UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SAMSUNG ELECTRONICS CO., LTD., and

SAMSUNG ELECTRONICS AMERICA, INC.,

Petitioners,

v.

ICASHE, INC.,

Patent Owner.

_____

Case IPR2025-00642
Patent No. 8,403,219

_____

PETITION FOR *INTER PARTES* REVIEW

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EXHIBIT LIST

Exhibit No.	DESCRIPTION
1001*	U.S. Patent No. 8,403,219 ("'219")
1002*	File History of U.S. Application No. 13/651,365 ("'219FH")
1003*	Declaration of Henry Dreifus in Support of Petition for *Inter Partes* Review of U.S. Patent. No. 8,403,219 ("Dreifus")
1004-1008	*Reserved*
1009	U.S. Patent No. 5,943,624 ("Fox")
1010-1013	*Reserved*
1014*	Plaintiff iCashe's Infringement Contentions, Including Exhibit E
1015	Uwe Hansmann et al., Smart Card Application Development Using Java (July 2002)
1016	Software, Microsoft Press Computer Dictionary (2nd ed., 1993)
1017-1018	*Reserved*
1019	Katherine M. Shelfer and J. Drew Procaccino, Smart Card Evolution (July 2002)
1020	U.S. Patent App. Pub. No. 2005/0015275 ("Takekawa")
1021	U.S. Patent No. 6,402,033 ("Ohrn")
1022	U.S. Patent No. 6,138,916 ("Zolkos")
1023	U.S. Patent App. Pub. 2005/0165784 ("Gomez")
1024	U.S. Patent App. Pub. 2004/0146066 ("Palmade")
1025	U.S. Patent App. Pub. 2003/0168515 ("Gray")
1026	U.S. Patent App. Pub. 2006/0056216 ("Rhelimi")
1027	L. A Mohammed et al., Smart Card Technology: Past, Present, and Future (2004) ("Mohammed")

Exhibit No.	DESCRIPTION
1028-1032	*Reserved*
1033	U.S. Patent App. Pub. 2007/0026893 ("Sakamoto")
1034	Finkenzeller, K., RFID Handbook, First Edition ("Finkenzeller-RFID")
1035-1037	*Reserved*
1038	U.S. Patent App. Pub. 2004/0214560 ("Date")
1039	U.S. Patent No. 6,012,634 ("Brogan")
1040	Serway Jewett, Physics for Scientists and Engineers (6th ed., 2004)
1041-1049	*Reserved*
1050	Docket Control Order, *iCashe, Inc. v. Samsung Electronics Co.*, No. 2:24-cv-00429-JRG (E.D. Tex.)
1051	Docket Control Order, *Valtrus Innovations Ltd. v. NTT Data Services, LLC*, No. 2:24-cv-00361, (E.D. Tex.)
1052	Docket Control Order, *Fleet Connect Solutions LLC v. The Kroger Co.*, No. 2:24-cv-00430 (E.D. Tex.)
1053	Docket Control Order, *C47 Technologies LLC v. TCL Technology Group Corporation f/k/a TCL Corporation*, No. 2:24-cv-00417 (E.D. Tex.)
1054	Docket Control Order, *SiOnyx, LLC v. Samsung Electronics, Co., Ltd.*, No. 2:24-cv-00408 (E.D. Tex.)
1055	Docket Control Order, *Stingray IP Solutions LLC v. Allegion Public Limited Company*, No. 2:24-cv-00396 (E.D. Tex.)
1056	Docket Control Order, *ElectraLED, Inc. v. Astera LED Technology GmbH*, No. 2:24-cv-00512 (E.D. Tex.)
1057	Docket Control Order, *Alto Dynamics, LLC v. Fresha.com SV Ltd.*, 2:24-cv-00468 (E.D. Tex.)
1058	Docket Control Order, *Cloud Byte LLC v. Dell Inc.*, No. 2:24-cv-00637 (E.D. Tex.)
1059	September 20, 2024 Production Letter in *iCashe, Inc. v. Samsung Electronics Co.*, No. 2:24-cv-00429-JRG (E.D. Tex.)

Exhibit No.	DESCRIPTION
1060	December 12, 2024 Production Letter in *iCashe, Inc. v. Samsung Electronics Co.*, No. 2:24-cv-00429-JRG (E.D. Tex.)
1061*	Declaration of Cheryl Sloane in Support of Petition for *Inter Partes* Review of U.S. Patent No. 8,403,219
Petitioners' have used the same exhibit number to refer to the same document across IPR2025-00642, -00643, -00643, -00644, and -00645, except for those exhibits designated by an *, which indicates that the exhibit is unique to each IPR proceeding.	

TABLE OF ABBREVIATIONS

Abbreviation	DESCRIPTION
’219	U.S. Patent No. 8,403,219 (“’219”) (Ex.1001)
’219FH	File History of U.S. Application No. 13/651,365 (Ex.1002)
Claims / Challenged Claims	Claims 1-6 of the ’219
IPR	*Inter Partes* Review
Petitioners	Petitioners Samsung Electronics Co. Ltd. and Samsung Electronics America Inc.
PO	Patent Owner
POSITA	Person of Ordinary Skill in the Art
PTAB	Patent Trial and Appeal Board
USPTO	United States Patent and Trademark Office

LIST OF CHALLENGED CLAIMS

[1.pre] An apparatus with a compatible interface in a mobile phone,

[1.a] the apparatus including smartcard circuitry accessible by the mobile phone,

[1.b] the smartcard circuitry including a point-of-sale interface to communicate with a point-of-sale terminal,

[1.c] wherein the point-of-sale interface receives power from the mobile phone.

[2] The apparatus of claim 1 wherein the point-of-sale interface comprises circuitry to produce at least one time-varying magnetic field.

[3] The apparatus of claim 2 further comprising memory accessible by the mobile phone.

[4] The apparatus of claim 1 wherein the point-of-sale interface includes circuitry compatible with a hybrid smartcard reader.

[5] The apparatus of claim 1 further comprising memory accessible by the mobile phone.

[6] The apparatus of claim 1 further including software to be installed on the mobile phone.

Pursuant to §§311-319 and §42.1,[1] Samsung Electronics Co. Ltd. and Samsung Electronics America Inc. ("Petitioners") respectfully petition for *inter partes* review of claims 1-6 ("Claims") of U.S. Patent No. 8,403,219 (Ex.1001, "'219"). There is a reasonable likelihood—and it is highly likely—that at least one challenged claim is unpatentable as explained herein. Petitioners request review of the Claims and judgment finding them unpatentable under §§102 and 103.

I. INTRODUCTION

The '219's purported invention is an apparatus for use with a mobile phone, where the apparatus contains smartcard circuitry with a point-of-sale interface that is powered by the mobile phone. '219, 3:52-62, 12:5-14. Ex. 1003 ("Dreifus") ¶40.

But the concept of an apparatus with smartcard circuitry including a point-of-sale interface for use in a mobile phone was already known in the art. For example, **Fox** discloses cellular telephone 10 "incorporates the electronics" for implementing a "single semiconductor integrated circuit 45" (also referred to as "smartcard 45"), including "smartcard logic function 42." Fox, 3:23-28, 3:46, Figs. 2-3. When used,

[1] Section cites are to 35 U.S.C. or 37 C.F.R. as context indicates. All emphasis/annotations added unless noted. Figure annotations herein generally quote the Claims for reference. Citations herein are exemplary and not meant to be limiting.

"a specific transaction within the capability of smartcard logic function 42 may be executed, for example, a point-of-sale transaction, via a merchant's reader." Fox, 5:21-25. **Fox's** phone further includes a "battery and power conditioner 54" that supplies power to smartcard 45. Fox, 4:3-8, Fig. 2. Dreifus ¶¶41-42.

Accordingly, Petitioners request that the Board institute trial and find the Claims unpatentable.

II. MANDATORY NOTICES UNDER 37 C.F.R. §42.8

A. Real Party-in-Interest

Petitioners Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. are the real parties-in-interest. No other party had access to or control over the present Petition, and no other party funded or participated in preparation of the present Petition.

B. Related Matters

The '219 is the subject of the following co-pending civil action:

iCashe, Inc. v. Samsung Elecs. Co., 2-24-cv-00429 (E.D. Tex.) filed June 6, 2024 ("Texas Case").

Petitioners have also filed petitions for IPR of the related U.S. Patents 9,202,156 (IPR2025-00643), 9,208,423 (IPR2025-00644) and 11,270,174 (IPR2025-00645).

C. Lead and Back-Up Counsel

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Petitioners consent to electronic service of documents to the email addresses of the counsel identified above.

III. PAYMENT OF FEES

The undersigned authorizes the Office to charge the fee required by §42.15(a) and any additional fees that might be due to Deposit Account No. 18-1945, under Order No. 110797-0057-651.

IV. REQUIREMENTS FOR *INTER PARTES* REVIEW

A. Grounds for Standing

Pursuant to §42.104(a), Petitioners certify the '219 is available for IPR. Petitioners and any real parties-in-interest are not barred or estopped from requesting IPR challenging the Claims on the grounds identified herein.

B. Identification of Challenge

Pursuant to §§42.104(b) and (b)(1), Petitioners request IPR of the Claims and that the Board cancel the same as unpatentable.

1. The Specific Art on Which the Challenge Is Based

Petitioners rely upon the following art (Dreifus ¶¶55-58):

Name	Ex.	Publication	Filed	Published/ Issued	Prior art under at least
Fox	1009	US5,943,624	6/15/1996	8/24/1999	§§102(a)/ 102(b)/ 102(e)
Takekawa	1020	US2005/0015275	7/14/2004	1/20/2005	§§102(a)/ 102(e)

Each of the above references is prior art to the Claims based on the 2/22/2005 filing date of App. No. 11/330,675 listed in the '219's priority claim. Dreifus ¶56.

2. Statutory Grounds on Which the Challenge Is Based

Ground	Claim(s)	Basis	References
1	1-6	§§102/103	Fox
2	1-6	§103	Fox in view of Takekawa

V. '219 PATENT AND PROSECUTION HISTORY

A. '219

The specification of the '219 discusses an "intelligent electronic device" that internally communicates with an "electronic transaction card." '219, Abstract, 2:16-35. The electronic transaction card includes smartcard circuitry to communicate with a point-of-sale terminal to perform transactions. '219, 3:52-62, 12:5-14. "Electronic transaction card 104 may then be used with a magnetic stripe or smartcard based merchant point-of-sale terminal to effect a transaction." '219, 3:56-59; Dreifus ¶43.

As shown in Figure 22, the electronic transaction card includes "**magnetic/smartcard circuitry 2030.**" '219, Fig. 22, 11:49-12:4. **Magnetic/smartcard circuitry 2030** "may include **circuits to produce time-varying magnetic fields or signals compatible with a smart card reader**." '219, 11:8-10, Fig. 22. The electronic transaction device also includes "**volatile memory 2220**" storing "financial transaction data 2222." '219, Fig. 22, 11:58-64. Fig. 23 shows that the electronic card contains a "**point-of-sale interface**" 2358. '219, 12:5-14, Fig. 23; Dreifus ¶44.

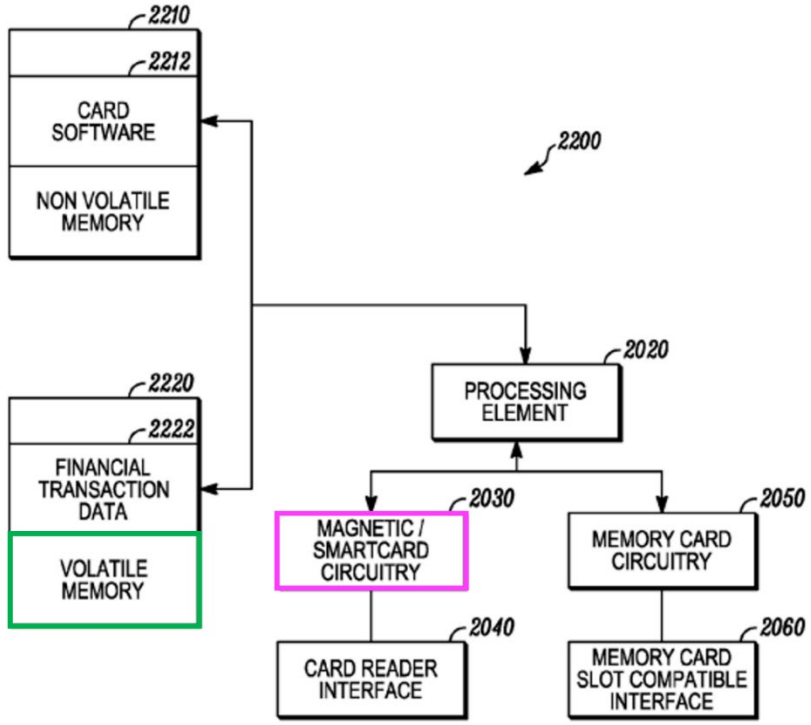

2210
2212
CARD SOFTWARE
NON VOLATILE MEMORY
2200
2020
PROCESSING ELEMENT
2220
2222
FINANCIAL TRANSACTION DATA
VOLATILE MEMORY
2030
MAGNETIC / SMARTCARD CIRCUITRY
2050
MEMORY CARD CIRCUITRY
2040
CARD READER INTERFACE
2060
MEMORY CARD SLOT COMPATIBLE INTERFACE

FIG. 22

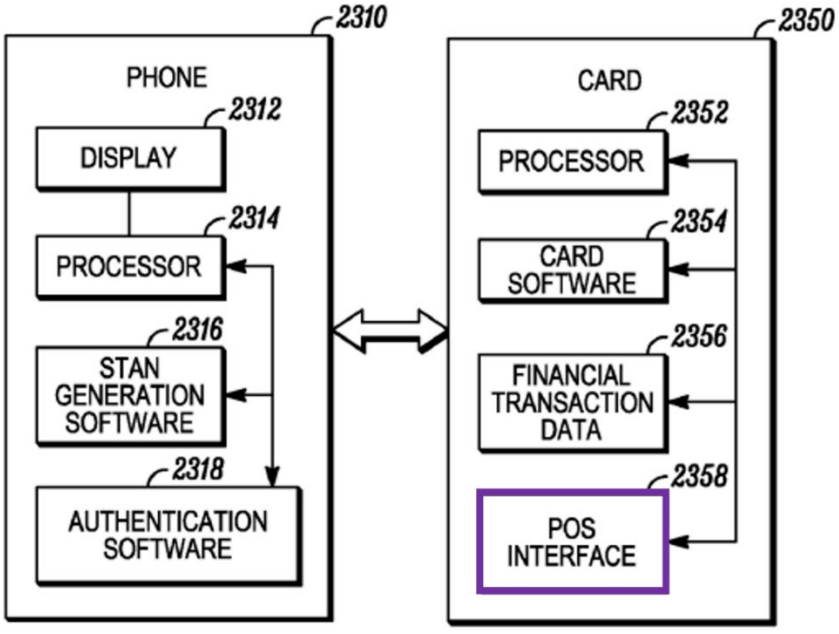

2310
PHONE
2312
DISPLAY
2314
PROCESSOR
2316
STAN GENERATION SOFTWARE
2318
AUTHENTICATION SOFTWARE
2350
CARD
2352
PROCESSOR
2354
CARD SOFTWARE
2356
FINANCIAL TRANSACTION DATA
2358
POS INTERFACE

FIG. 23

B. Prosecution History

The '219 issued from U.S. Pat. App. 13/651,365 ("'365-App"), filed 10/12/2012. Dreifus ¶¶45-46.

During prosecution of the '365-App, the Examiner rejected claims 1-20 on the grounds of nonstatutory double patenting over grandparent-patent claims 1-20 of U.S. Patent No. 8,091,786. Ex.1002, 72. The Examiner found that the '786 identically recites Challenged Claims 1-6, except the preamble of the '786 recites "an add-on card" and not "an apparatus." *Id.* The Examiner concluded that the narrower "add-on card" anticipated the broader "apparatus" of Challenged Claims 1-6 and the corresponding elements are likewise specified in each respective specification. *Id.* Dreifus ¶47.

In response, Applicant filed a terminal disclaimer to overcome the nonstatutory obvious-type double patenting rejection over the grandparent patent. Ex.1002, 84. Applicant did not make any claim amendments. *See id.* The claims were subsequently allowed on 2/21/2013, and the only reason for allowance identified was that the filed terminal disclaimer was "deemed sufficient to overcome the previously issued double patenting rejection." Ex.1002, 95, 100. Dreifus ¶48.

VI. §325(d) AND §314(a) DISCRETION DOES NOT APPLY

A. §325(d)

There is no basis for discretionary denial under §325(d). The references relied

upon in this Petition—**Fox** and **Takekawa**—were not cited in an IDS or otherwise identified by the Examiner, or applied to reject claims during '219's prosecution. The Examiner also never considered the testimony of Petitioners' expert Henry N. Dreifus (Ex.1003) regarding the scope and content of these documents. Dreifus ¶¶59-109. The presented grounds are not cumulative of any prior art previously considered, and are not the same or substantially the same as prior art or arguments previously considered. Indeed, the Examiner did not identify any art teaching claimed features, while the references in this petition describe all the claimed features.

Furthermore, the disclosures considered by the Examiner are not substantially the same as any of the references relied upon in the Grounds of the Petition. For example, **Fox** teaches a mobile phone with a point-of-sale interface. Fox, Abstract, 2:60-61, 3:23-26, 4:43-56. And **Takekawa** teaches downloading software from a smartcard to a phone for installation on the phone. Takekawa, [0012]. *See* §IX. Dreifus, ¶¶59-109.

Even if the art or arguments were substantially the same, the Examiner erred in a manner material to the patentability of the Claims. Because the Examiner "did not expressly consider" nor issue any rejections based on the art relied on in this petition, it is difficult, if not impossible, to explain "why the Examiner allowed the claims" or "how the Examiner might have considered the arguments presented in the

Petition." *Bowtech, Inc. v. MCP IP, LLC*, IPR2019-00379, Pap. 14, *20 (declining to exercise §325(d) discretion).

Indeed, the Examiner did not recognize any art teaching any limitations of the claims. To the extent art considered by the USPTO was substantially the same as the references identified in the Grounds, the Examiner erred by not rejecting the Claims for the reasons discussed in §IX. Dreifus, ¶¶59-109.

B. §314(a)

Co-pending district court litigation pending in the Eastern District of Texas also does not warrant the exercise of discretion under §314(a). *See Apple Inc. v. Fintiv, Inc.*, No. IPR2020-00019, Pap. 11 (designated precedential).

Factor 1 weighs in favor of institution. Petitioners intend to seek a stay of the district court litigation pending the outcome of this IPR, along with other IPRs related to the litigation dispute. At the time of institution, it is highly unlikely that the Court will have conducted a *Markman* hearing, which is currently scheduled for October 28, 2025. Ex.1050, 3.

The Eastern District of Texas has routinely granted stays prior to claim construction, noting such cases have "not reached such an advanced stage that it would weigh against a stay." *Broadphone LLC v. Samsung Elecs. Co.*, No. 2:23-CV-00001-JRG-RSP, 2024 WL 3524022, at *2-3 (E.D. Tex. July 24, 2024) (granting stay where "significant amount of discovery remains, the claim

construction hearing has not occurred, and trial is currently set for [over six months later]"). Even in cases that are far more advanced, the Eastern District of Texas has granted stays where an IPR has been instituted, recognizing "the PTAB's insight and expertise 'is likely to be of considerable assistance to the Court.'" *Onpoint Sys., LLC v. Protect Animals With Satellites, LLC*, No. 4:20-CV-657, 2022 WL 2704166, at *3-4 (E.D. Tex. July 12, 2022) (citation omitted) (granting stay even where "no dispute that this case is in an advanced stage"); *see also Cywee Grp. Ltd. v. Samsung Elecs. Co.*, No. 17-CV-00140, 2019 U.S. Dist. LEXIS 144149, at *19-22 (E.D. Tex. Feb. 14, 2019) (granting stay three months prior to scheduled trial date) (collecting cases where the court granted stays despite trial being four or fewer months away). Given the uncertainty of whether the district court will grant a stay in the litigation, this factor does not favor denial of institution.

To the extent the Board finds that ***Factors 2 and 3*** are neutral or at most weigh slightly against institution, they deserve little weight given Samsung's diligence in preparing and filing this Petition. *Markman* briefing has not commenced; fact discovery is in its infancy (Ex.1050, 4), with iCashe producing fewer than 250 pages beyond their patents, prosecution histories, and other public documents (Exs. 1059-60 (fewer than 11,200 pages total)); and no experts have prepared reports (Ex.1050, 3). *See Apple v. Parus Holdings, Inc.*, No. IPR2020-00686, Pap. 9, *15–17 (aside from initial invalidity contentions, finding "no other significant investment" where

no dispositive motions, expert reports, or *Daubert* challenges occurred). Moreover, although trial is currently set for April 6, 2026, Petitioners expect the district court litigation will be delayed because twelve other active cases are also scheduled for trial on that same date and six of those were filed prior to this litigation. Exs. 1050-58; *see Boe Tech. Grp. Co. v. Optronic Scis. LLC*, No. IPR2024-01130, 2025 WL 305477, *4 (P.T.A.B. Jan. 27, 2025) (*Fintiv* factor 2 "neutral or weigh[s] slightly in favor of not exercising discretion" where Judge Gilstrap "set 10 cases for jury selection on the same day"). The district court has also not issued any substantive orders, including any related to the validity of the '219.

Petitioners' diligence averts parallel, duplicative proceedings, and any unfair costs to Patent Owner. *Sotera Wireless, Inc. v. Masimo Corp.*, No. IPR2020-01019, Pap. 12, *16-17 (precedential as to § II.A); *Apple Inc. v. Maxell, Ltd.*, No. IPR2020-00204, Pap. 11, *16 (refusing to exercise discretionary denial even where trial would be complete nine months before FWD will issue, district court had already issued claim construction order, fact discovery had closed, and expert discovery was underway); *Lego Sys., Inc. v. Mq Gaming LLC*, No. IPR2020-01445, 2021 WL 606917, at *8 (P.T.A.B. Feb. 16, 2021) (granting institution where trial expected to occur "five months before a final written decision," because outweighed by "low" "investment by the court and parties in the [parallel case] on issues common to this proceeding," Petitioner's *Sotera* stipulation "that allays concerns about inefficient

duplication of resources and the potential for inconsistent decisions," and "the merits of the Petition are strong"); *CoolIT Sys., Inc., v. Asetek Danmark A/S*, No. IPR2021-01195, Pap. 10, *9-14 (instituting where district court trial was expected to occur five months before Board's decision, and narrower Sand stipulation filed).

Importantly, fairness considerations weigh in favor of institution under *NHK*. *Fintiv*, Pap. 11, at 11 ("[E]vidence…that the petitioner filed the petition expeditiously…weigh[] against exercising the authority to deny institution under *NHK*."). iCashe has asserted multiple patents against Samsung. Samsung diligently investigated and assessed its options for challenging those patents (including the '219) and had a right to do so before the statutory deadline for pursuing IPR expired. §315(b); *see also Lego*, 2021 WL 606917, at *5 (finding no delay supporting discretionary denial even where invalidity contentions had been served nearly a year prior, recognizing "preparing a petition for *inter partes* review requires substantial effort even after the references and basic theories have been identified"). This right should not be violated. iCashe's selection of a venue with an expedited trial schedule should not be rewarded at the expense of Samsung's rights to pursue review within one year of service of the complaint.

Factor 4 weighs strongly in favor of institution. Upon institution of this IPR proceeding, Petitioners stipulate that, they will not pursue in *iCashe, Inc. v. Samsung Elecs. Co.*, No. 2:24-cv-00429 (E.D. Tex. filed June 6, 2024), the grounds of

invalidity asserted in the IPR, or any other ground that was raised or could have reasonably been raised in the IPR with respect to the Challenged Claims. *Sotera*, Pap. 12, at 19 (finding "stipulation here mitigates any concerns of duplicative efforts…as well as concerns of potentially conflicting decisions" and "ensures that an *inter partes* review is a 'true alternative' to the district court proceeding"); *Lego*, 2021 WL 606917, at *6 ("[F]actor weighs strongly against discretionary denial" where "Petitioner has agreed to be bound by the same stipulation as in *Sotera*").

Factor 5 is either neutral or weighs at most only slightly against institution. Petitioners and Patent Owner are the same parties in the district court litigation. While the overlapping parties may weigh slightly in favor of exercising discretion, institution and a public trial record of the important invalidity grounds in the Petition will reduce issues for the public, including all parties besides Samsung who may in the future be subject to litigation involving the '219.

Factor 6 weighs strongly in favor of institution. The Petition is strong and presents compelling unpatentability arguments that were not previously considered during prosecution. The primary reference, **Fox**, anticipates or renders obvious the claimed apparatus containing smartcard circuitry, and to the extent further express disclosure of an apparatus including software to be installed on the mobile phone is required, this was well-known in the art and further described by **Takekawa**. *See* §IX. Dreifus ¶¶59-109. There is a significant public interest against "leaving bad

patents enforceable." *Thryv, Inc v. Click-ToCall Techs., LP*, 590 U.S. 45, 55 (2020). Accordingly, the Board should not exercise its discretion to deny institution. §314(a).

VII. LEVEL OF ORDINARY SKILL IN THE ART

On or before the claimed priority date of 2/22/2005, a person of ordinary skill in the art ("POSITA") would have had at least a Bachelor's degree in electrical engineering, computer engineering, computer science, or the equivalent thereof, and approximately two years of professional experience in the field of electronic devices used for transactions. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education. Dreifus ¶¶49-52.

VIII. CLAIM CONSTRUCTION

Claim terms subject to IPR are to be construed according to the *Phillips* standard applied in district court. §42.100(b). Petitioners apply the plain and ordinary meanings of terms. Dreifus ¶¶53-54. Only terms necessary to resolve the controversy must be construed.

IX. GROUNDS OF UNPATENTABILITY

This Petition is supported by the Declaration of Henry Dreifus, which describes the prior art's scope and content at the time of the '156. Dreifus ¶¶1-119.

Although the '219 purports to have invented the concept of using an electronic

transaction card containing smartcard circuitry within a mobile phone to perform transactions, such a system was already known. Dreifus ¶55. For example, **Fox** describes a "cellular telephone 10" that includes a "smartcard function" including an "RF interface" providing a "contactless interface between the smartcard logic function circuitry in telephone 10 and an external reader/system." Fox, Abstract, 2:10-29. As demonstrated below, the prior art renders the Claims unpatentable. Dreifus ¶¶59-113.

A. Ground 1: Fox (Claims 1-6)

1. Overview of Fox

Fox discloses "cellular telephone 10," which includes a "single semiconductor integrated circuit 45" for incorporating a "smartcard function therein." Fox, Abstract, 2:60-61, 3:23-26, 4:43-56. The semiconductor integrated circuit includes smartcard circuitry to communicate with a "point-of sale (POS) system" to perform transactions. Fox, 5:1-12; Dreifus ¶61.

As shown in Figure 2, the "single semiconductor integrated circuit 45" includes "**smartcard RF interface 40**," "**smartcard logic function circuitry 42**," and "**antenna 26**," which are accessible by the mobile phone via "signal line 57." Fox, Fig. 2, Fig. 3, Fig. 5, 2:53-59, 3:23-26, 4:43-56. The "**antenna 26**" allows for the "transmission and reception of RF data." Fox, 2:53-59. The apparatus further comprises memory ("**RAM 43**," "**ROM 45**," and "**EEPROM 47**") which is

accessible to the phone via "signal line 57." Fox, Fig. 2, Fig. 3, 3:35-48. The smartcard circuitry receives power from the "**battery and power conditioner 54**" within the mobile phone. Fox, Fig. 2, 3:66-4:8, 5:1-25. The "smartcard RF interface" can communicate with a reader such as a **point-of-sale** system to perform transactions. Fox, 1:66, 3:37, 5:1-25; Dreifus ¶62.

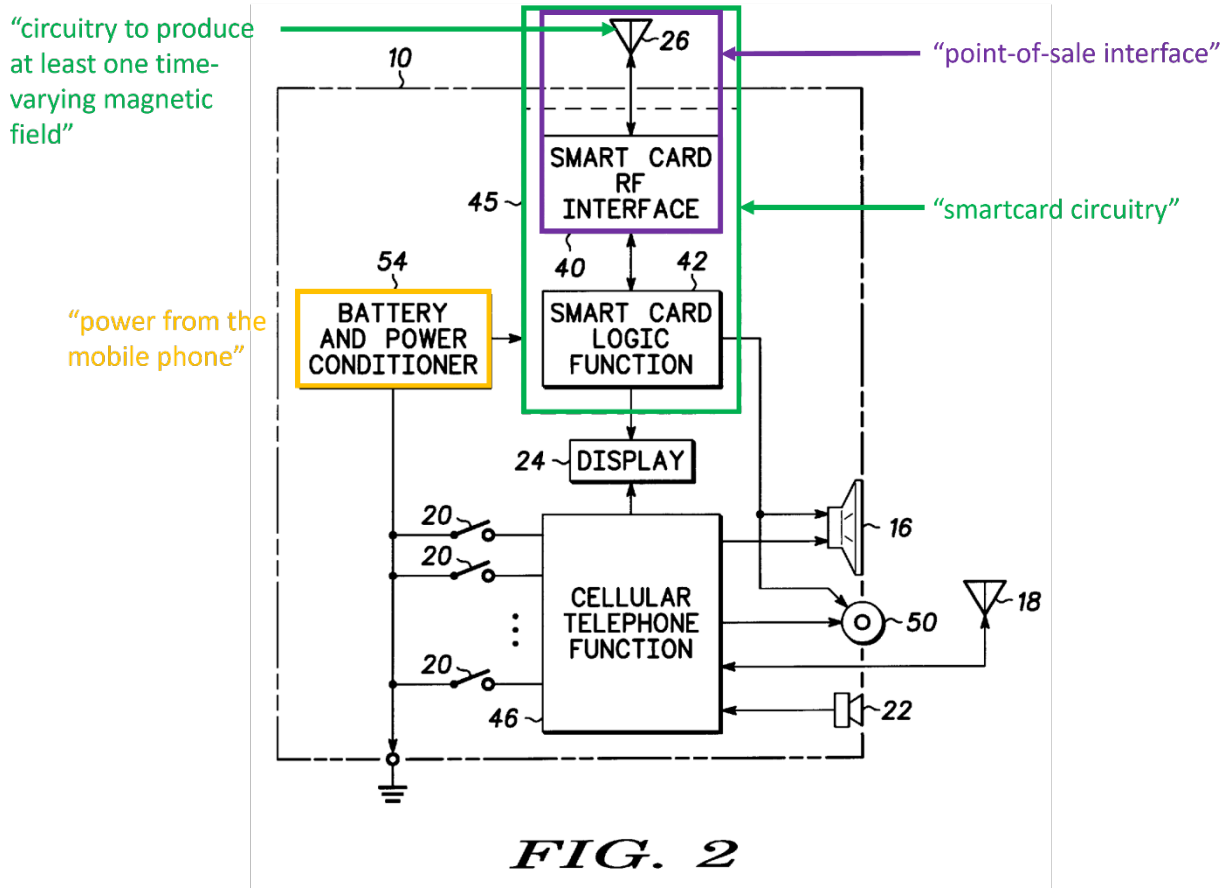


FIG. 2

2. Claim Chart

'219 Claims	Fox
[1.pre] An apparatus with a compatible	**To the extent that the preamble is limiting, Fox discloses an apparatus** (*e.g.*, "single semiconductor integrated circuit 45"; "smartcard function (45)") **with a**

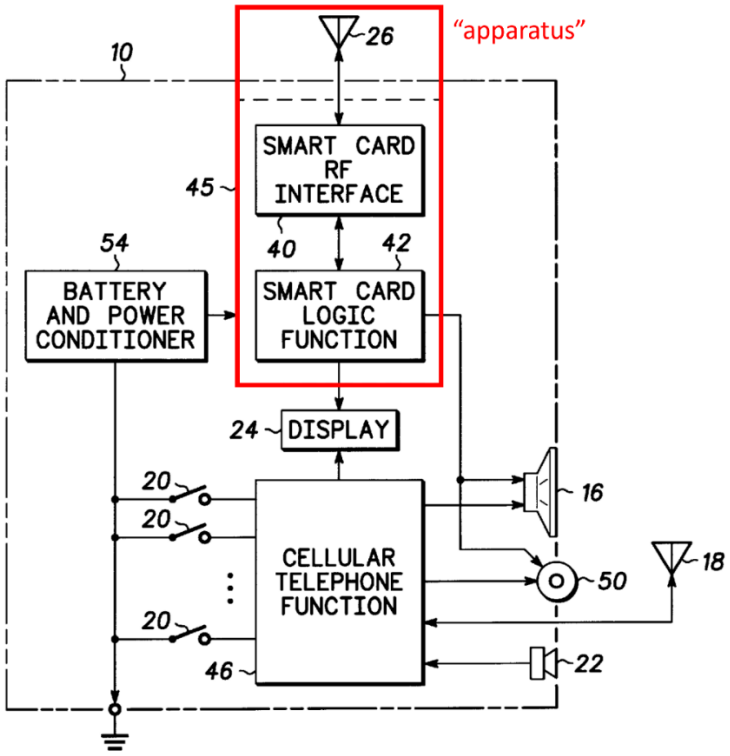
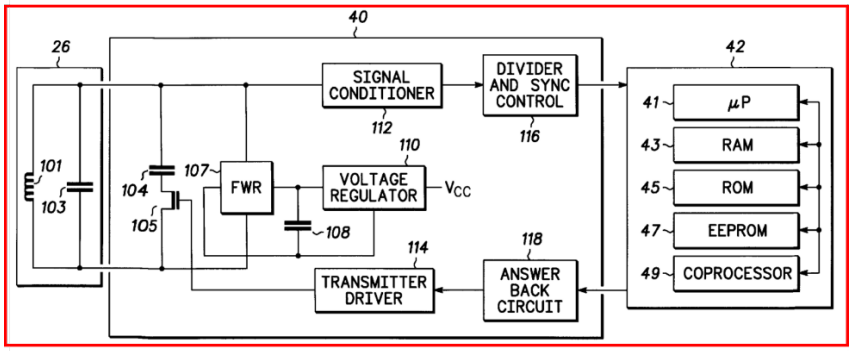
'219 Claims	**Fox**
interface in a mobile phone,	**compatible interface** (*e.g.*, "signal line 57") **in a mobile phone** (*e.g.*, "cellular telephone 10"). ***E.g.*, Fox** **Fox** discloses that cellular telephone 10 "incorporates the electronics" for implementing "a smartcard function (45)." Abstract. For example, **Fox** discloses that "smartcard 45 includes "antenna 26, smartcard RF interface 40 and smartcard circuitry 42." (shown in Figure 3). 3:35-45. Fox also discloses that "[s]ignal line 57…couples main control 44 of cellular telephone circuitry 46 to smartcard circuitry 42," which provides an interface "means for MPU [(microprocessor unit)] 41 to communicate with main control (MPU) 44 for performing both cellular telephone and smartcard functions." 4:43-56, Figs. 2, 3, 5. Dreifus ¶¶64-66.[2] To the extent that it is argued that it is required that the apparatus be removable, it would have been obvious to a POSITA to make **Fox's** smartcard functionality removable to advantageously allow a user who purchases a new mobile device to use the functionality and information stored on the smartcard with the new mobile device.[3] Dreifus ¶67.

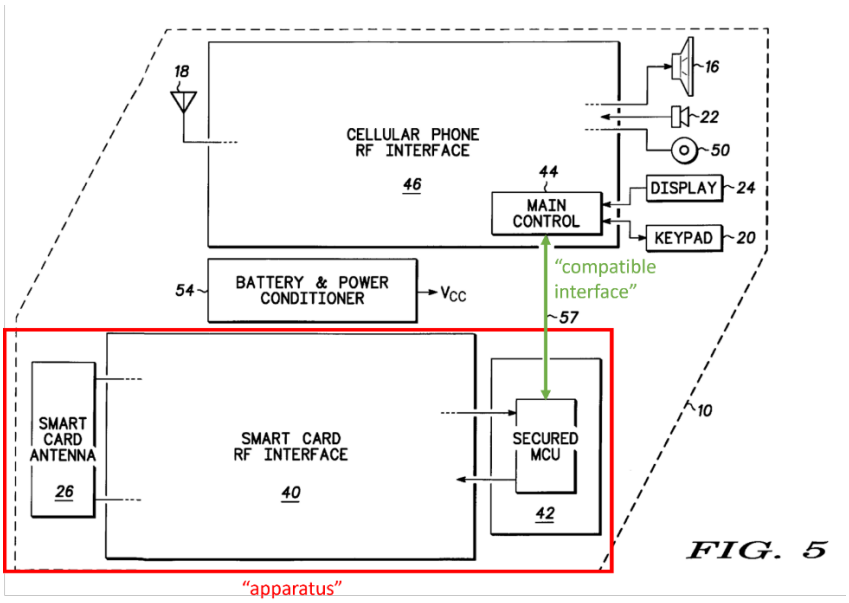
[2] **Fox's** disclosure of a cellular telephone that self-contains an apparatus is consistent with iCashe's infringement contentions, which map "an apparatus" to a non-removable "NFC chip, i.e., an NXP SN110U V3 NFC and Secure Element chip ("SN110U") and its associated antenna." Ex.1014, Appx.E, 3-4. Dreifus ¶66.

[3] For example, U.S. Patent App. Pub. 2007/0026893 discloses that, when an IC card is "detachably connected with the mobile telephone terminal," "user information

'219 Claims	**Fox**
	• **Fig. 2:**

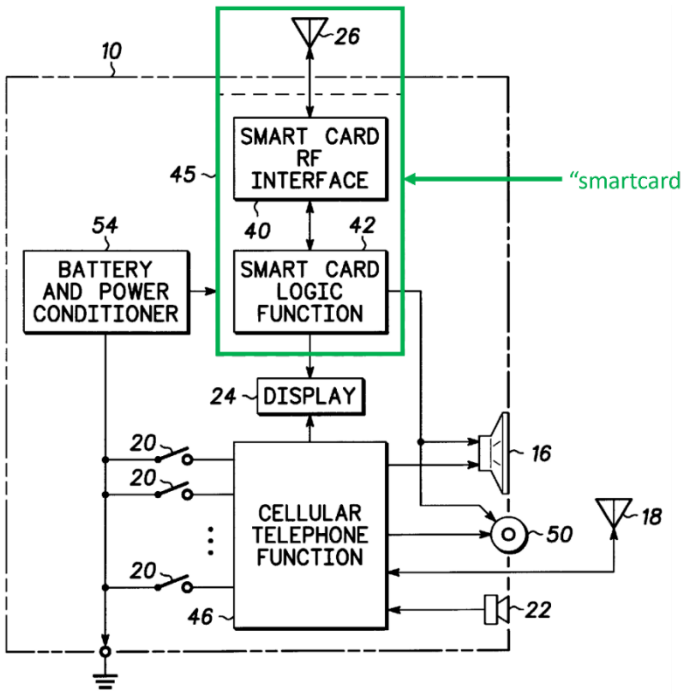
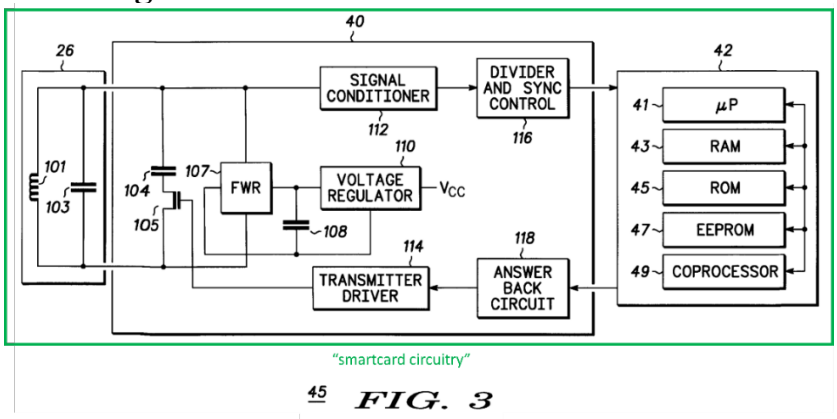
regarding the NFC function and user information stored in a mobile phone can be easily transferred and replaced." Ex.1033, [0014]. A POSITA would have understood that "IC card" is interchangeable with "smartcard" and at minimum would have found it obvious that an IC card could execute the smartcard functionality disclosed in **Fox** given its overlapping functionality. *See, e.g.*, Ex.1024 (U.S. Patent App. Pub. 2004/0146066), [0001] ("The invention relates to a new type of electronic IC (integrated circuit) card (also known as a smart card or chip card)…"); Ex.1025 (U.S. Patent App. Pub. 2003/0168515), [0003] ("The present invention relates generally to electronic devices, and more particularly to an electronic integrated circuit card, i.e., smart card…"); Ex.1026 (U.S. Patent App. Pub. 2006/0056216), [0001] ("The invention relates to Intelligent portable objects commonly known as smart cards or Integrated circuit (IC) cards."); Ex. 1019, 83 ("[T]he IC card, later dubbed the "smart card""). Dreifus ¶67.

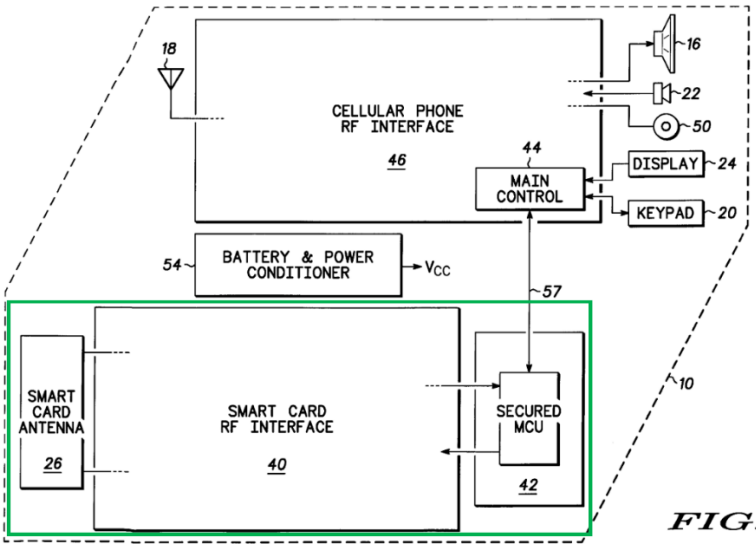
’219 Claims	Fox
	 FIG. 2 • **Fig. 3:**  45 FIG. 3 • **Fig. 5:**

’219 Claims	Fox
	 FIG. 5 • **Abstract:** ***A cellular telephone (10) incorporates the electronics for implementing*** both a cellular telephone function (46) and a ***smartcard function (45)***. This allows the electronics to be protected from damage ***by the housing associated with the cellular telephone*** and also decreases the likelihood that the smartcard will be lost or stolen. The cellular telephone 10 also includes an RF interface (40) for wireless communication between the smartcard and an external reader. Further, by making use of the cellular telephone function, information associated with the smartcard function may be updated or modified via existing cellular telephone infrastructure. • **3:23-26:** RF interface 40, smartcard circuitry 42 and cellular telephone circuitry 46 may be fabricated on ***a single semiconductor integrated circuit 45*** for achieving greater reliability and reducing overall cost. • **3:25-46:** ***Referring now to FIG. 3, a more detailed block diagram is shown illustrating the electronic circuitry of antenna 26, smartcard RF***

'219 Claims	**Fox**
	interface 40 and smartcard circuitry 42. Smartcard circuitry 42 includes microprocessor unit (MPU) 41, random access memory (RAM) 43, read-only memory (ROM)45 and ***electrically erasable read-only memory (EEPROM) 47***, and coprocessor 200 for accomplishing various smartcard functions wherein MPU 41 executes instruction stored on ROM 45 and temporarily stores data on RAM 43 and ***wherein EEPROM 47 is a non-volatile memory which may be used for storing data identifying the uniqueness of smartcard 45***. • **4:43-56:** Referring to FIG. 5, a detailed block diagram illustrating the electronic circuitry of cellular telephone circuitry 46 of FIG. 4 and smartcard circuitry 42 of FIG. 3 combined to form a cellular telephone for implementing both cellular telephone and smartcard functions. It is understood that components shown in FIG. 5 that are identical to components shown in FIGS. 3 and 4 are identified by the same reference numbers. ***Signal line 57, which couples main control 44 of cellular telephone circuitry 46 to smartcard circuitry 42, provides a means for MPU 41 to communicate with main control (MPU) 44 for performing both cellular telephone and smartcard functions. Alternately, the functions of main control 44 and MPU 41 of smartcard logic function 42 may be combined into one single MPU.***
[1.a] the apparatus including smartcard circuitry accessible by the mobile phone,	**Fox discloses the apparatus** (*e.g.*, "single semiconductor integrated circuit 45"; "smartcard function (45)") **including smartcard circuitry** (*e.g.*, "smartcard RF interface" 40, "smartcard logic function circuitry 42," and "antenna 26") **accessible by the**

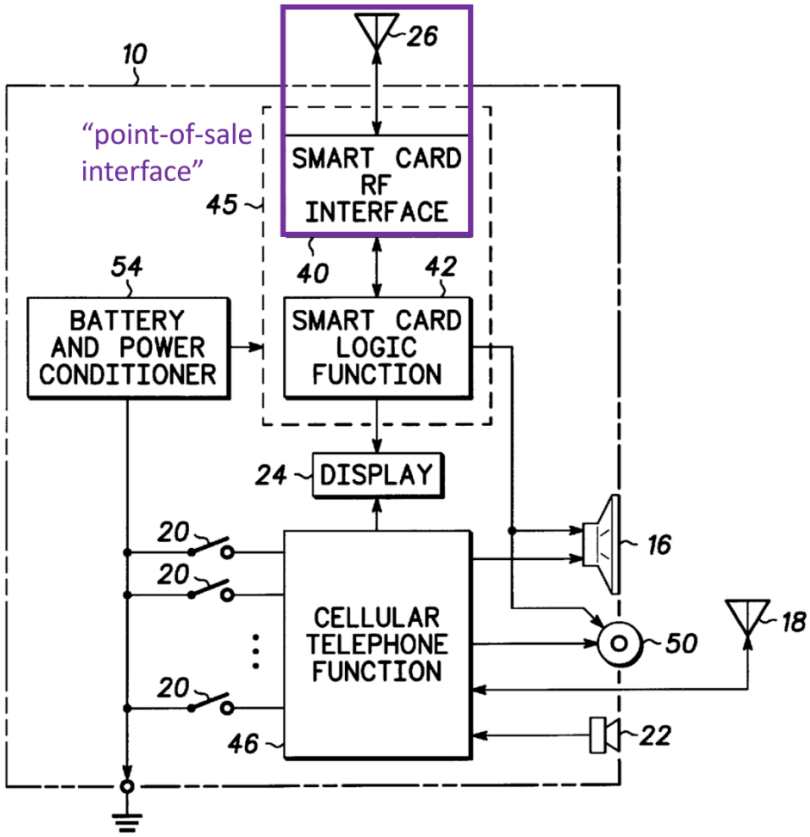
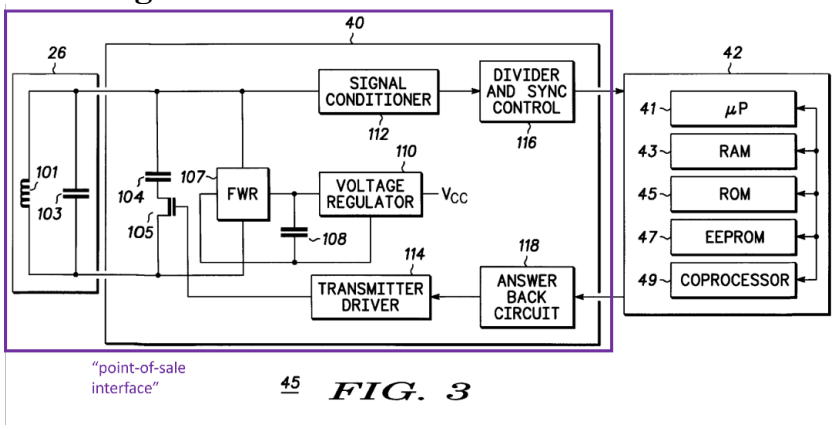
'219 Claims	**Fox**
	mobile phone (*e.g.*, accessible by "cellular telephone 10" via "signal line 57"). ***E.g.*, Fox** ***See* [1.pre]. Fox** further discloses that "single semiconductor integrated circuit 45" (also referred to as "smartcard 45") includes "smartcard RF interface 40," "smartcard logic function 42," and "antenna 26," which comprise circuitry for performing smartcard functionality. 3:23-26, 3:46, Figs. 2-3. As illustrated in Figure 5, "[s]ignal line 57, which couples main control 44 of cellular telephone circuitry 46 to smartcard circuitry 42, provides a means for MPU 41 to communicate with main control (MPU) 44 for performing both cellular telephone and smartcard functions." 4:43-56, Fig. 5. Moreover, main control 44 is coupled to smartcard circuitry 42 by signal line 57 to perform smartcard functions. 4:43-56. For example, smartcard logic function 42 may provide a signal to display 24 via main control 44 to display information, such as a "current balance." 4:57-67. Dreifus ¶¶68-71. • **Fig. 2:**

’219 Claims	Fox
	 FIG. 2 • **Fig. 3:**  FIG. 3 • **Fig. 5:**

’219 Claims	Fox
	 FIG. 5 “smartcard circuitry” • **Abstract:** ***A cellular telephone (10) incorporates the electronics for implementing both a*** cellular telephone function (46) and a ***smartcard function (45)***. This allows the electronics to be protected from damage by the housing associated with the cellular telephone and also decreases the likelihood that the smartcard will be lost or stolen. The cellular telephone 10 also includes an RF interface (40) for wireless communication between the smartcard and an external reader. Further, by making use of the cellular telephone function, information associated with the smartcard function may be updated or modified via existing cellular telephone infrastructure. • **2:53-59:** ***Cellular telephone 10 of FIG. 2 includes smartcard radio-frequency (RF) interface 40 coupled to antenna 26 for transmission and reception of RF data.*** The transmission/reception of RF data is utilized for performing and executing various smartcard functions while not suffering from the problems described earlier with respect to smartcard contact interfaces.

'219 Claims	**Fox**
	• **3:23-26:** "***RF interface 40, smartcard circuitry 42 and cellular telephone circuitry 46 may be fabricated on a single semiconductor integrated circuit 45*** for achieving greater reliability and reducing overall cost." • **4:43-56:** Referring to FIG. 5, a detailed block diagram illustrating the electronic circuitry of cellular telephone circuitry 46 of FIG. 4 and smartcard circuitry 42 of FIG. 3 combined to form a cellular telephone for implementing both cellular telephone and smartcard functions. It is understood that components shown in FIG. 5 that are identical to components shown in FIGS. 3 and 4 are identified by the same reference numbers. ***Signal line 57, which couples main control 44 of cellular telephone circuitry 46 to smartcard circuitry 42, provides a means for MPU 41 to communicate with main control (MPU) 44 for performing both cellular telephone and smartcard functions. Alternately, the functions of main control 44 and MPU 41 of smartcard logic function 42 may be combined into one single MPU.*** • **4:56-67:** Main control 44 of cellular telephone function 46 and smartcard logic function 42 provide appropriate signals to display 24 and speaker 16 for accomplishing cellular telephone and smartcard functions, respectively. For example, main control 44 may provide the currently-dialed telephone number on display 24 and may provide a signal to speaker 16 to generate a ringing sound upon receiving an incoming call. Moreover, ***smartcard logic function 42 may provide information associated with the smartcard functions, such as current balance, for display on display 24***, and may

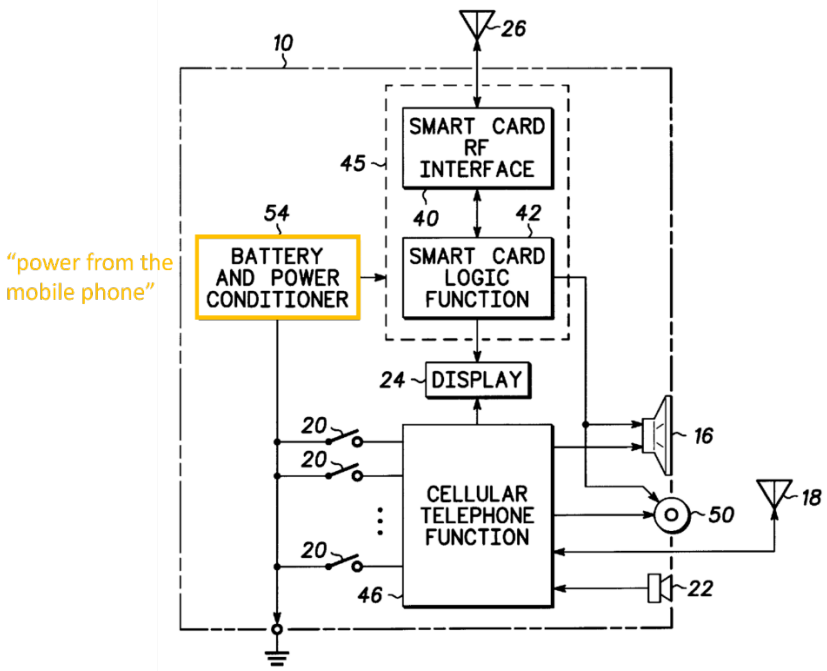
'219 Claims	**Fox**
	provide audible tone or mechanical vibrations during the smartcard transaction.
[1.b] the smartcard circuitry including a point-of-sale interface to communicate with a point-of-sale terminal,	**Fox discloses the smartcard circuitry** (*e.g.*, "smart card RF interface" 40, "smartcard logic function circuitry 42," and "antenna 26") **including a point-of-sale interface** (*e.g.*, "smartcard RF interface 40" and "antenna 26") **to communicate with a point-of-sale terminal** (*e.g.*, "point-of-sale (POS) system"). ***E.g.*, Fox** ***See* [1.a]. Fox** further discloses that the smartcard function fabricated on the "single semiconductor integrated circuit 45 includes a "smartcard RF interface 40," and "antenna 26." 3:23-48, 2:60-63, Figs. 2-3. Smartcard (RF) interface 40 coupled to antenna 26 are used "for transmission and reception of RF data" for "performing and executing various smartcard functions." 2:53-59. Dreifus ¶¶72-75. **Fox** also discloses smart card RF interface 40 and antenna 26 interact with a point-of-sale terminal. For example, **Fox** discloses that, during operation, "the smartcard function within cellular telephone 10 is interrogated…by a smartcard infrastructure using an RF field that is received by the integral smartcard antenna 26." 5:1-5. The "smartcard infrastructure" is, e.g., "an RF card reader associated with…a point-of-sale (POS) system associated with a merchant for performing a sales transaction." 5:8-12. When the user wants to interact with the reader, the user "cause[s] cellular telephone 10 to come into the RF power range associated with RF interface 40 so that communication between the reader and cellular telephone 10 may be facilitated." 5:13-25. "From there, a specific transaction within the capability of smartcard logic function 42 may

'219 Claims	Fox
	be executed, for example, a point-of-sale transaction, via a merchant's reader." 5:21-25. Dreifus ¶76. • **Fig. 2:**  FIG. 2 • **Fig. 3:**  FIG. 3

'219 Claims	**Fox**
	• **Abstract:** A cellular telephone (10) incorporates the electronics for implementing both a cellular telephone function (46) and a smartcard function (45). This allows the electronics to be protected from damage by the housing associated with the cellular telephone and also decreases the likelihood that the smartcard will be lost or stolen. ***The cellular telephone 10 also includes an RF interface (40) for wireless communication between the smartcard and an external reader***. Further, by making use of the cellular telephone function, information associated with the smartcard function may be updated or modified via existing cellular telephone infrastructure. • **2:53-59:** ***Cellular telephone 10 of FIG. 2 includes smartcard radio-frequency (RF) interface 40 coupled to antenna 26 for transmission and reception of RF data.*** The transmission/reception of RF data is utilized for performing and executing various smartcard functions while not suffering from the problems described earlier with respect to smartcard contact interfaces. • **2:60-63:** ***Interface 40 is coupled to smartcard logic function circuitry 42*** (or simply smartcard circuitry), whereby smartcard circuitry 42 includes electronics, as shown in more detail in FIG. 3, f***or performing various smartcard functions.*** • **3:35-48:** Referring now to FIG. 3, a more detailed block diagram is shown illustrating the electronic circuitry of ***antenna 26, smartcard RF interface 40*** and smartcard circuitry 42. ***Smartcard circuitry 42 includes*** microprocessor unit (MPU) 41, random access memory (RAM) 43, read-only memory (ROM)45 and ***electrically***

'219 Claims	**Fox**
	erasable read-only memory (EEPROM) 47, and coprocessor 200 for accomplishing various smartcard functions wherein MPU 41 executes instruction stored on ROM 45 and temporarily stores data on RAM 43 and ***wherein EEPROM 47 is a non-volatile memory which may be used for storing data identifying the uniqueness of smartcard 45***. • **5:1-12:** ***Generally, the smartcard function within cellular telephone 10 is interrogated or updated by a smartcard infrastructure using an RF field that is received by the integral smartcard antenna 26*** whereby antenna 26 may be the same or separate from antenna 18 associated with the cellular telephone function. Likewise, data from the smartcard is also transferred to the infrastructure using the same antenna. For example, ***a smartcard infrastructure may be an external system such as an RF card reader associated with a banking institution for performing ATM transactions, or a point-of-sale (POS) system associated with a merchant for performing a sales transaction***. • **5:13-25:** ***When a user desires to initiate a smartcard function with a corresponding RF reader, the user may, for example, cause cellular telephone 10 to come into the RF power range associated with RF interface 40 so that communication between the reader and cellular telephone 10 may be facilitated***. At that point, some initial handshaking may be performed and the reader may then prompt the user to enter a PIN, via selector buttons 20, to ensure that the proper person is in possession of cellular telephone 10. ***From there, a specific transaction within the capability of smartcard logic function 42 may be executed, for example, a point-of-sale***

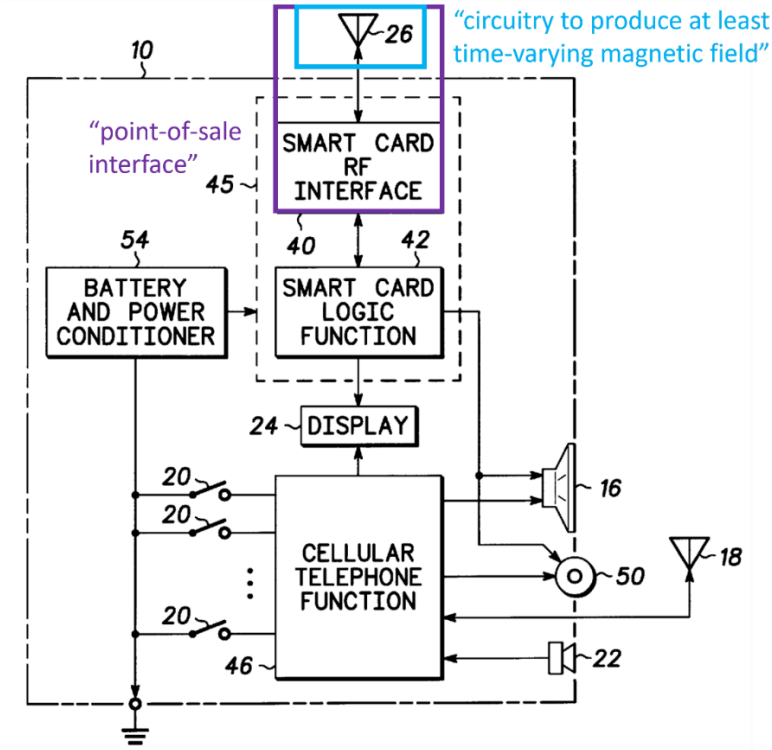
'219 Claims	**Fox**
	transaction, via a merchant's reader, or the transfer of funds, via an automated teller machine (ATM).
[1.c] wherein the point-of-sale interface receives power from the mobile phone.	**Fox discloses the point-of-sale interface** (*e.g.*, "smartcard RF interface 40" and "antenna 26") **receives power from the mobile phone** (*e.g.*, receives power from "battery and power conditioner 54"). ***E.g.*, Fox** ***See* [1.pre], [1.b].** As illustrated in Figure 2, **Fox** further discloses "battery and power conditioner 54" provides power to various components in the phone, including smartcard 45 (including the smart card RF interface 40 and antenna 26) and cellular telephone circuitry 46. Fig. 2. **Fox** further explains battery and power conditioner 54 "comprises a battery 130 and a power control 132," and illustrates that the power is provided by battery 130 via the power control 132. 4:3-8, Fig. 4. Dreifus ¶¶77-80. A POSITA would have understood, or at minimum found it obvious, that **Fox's** smartcard RF interface 40 and antenna 26 receive power from the cellular telephone 10 via the "power control 132" to advantageously power the components. Dreifus ¶81. • **Fig. 2:**

’219 Claims	Fox
	 “power from the mobile phone” FIG. 2 • **4:3-8:** Referring now to FIG. 4, a more detailed block diagram is shown illustrating the electronic circuitry of cellular circuitry 46 and battery and power conditioner 54 of FIG. 2. ***Cellular telephone circuitry 46 is powered via battery and power conditioner 54*** which comprises a battery 130 and a power control 132.
[2] The apparatus of claim 1 wherein the point-of-sale interface comprises circuitry to produce at least one time-varying magnetic field.	***See* [1].** **Fox discloses the apparatus of claim 1 wherein the point-of-sale interface** (*e.g.*, “smartcard RF interface 40 coupled to antenna 26”) **comprises circuitry** (*e.g.*, “answer back circuit 118,” “transmitter driver 114” and “antenna 26”) **to produce at least one time-varying magnetic field** (*e.g.*, “transmission and reception of RF data”). ***E.g.*, Fox** ***See* [1.b].**

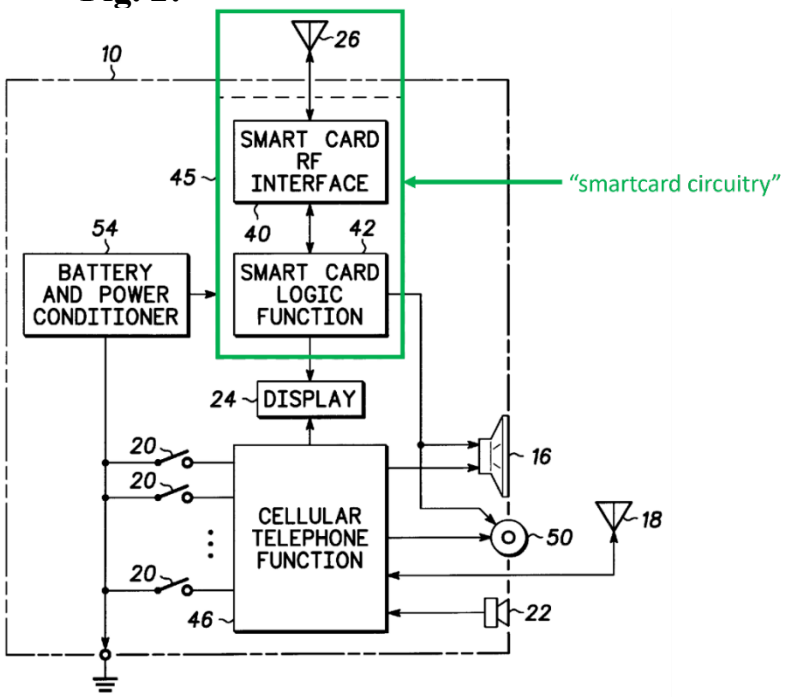
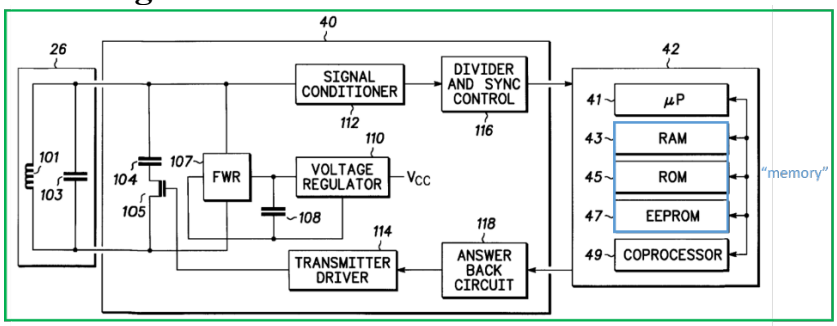
'219 Claims	**Fox**
	As shown in Figure 3, **Fox** discloses that "cellular telephone 10 of FIG. 2 includes smartcard radio-frequency (RF) interface 40 coupled to antenna 26 for transmission and reception of RF data." 2:53-59. The smartcard RF interface 40 includes an answer back circuit 118 that receives a message from smartcard logic function 42, formats and encodes it for RF transmission, and provides the signal to transmitter driver 114 to drive the antenna 26. 3:53-59.[4] Dreifus ¶¶82-85. A POSITA would have understood that **Fox's** disclosure of transmitted RF data creates a time-varying magnetic field.[5] Dreifus ¶¶86. • **Fig. 2:**

[4] This is consistent with iCashe's infringement contentions, which identify the transmission of a 13.56 MHz RF signal as a time-varying magnetic field. Ex.1014, Appx.E, 61 ("The NFC antenna element produces a time-varying magnetic field, i.e., a 13.56 MHz alternating current."). Dreifus ¶85.

[5] A POSITA would have understood that Fox's disclosure of RF data that is transmitted and received creates a time-varying magnetic field. RF transmissions create electromagnetic waves that consist of perpendicular electronic and magnetic fields that are coupled to each other and that vary over time. *See* Ex. 1034, 53, 102; Ex. 1040 at 198;1070-71, Fig. 34.3. Dreifus ¶86.

'219 Claims	Fox
	 *FIG. 2* • **2:53-59:** ***Cellular telephone 10 of FIG. 2 includes smartcard radio-frequency (RF) interface 40 coupled to antenna 26 for transmission and reception of RF data.*** The transmission/reception of RF data is utilized for performing and executing various smartcard functions while not suffering from the problems described earlier with respect to smartcard contact interfaces. • **3:49-59:** Smartcard antenna 26 may take the form, for example, of capacitor 103 and a wire such as inductor 101. These two components form a tuned circuit that is resonant at the desired frequency of information and/or power transmission into the smartcard. ***The resonance is modified by the capacitor 104 and FET switch 105 under control of the logic function 42 via***

'219 Claims	**Fox**
	the answer back circuit 118 and transmitter driver 114, when information is transmitted out of the smartcard. The answer back circuit 118 receives the digital message from 42, formats and encodes it for RF transmission.
[3] The apparatus of claim 2 further comprising memory accessible by the mobile phone.	***See* [1], [2].** **Fox discloses the apparatus further comprising memory** (*e.g.*, "RAM 43," "ROM 45," and "EEPROM 47") **accessible by the mobile phone** (*e.g.*, accessible by "main control 44" of "cellular telephone 10" via "signal line 57"). ***E.g.*, Fox** ***See* [1.pre].** **Fox** further discloses that the "smartcard 45" includes "smartcard circuitry 42" (also referred to as "smartcard logic function 42" in Figure 2). Abstract, 3:23-26, Figs. 2, 3. **Fox** discloses that smartcard logic function 42 includes memory. Figs. 2, 3, 3:35-48. Specifically, as shown in annotated Figure 3 below, smartcard logic function 42 includes random access memory ("RAM 43"), read-only memory ("ROM 45") and electrically erasable read-only memory ("EEPROM 47"). Figs. 2-3, 3:35-48. **Fox** further discloses that "information associated with the smartcard function may be updated or modified via existing cellular telephone infrastructure." 5:48-60. Moreover, **Fox** discloses that "cellular telephone function 46 may access, via cellular telephone infrastructure, a banking institution while main control 44 communicates with MPU 41 for allowing electronic cash to be downloaded onto the smartcard." Fox, 5:39-43. In view of these disclosures, a POSITA would have understood that the memory within smartcard function 45 is accessible by cellular

’219 Claims	Fox
	telephone 10 (either directly or via MPU 41). Dreifus ¶¶87-90. • **Fig. 2:**  FIG. 2 • **Fig. 3:**  FIG. 3 • **Abstract:** ***A cellular telephone (10) incorporates the electronics for implementing both a*** cellular telephone function (46) and ***a smartcard function (45)***. This allows the electronics to be protected from damage by the housing associated with the cellular telephone and also decreases the

'219 Claims	**Fox**
	likelihood that the smartcard will be lost or stolen. The cellular telephone 10 also includes an RF interface (40) for wireless communication between the smartcard and an external reader. Further, by making use of the cellular telephone function, information associated with the smartcard function may be updated or modified via existing cellular telephone infrastructure. • **3:23-26:** RF interface 40, ***smartcard circuitry 42*** and cellular telephone circuitry 46 may be fabricated on ***a single semiconductor integrated circuit 45*** for achieving greater reliability and reducing overall cost. • **3:35-48:** Referring now to FIG. 3, a more detailed block diagram is shown illustrating the electronic circuitry of antenna 26, smartcard RF interface 40 and smartcard circuitry 42. ***Smartcard circuitry 42 includes microprocessor unit (MPU) 41, random access memory (RAM) 43, read-only memory (ROM) 45 and electrically erasable read-only memory (EEPROM) 47***, and coprocessor 200 for accomplishing various smartcard functions wherein MPU 41 executes instruction stored on ROM 45 and temporarily stores data on RAM 43 and wherein EEPROM 47 is a non-volatile memory which may be used for storing data identifying the uniqueness of smartcard 45. And wherein coprocessor 49 executes security algorithms used to verify the identity of the smartcard and the smartcard infrastructure. • **5:39-43:** For example, cellular telephone function 46 may access, via the cellular telephone infrastructure, ***a banking institution while main control 44 communicates with MPU 41 for allowing electronic cash to be downloaded onto the smartcard***.

'219 Claims	**Fox**
	• **5:48-60:** By now it should be apparent that a novel cellular telephone has been provided that incorporates the electronics for implementing both a cellular telephone function and a smartcard function. This allows the smartcard electronic circuitry to be protected from damage by the housing associated with the cellular telephone and also decreases the likelihood that the smartcard will be lost or stolen. The cellular telephone also includes an RF interface for wireless communication between the smartcard and an external reader. Further, by making use of the cellular telephone function, ***information associated with the smartcard function may be updated or modified via existing cellular telephone infrastructure***.
[4] The apparatus of claim 1 wherein the point-of-sale interface includes circuitry compatible with a hybrid smartcard reader.	***See* [1].** **Fox discloses that the point-of-sale interface** (*e.g.*, "smartcard radio frequency (RF) interface 40 coupled to antenna 26") **includes circuitry compatible with a hybrid smartcard reader** (*e.g.*, external "RF card reader" that is compatible with both contact-based and contactless transmissions). ***E.g.*, Fox** As discussed for [1.b], **Fox** discloses that its smartcard RF interface is compatible with an external "RF card reader." *See* [1.b] above. Moreover, as discussed in [1.b], smartcard RF interface 40 coupled to antenna 26 act as an interface for a point of sale terminal in the form of an "RF card reader." Dreifus ¶¶91-93. A POSITA would have understood, or at minimum found it obvious, that **Fox's** "smartcard RF interface 40" and "antenna 26" are compatible with a hybrid smartcard reader because a hybrid smartcard reader is a

'219 Claims	**Fox**
	versatile reader compatible to process transactions using different types of smartcard communications.[6] Dreifus ¶94. • **Abstract:** A cellular telephone (10) incorporates the electronics for implementing both a cellular telephone function (46) and a smartcard function (45). This allows the electronics to be protected from damage by the housing associated with the cellular telephone and also decreases the likelihood that the smartcard will be lost or stolen. ***The cellular telephone 10 also includes an RF interface (40) for wireless communication between the smartcard and an external reader.*** Further, by making use of the cellular telephone function, information associated with the smartcard function may be updated or modified via existing cellular telephone infrastructure. • **1:9-30:** Smartcards are fast becoming the common media to transfer information of many types relative to banking, transportation, subscriber, health, identification, etc. Typically, smartcards are housed within a plastic card,

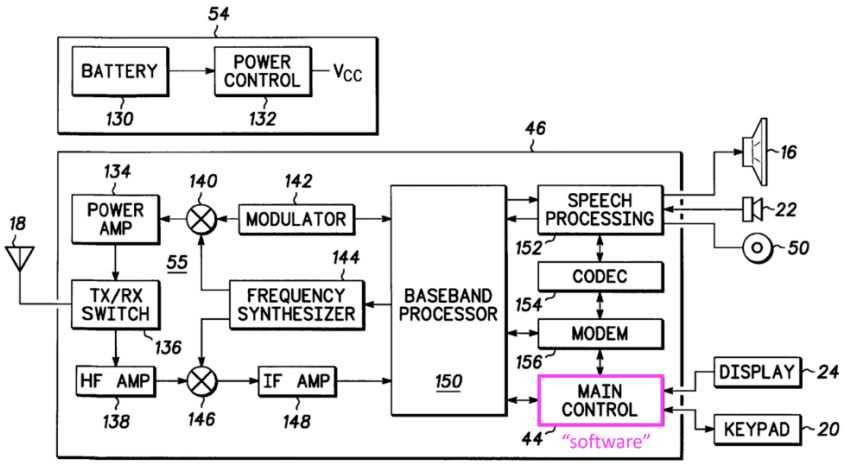
[6] *See, e.g.*, Ex.1021, 2:28-30 ("[T]he reader/writer can be a hybrid reader, i.e. it can read both magnetic cards and smart cards"); Ex.1022, 4:43-44 ("[A] hybrid reader that can read magstripe cards as well as smart cards"); Ex.1023, [0050] ("Hybrid reader 240 includes a magnetic stripe reader 241 in communication with magnetic control and decode circuit 242 and smart card reader/writer 243 in communication with smart card control and decode circuit 244."). Dreifus ¶94.

'219 Claims	**Fox**
	taking the form and size, for example, of a plastic credit card. Such smartcards include a microcomputer having some form of memory for storing and processing data. When a transaction within the capability of the smartcard is to be performed, the smartcard interacts with an external system which may be, for example, an automated teller machine, a merchant's point of sale system, etc. ***In performing such a transaction, typically the smartcard is inserted into a card reader associated with the external system through which electrical contact is made between the card reader and the smartcard. However, such systems requiring the smartcard to come into contact with the external system suffer from the disadvantages that the smartcard must be physically inserted into the external reader***, the contacts between the smartcard and the external reader must be aligned for proper signal transfer, and the contacts may become worn or dirty thereby causing unreliability through signal degradation or signal interruption. • **2:10-29:** "Referring to FIG. 1, a pictorial diagram is shown illustrating the conceptual idea of incorporating a smartcard and its associated functions within cellular telephone 10. Cellular telephone 10 includes cellular telephone circuitry and smartcard circuitry (shown in block form in FIG. 2 and in detailed block form in FIGS. 3 and 4) for performing both a cellular telephone function and a smartcard function. The circuitry for accomplishing the smartcard function includes an RF interface and smartcard logic function circuitry. ***The RF interface provides a contactless interface between the smartcard logic function circuitry in telephone 10 and an***

’219 Claims	Fox
	external reader/system. This integration of a contactless smartcard into a cellular telephone function provides ease of use of the smartcard, enhanced security from theft or loss, the ability to read and access information stored within the smartcard by utilizing the cellular telephone display for displaying available smartcard functions, and the ability to update/change information stored within the smartcard by utilizing the cellular telephone functions to electronically communicate with an external system.” • **2:53-59:** Cellular telephone 10 of FIG. 2 includes smartcard radio-frequency (RF) interface 40 coupled to antenna 26 for ***transmission and reception of RF data***. The transmission/reception of RF data is utilized ***for performing and executing various smartcard functions while not suffering from the problems described earlier with respect to smartcard contact interfaces***. • **5:1-12:** Generally, the smartcard function within cellular telephone 10 is interrogated or updated by a smartcard infrastructure using an RF field that is received by the integral smartcard antenna 26 whereby antenna 26 may be the same or separate from antenna 18 associated with the cellular telephone function. Likewise, data from the smartcard is also transferred to the infrastructure using the same antenna. ***For example, a smartcard infrastructure may be an external system such as an RF card reader associated with a banking institution for performing ATM transactions, or a point-of-sale (POS) system associated with a merchant for performing a sales transaction.*** • **5:13-25:** When a user desires to initiate a smartcard function with a corresponding RF

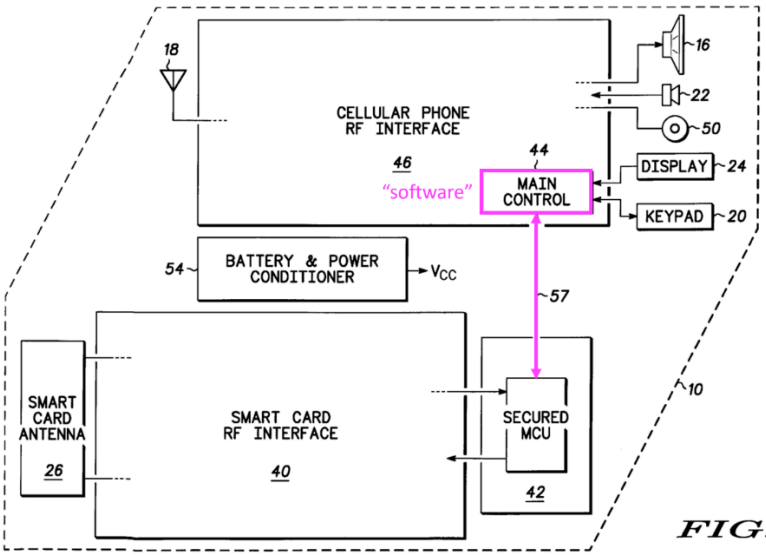
'219 Claims	**Fox**
	reader, the user may, for example, cause cellular telephone 10 to come into the RF power range associated with RF interface 40 so that communication between the reader and cellular telephone 10 may be facilitated. At that point, some initial handshaking may be performed and the reader may then prompt the user to enter a PIN, via selector buttons 20, to ensure that the proper person is in possession of cellular telephone 10. From ***there, a specific transaction within the capability of smartcard logic function 42 may be executed, for example, a point-of-sale transaction, via a merchant's reader, or the transfer of funds, via an automated teller machine (ATM).***
[5] The apparatus of claim 1 further comprising memory accessible by the mobile phone.	***See*** **[1], [3].** Dreifus ¶¶95-96.
[6] The apparatus of claim 1 further including software to be installed on the mobile phone.	***See*** **[1].** **Under PO's interpretation, Fox discloses software** (*e.g.*, "program control") **to be installed on the mobile phone** (*e.g.*, "cellular telephone").[7]

[7] PO's infringement contentions in the Texas Case equate software to be installed on the mobile device and software preloaded on the mobile device—PO identifies a "software to be installed on the mobile phone" as "application software…preloaded…to the [mobile phone]," and points to software that is directly

'219 Claims	Fox
	***E.g.*, Fox** ***See* [1.pre].** As discussed above for [1.pre], **Fox** discloses cellular telephone 10, which further includes "main controller 44," comprising "an MPU for executing and performing under program control various cellular telephone functions." Abstract, 4:27-29, Fig. 4. A POSITA would have understood that the program control of cellular telephone 10 is software.[8] Dreifus ¶¶97-100. • **Fig. 4:**  FIG. 4 • **Fig. 5:**

installed on the device, and not obtained from the alleged "apparatus." *See* Ex.1014, Appx.E, 76-77. Dreifus ¶98.

[8] *See also* Ex.1016, 365 (defining "Software"). Dreifus ¶100.

’219 Claims	Fox
	 FIG. 5 • **Abstract:** A ***cellular telephone (10) incorporates the electronics*** for implementing both a cellular telephone function (46) and a ***smartcard function (45)***. • **4:27-29:** Main controller 44 comprises an ***MPU for executing and performing under program control various cellular telephone functions***. • **4:49-53:** Signal line 57, which couples main control 44 of cellular telephone circuitry 46 to smartcard circuitry 42, ***provides a means for MPU 41 to communicate with main control (MPU) 44 for performing both cellular telephone and smartcard functions. Alternately, the functions of main control 44 and MPU 41 of smartcard logic functions 42 may be combined into one single MPU***.

B. Ground 2: Fox in view of Takekawa (Claims 1-6)

To the extent further disclosure is required for “an apparatus” (all claims; under PO’s interpretation (*see* §IX.A.2, [1.pre])) and for “an apparatus including

software to be installed on the mobile phone" (claim 6), **Takekawa discloses an apparatus** (*e.g.*, "IC card") **including software to be installed on a mobile phone** (*e.g.*, "application…installed to the information processing terminal," such as "a portable telephone"). [0080], [0081]. Dreifus ¶101.

Takekawa discloses a processing device, such as an integrated circuit ("IC") card, that is inserted into a phone, and has software that is installed on the phone. Takekawa, [0080]-[0081], [0083], Fig. 1. A POSITA would have understood that "IC card" is interchangeable with "smartcard" and at minimum would have found it obvious to use a smartcard given its similar functionality to the extent it is argued that there is a difference between the two.[9] This software is used by the phone to initiate communication with the IC Card. Takekawa, [0084]. Dreifus ¶102.

[9] *See, e.g.*, Ex.1024, [0001] ("The invention relates to a new type of electronic IC (integrated circuit) card (also known as a smart card or chip card)…"); Ex.1025, [0001] ("The present invention relates generally to electronic devices, and more particularly to an electronic integrated circuit card, i.e., smart card…"); Ex.1026, [0001] ("The invention relates to Intelligent portable objects commonly known as smart cards or Integrated circuit (IC) cards."); Ex.1019, 83 ("[T]he IC card, later dubbed the "smart card"") (published in Vol. 45 of the "Communications of the ACM" journal in July 2002, 1). Dreifus ¶102.

Fox and **Takekawa** are analogous art, in the same field as the '219, which includes electronic devices for performing transactions, and are reasonably pertinent to purported problems addressed by the named inventors of the '219 involving the use of electronic devices to securely perform transactions. '219, 1:6-24, 4:61-5:8, 5:26-34, 6:3-21; Fox, 1:5-8, 2:10-29, 3:49-59, 4:43-56, Fig. 3; Takekawa, [0002], [0004], [0107]-[0110], Fig. 9. Dreifus ¶103.

A POSITA would have been motivated to apply **Takekawa's** teaching of using a removable smartcard to **Fox's** smartcard device to advantageously allow a user to switch the smartcard device between devices. Dreifus ¶104. For example, a POSITA would have understood that when a user purchases a new phone, the user may desire to switch their smartcard device from their old phone to a new phone so that the user can continue to access the information that is on their smartcard. Ex.1033, [0014], [0020] (disclosing that an "IC card may be…detachably connected with the mobile telephone terminal" such that, "even when a new mobile phone equipped with the NFC function is purchased, user information regarding the NFC function and user information stored in a mobile phone can be easily transferred and replaced"). Dreifus, ¶104.

A POSITA would have found that using a removable smartcard in **Fox's** phone to be straightforward. Dreifus ¶105. **Fox** teaches that its smartcard 45 communicates with the main processor of the phone through a signal line. Fox, 4:49-

53. A POSITA would have been aware of detachable signal line connections, for example, in a SIM card slot typically found in phones, which was a well known mechanism for connecting smartcards to phones. Ex.1033, [0014] (discloses that IC card is "integrated with a SIM card detachably connected with the mobile telephone terminal"). Dreifus ¶105.

Moreover, a POSITA would have been motivated to apply **Takekawa's** teaching of installing software on a phone with a removeable smartcard to **Fox's** mobile phone. Dreifus ¶106. For example, **Takekawa** discloses that software installed on the phone is used to allow communication between the phone's processor and the smartcard processor. Takekawa, [0084] (discloses that "terminal application program 31 which is loaded to the information processing terminal 30 is initiated so as to commence a communication with the card application program 11" on the IC card). Dreifus ¶106. A POSITA would have been further motivated to apply **Takekawa's** teaching of installing software on a phone with a removeable smartcard to **Fox's** mobile phone because software installation on a phone via smartcard insertion promotes the smartcard's ease of use, bolsters security, and facilitates accessibility for the user in contactless transactions. Takekawa, [0016], [0018], [0083], [0196]; Fox, 1:9-14, 2:21-29; Dreifus ¶106. For example, **Takekawa's** smartcard, when inserted into the phone, causes the phone "to execute a process operation and to realize secure processing functions of various services."

[0083]. This allows software to be installed on the phone "in an easy manner, while the user need not perform the operation for acquiring the application program from the external source." [0196]. Dreifus ¶106.

A POSITA would have been further motivated to apply **Takekawa's** teachings of installing software on a phone with a removeable smartcard to advantageously simplify the process of installing the software on the phone. Dreifus ¶107. For example, a POSITA would have recognized that installing software directly from a removable smartcard onto a phone would have avoided the need to separately obtain the software because it would come from the device as soon as it is inserted into the phone. Takekawa, [0016], [0018]; Dreifus ¶107. In the context of transmitting financial data (*see* Fox, 5:8-12), the smartcard device would advantageously provide the software needed to the phone without "acquiring an application program from an external source." Takekawa, [0016]; Dreifus ¶107. This avoids incorrect or improper installation by the user, a critical issue which leads to limited operability and potential violations of license agreements. Takekawa, [0012], [0015]; Dreifus ¶107. This would also make it easier to provide the smartcard in a form that would be easily added by a user to an existing phone without the need to separately obtain the necessary software to allow the smartcard device to interoperate with the phone. Takekawa, [0016], [0018], [0044]. Dreifus ¶107.

A POSITA would have found that storing software on the smartcard device

for installing the software on a phone to be straightforward. Dreifus ¶108. For example, a POSITA would have recognized that smartcards are configured with sufficient storage capacity for storing application software, and their ability to store, retrieve, and transmit data makes them an optimal conduit to for installing software onto a mobile phone.[10] Dreifus ¶108. Moreover, the process of installing software from an inserted device was well known.[11] Dreifus ¶108.

Accordingly, a POSITA would have had a reasonable expectation of success applying **Takekawa's** teachings to **Fox's** telecommunications device, and would have known such a combination (yielding the claimed limitations) would predictably work and provide the expected functionality. Dreifus ¶109.

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[10] *See* Ex.1027, Abstract (describing smartcards as "secure portable storage devices used for several applications especially security related ones involving access to system's database either online or offline"). Additionally, technical book "Smart Card Application Development using Java"—published by Springer Berlin, Heidelberg on July 1, 2002—describes smartcards having the ability to "stor[e] additional application code" and later "retrieve data from [the] smartcard." Ex.1015, 18, 26. Dreifus ¶108.

[11] *See, e.g.*, Ex.1038, [0087] (disclosing use of "removable storage medium" for providing "software to the computer system"). Dreifus ¶108.

X. SECONDARY CONSIDERATIONS

There is no evidence in the '219's prosecution history or elsewhere supporting any secondary considerations arguments, or evidence of nexus to any challenged Claim. *See generally* '219FH; Dreifus ¶111. Indeed, as demonstrated by the prior art referenced herein, any purported solutions to problems or unexpected results in the '219 were already well known. Dreifus ¶110.

To the extent that PO contends that the accused products in the Texas Case are infringing and thus demonstrate commercial success, any such conclusory allegations would fail to provide any indication that the Claims are non-obvious. Such conclusory assertions would not demonstrate that Samsung's products infringe, let alone show any nexus between any alleged commercial success and the Claims, or that any alleged success is due to an allegedly claimed component instead of the many unclaimed features of the accused products. Dreifus ¶112.

To the extent PO asserts the existence of any secondary considerations in its responses, Petitioners reserve the right to address any such evidence. Dreifus ¶113.

XI. CONCLUSION

Substantial, new, and noncumulative technical teachings have been presented for each Challenged Claim, which are anticipated and/or rendered obvious for the reasons set forth above. Dreifus ¶¶114-119. There is a reasonable likelihood Petitioners will prevail as to each of these Claims. *Inter partes* review of Claims 1-

6 of the ’219 is accordingly requested.

Dated: March 10, 2025

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(a) and (d), the undersigned hereby certify that the Petition For *Inter Partes* Review complies with the type-volume limitation of 37 C.F.R. § 42.24(a)(i) because, exclusive of the exempted portions, it contains 8,837 words as counted by the word processing program used to prepare the paper.

Dated: March 10, 2025

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CERTIFICATE OF SERVICE

I hereby certify that on March 10, 2025, I caused a true and correct copy of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 8,403,219 and supporting exhibits to be served via express mail on the Patent Owner at the following correspondence address of record as listed on Patent Center:

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