* Petitioner points out that Patent Owner does not identify any specific flaw in the Petition or argue a missing element from Jones, does not cite any law that would prevent a received instruction from both operably connecting the target module and being part of a security operation, and does not propose any particular construction for those terms that would require them not to have any relation to one another. *Id.* at 10, 12. Indeed, Petitioner further points out, claim 58 uses the terms “instruction” and “operation of the modular device” within the same limitation and, thus, does not require that they be “wholly unrelated.” *Id.* at 10–11.

Furthermore, Petitioner contends, Patent Owner mischaracterizes Mr. Griffin’s testimony in its arguments. In particular, Petitioner points out, Mr. Griffin “described the PARTITION LOCK/PARTITION UNLOCK command as an example of ‘one instruction that can be received regarding operation of the modular device’”; “explained . . . the term ‘security operation’ and ‘operation of the modular device’ while related have different scopes”; and both in his declaration and at his deposition “referred to several Jones’s teachings to correspond to the term ‘security operation’ in claim 58,

not the PARTITION LOCK/PARTITION UNLOCK command alone.” Pet. Reply 11 (citing Ex. 2002, 87:1–18, 88:16–29; Ex. 1010 ¶ 43).

We are again persuaded by Petitioner’s arguments. In view of the evidence cited by both Patent Owner and Petitioner, we do not understand Mr. Griffin to have improperly conflated the terms “instruction,” “security operation,” and “operation of the modular device.” As Petitioner points out, these terms are not unrelated in the context of claim 58, and claim 58 specifically requires an “instruction . . . regarding operation of the modular device.” We are persuaded, for the reasons previously set forth in this Decision, that Petitioner has established Jones’s PARTITION LOCK/PARTITION UNLOCK *command* is an “instruction” that “regards operation” of Jones’s memory card (i.e., modular device) by locking or unlocking partitions in, and hence preventing or permitting access to data stored on, Jones’s common memory array 150. *See* Pet. 30–32. We further are persuaded that the partition lock and partition unlock *operations* (as opposed to the commands) are “security operations” that are enabled by Jones’s ASIC 290. *See id.* We do not understand Mr. Griffin’s testimony to be inconsistent with this distinction. *See, e.g.*, Ex. 2002, 88:20–24 (Mr. Griffin agreeing that “partition lock and partition unlock” have been mapped to security operations and instruction, where the questioning attorney did not specify whether the question related to commands or operations).

iv. Conclusion

For the foregoing reasons, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claim 58 is anticipated by Jones, but that Petitioner has not demonstrated by a preponderance of the

evidence that claims 55–57 are anticipated by or would have been obvious over Jones.

4. *Obviousness of Claims 55–58 over Jones in Combination with Either or Both of Security Modules and Common Interface Specification*

Petitioner asserts that claims 55–58 are unpatentable over Jones in combination with either or both of Security Modules and Common Interface Specification. Pet. 32–37. Petitioner presents this ground as a fallback position in the event we determine, first, that the challenged claims require that the recited security module be physically separate from the recited target module, and second, that Jones does not disclose such physically separate structures. *Id.* at 33. According to Petitioner, Security Modules and Common Interface Specification both disclose that using a security module that is separate from a target module can enhance data security, and Petitioner further contends that one of ordinary skill in the art “would have been motivated to combine Security Modules and/or Common Interface Specification with Jones, to provide a structure that has a security module that is separate from the data storage structure, to provide the enhanced security taught in Security Modules and Common Interface Specification.” *Id.* at 32–33 (citing Ex. 1010 ¶¶ 84–85).

In its Preliminary Response, Patent Owner contended this ground is “malformed,” arguing that “Petitioner does not identify any differences between the references and the claims, and provides merely conclusory statements with regard to any alleged motivation to combine.” Prelim. Resp. 26. Patent Owner further contended that the addition of Security Modules and Common Interface Specification does not address the alleged

deficiencies identified in connection with the grounds based solely on Jones. *Id.* at 27.

a. Claims 55–57

We agree with Patent Owner that the addition of Security Modules and Common Interface Specification does not address the deficiencies of Jones with respect to claims 55–57. Petitioner does not rely in the Petition on Security Modules or Common Interface Specification to teach or suggest “*receiving a request* from the host computing device for information regarding the type of the modular device” and “*providing the type of the target module to the host computing device in response to the request,*” as recited in claim 55 (italics added), or to teach or suggest “communicating with the host computing device” and “performing one or more security operations and the defined interaction on the exchange[d] data,” as recited in claim 57. Petitioner instead relies solely on Jones for each of those limitations. *See generally* Pet. 18–20, 25–28, 32–37. Accordingly, for the same reasons as set forth in Section III.B.3.b.i.–ii. *supra* with respect to the alleged grounds based on Jones alone, we conclude that Petitioner has not established by a preponderance of the evidence that claims 55–57 are unpatentable over the combined teachings of Jones, Security Modules, and Common Interface Specification.

b. Claim 58

In our Institution Decision, we stated that we were persuaded on the preliminary record then before us that Petitioner had established that it would have a reasonable likelihood of prevailing in showing that the subject matter of claim 58 would have been obvious over the combined teachings of Jones and Security Modules in the event that the full record at trial did not

establish that Jones alone disclosed the recited security module and target module as physically separate structures. Dec. 28–30.¹⁶ Having now found claim 58 unpatentable over Jones (*see supra* Section III.B.3.b.iii.), we do not separately reach these additional challenges to claim 58.

5. *Obviousness of Claim 57 over Jones in Combination with Either or Both of Schwartz and Kimura*

Petitioner asserts that claim 57 is unpatentable over Jones in combination with either or both of Schwartz and Kimura. Pet. 37–38. Petitioner does not rely in the Petition on Schwartz or Kimura to teach or suggest “communicating with the host computing device” and “performing one or more security operations and the defined interaction on the exchanged data,” as recited in claim 57, but instead relies solely on Jones for those limitations. Accordingly, for the same reasons as set forth in Section III.B.3.b.ii. *supra* with respect to the alleged grounds based on Jones alone, we conclude that Petitioner has not established by a preponderance of

¹⁶ Because Petitioner cited Common Interface Specification for essentially the same teachings as it cited Security Modules and did not provide any persuasive explanation as to the relative strengths and weaknesses of those references, we declined in the Institution Decision to institute *inter partes* review as to the alternative grounds based on the two-way combination of Jones and Common Interface Specification and the three-way combination of Jones, Common Interface Specification, and Security Modules. Dec. 29–30. Notably, the Petition does not cite either Security Modules or Common Interface Specification to teach or suggest the limitations of claim 58 disputed by Patent Owner the “defined interaction” or the steps of “receiving an instruction . . . regarding operation of the device” and “operably connecting the security module and/or the target module to the host computing device in response to the instruction from the host computing device” recited in claim 58.

the evidence that claim 57 is unpatentable over the combined teachings of Jones, Schwartz, and Kimura.

C. Patent Owner's Motion to Exclude Evidence

In *inter partes* review proceedings, documents are admitted into evidence subject to an opposing party asserting objections to the evidence and moving to exclude the evidence. 37 C.F.R. § 42.64. Patent Owner moves to exclude Exhibits 1012–1015, 1017, 1019, and 1020, to which it previously objected. Mot. Excl. 1–20. We dismiss as moot Patent Owner's motion because (1) even without excluding Exhibits 1012–1015, 1017, 1019, and 1020, Petitioner has failed to establish by a preponderance of the evidence that claims 55–57 are unpatentable; and (2) we have not relied on any of Exhibits 1012–1015, 1017, 1019, and 1020 in reaching our determination that Petitioner has established the unpatentability of claim 58 by a preponderance of the evidence. *See supra* Sections III.B.3.–5.

D. Summary

Upon due consideration of the trial record, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claim 58 of the '135 patent is unpatentable as anticipated by Jones but has not demonstrated by a preponderance of the evidence that claims 55–57 are unpatentable on any of the asserted grounds.

IV. ORDER

Accordingly, for the foregoing reasons, it is

ORDERED that claim 58 of U.S. Patent No. 6,003,135 is held unpatentable;

FURTHER ORDERED that claims 55–57 of U.S. Patent No. 6,003,135 have not been shown to be unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Exclude Exhibits 1012–1015, 1017, 1019, and 1020 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.

IPR2017-01021
Patent 6,003,135

PETITIONER:

David Hoffman
FISH & RICHARDSON P.C.
hoffman@fr.com

Martha Hopkins
LAW OFFICES OF S. J. CHRISTINE YANG
mhopkins@sjclawpc.com

PATENT OWNER:

Vincent J. Rubino, III
Alfred R. Fabricant
Enrique W. Iturralde
Peter Lambrianakos
BROWN RUDNICK LLP
vrubino@brownrudnick.com
afabricant@brownrudnick.com
eiturralde@brownrudnick.com
plambrianakos@brownrudnick.com