

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,

Petitioner,

v.

TELCOM VENTURES LLC,

Patent Owner.

Case No. IPR2025-01408
U.S. Patent 9,832,708

DECLARATION OF CHUCK EASTTOM

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TABLE OF EXHIBITS

Exhibit No.	Description
2001	Interim Processes for PTAB Workload Management, Acting Director Memorandum (March 26, 2025) (https://www.uspto.gov/sites/default/files/documents/InterimProcesses-PTABWorkloadMgmt-20250326.pdf)
2002	Telcom Ventures' Local Patent Rule 3.1 and 3.2 Disclosures, Served November 21, 2024
2003	Telcom Ventures' Subpoena to Google, Served July 18, 2025
2004	Stipulated Protective Order for Non-Party Google, Dated September 11, 2025
2005	Third Amended Docket Control Order
2006	Order Denying Motion to Stay Proceedings, Dated August 27, 2025
2007	Paul Hasting's Notices of Appearance in the Samsung Litigation
2009	Curriculum Vitae of William C. Easttom II (Chuck Easttom)
2010	Chiradeep BasuMallick, "What is NFC (Near Field Communication)? Definition, Working, and Examples" (Sept. 29, 2022), https://www.spiceworks.com/tech/networking/articles/what-is-near-field-communication/
2011	Liu et al., "Near-Field Communications: A Comprehensive Survey," IEEE (June 2025)
2012	"The Creation of the NFC Forum and its Vision" (2011) https://cs.stanford.edu/people/eroberts/courses/cs181/projects/2010-11/NFCChips/nfcforum.html
2013	McHugh & Yarmey, "Near Field Communication: Introduction and Implication," ERIC (2012)
2014	Coskun et al., "The Survey on Near Field Communication," Sensors (June 5, 2015)

I. INTRODUCTION

1. My name is Dr. Chuck Easttom, and I have been retained as a technical expert by counsel for Patent Owner Telcom Ventures LLC (“Telcom Ventures” or “Patent Owner”) to investigate and opine as to the validity of U.S. Patent No. 9,832,708 (“the ’708 Patent”) in view of Petitioner Google LLC’s (“Petitioner” or “Google”) Petition for *Inter Partes* Review (the “Petition”) (Paper 1).

2. This declaration is based on information currently available to me. To the extent that additional information becomes available, I reserve the right to continue my investigation and study, and thus may expand or modify my opinions as my investigation and study continues. I may also supplement my opinions in response to any additional information that becomes available to me, any matters raised by Petitioner and/or opinions rendered by Petitioner’s experts, or in light of any relevant orders from the Board.

3. My opinions are based on my years of education, research and experience, as well as my investigation and study of relevant materials.

4. I am being compensated at the rate of \$550 per hour for my work in this case, including time spent testifying. I am also being reimbursed for reasonable fees and expenses, including hotel and travel expenses, incurred as a result of my work in this case. Neither I nor my company have received any additional compensation for my work in this inter partes review. My compensation is not tied in any way to

the substance of my testimony or the outcome of this Investigation. I have no other financial interest in this inter partes review or to the parties. I am available to offer these opinions at deposition and at a hearing if called upon to do so.

II. QUALIFICATIONS

5. I have summarized in this section my educational background, work experience, and other relevant qualifications. A true and correct copy of my *curriculum vitae* is attached as Ex. 2009 to Patent Owner's Preliminary Response which includes a list of all other cases in which, during the previous four years, I have testified at trial or by deposition.

6. I have over thirty years of experience in the computer science industry including extensive experience with computer security, mobile devices, and related topics. I have authored forty-five computer science books, including books on mobile devices and on cryptography. I also have authored over eighty research papers and am an inventor with twenty-seven computer science patents.

7. I hold a Doctor of Science (D.Sc.) degree in Cyber Security from Capitol Technology University (Dissertation Topic: "A Comparative Study of Lattice Based Algorithms for Post Quantum Computing"). I also hold a Doctor of Philosophy (Ph.D.) in Technology focused on nanotechnology (Dissertation Topic: "The Effects of Complexity on Carbon Nanotube Failures") from Capitol Technology University. I also have a Doctor of Philosophy (Ph.D.) in Computer

Science from the University of Portsmouth (Dissertation Topic: “A Systematic Framework for Network Forensics Using Graph Theory”). I also hold four Master’s degrees—one in Applied Computer Science, one in Education, one in Defense and Strategic Studies, and one in Systems Engineering.

8. I am currently an Adjunct Lecturer for Georgetown University teaching graduate courses in requirements engineering, artificial intelligence, cybersecurity, and cryptography. I am also an adjunct for Vanderbilt University teaching graduate computer science courses in quantum computing, digital forensics, algorithms, and cybersecurity. I also developed a graduate course in digital forensics for the University of Dallas and taught that course from 2019 to 2022.

9. I am a Senior Member and Distinguished Speaker for the Association of Computing Machinery (“ACM”) and a Senior Member and Distinguished Visitor of the Institute for Electrical and Electronics Engineering (“IEEE”). The IEEE is the world’s largest and most preeminent engineering organization. Among other activities, the IEEE creates industry standards for a wide range of engineering disciplines, including software development. I am also a Distinguished Visitor of the IEEE. I have been involved in IEEE standards creation for several years.

10. I have extensive experience with smart cards, Near Field Communications (“NFC”), the ISO/IEC 7810 standard for identification cards, the ISO/IEC 7816 standard for electronic cards for identification, the ISO/IEC 14443

standard for contactless integrated circuit cards, the EMV standard, and related standards and technologies.

11. I have worked with smart cards as an authentication method since the Department of Defense began using the Common Access Card in the early 2000s. Near Field Communications were covered in networking courses that I took as part of my second Master's degree and in some of the networking certifications I hold. I have also worked with NFC since at least 2005. Specific certifications I hold that are relevant to NFC and/or mobile devices include:

- Associate of Systems Engineering (ASEP) from INCOSE (International Council on Systems Engineering) 275062
- CompTIA Network + Certified COMP10163630
- CompTIA Network Infrastructure Professional – CNIP COMP10163630
- EC Council Certified Security Administrator (ECSA) ECC947248
- EC Council Certified Encryption Specialist (ECES)
- CISSP – ISSAP – Certified Information Systems Architecture Professional #387731
- CISSP – ISSEP Information Systems Security Engineering Professional #387731
- Oxygen Phone Forensics Certified
- CompTIA Security+ COMP001021522764
- SC-300 - Microsoft Identity and Access Administrator

12. Specific publications that I have authored or participated in related to NFC, chip design, and/or mobile devices include the following:

- Easttom, C. (2005). Introduction to Computer Security. New York City, New York: Pearson Press.
- Easttom, C. & Dulaney, E. (2015). CompTIA Security+ Study Guide: SY0-401. Hoboken, New Jersey: Sybex Press.
- Easttom, C. & Roberts, R. (2018). Networking Fundamentals, 3rd Edition. Goodheart-Wilcox Publishing.
- Easttom, C. (2020). Modern Cryptography: Applied Mathematics for Encryption and Information Security 2nd Edition. New York City, New York: Springer Press.
- Easttom, C. (2021). An In-Depth Guide to Mobile Device Forensics. CRC Press.
- Easttom, C., Mei, N. (2019). Mitigating Implanted Medical Device Cybersecurity Risks. IEEE 10th Annual Computing and Communication Conference UEMCON.
- Easttom, C., Sanders, W. (2019). On the Efficacy of Using Android Debugging Bridge for Android Device Forensics. IEEE 10th Annual Computing and Communication Conference UEMCON.

13. I am qualified to render the opinions set forth herein. Under my definition of a POSITA or Dr. Chatterjee's definition, set forth below, I am and was as of the priority date of the '708 Patent, at least one of ordinary skill in the art.

III. MATERIALS CONSIDERED

14. I have reviewed the '708 Patent, including the challenged claims, prosecution history, and relevant patent family. The '708 Patent was marked as Exhibit 1001, and its prosecution history was marked as Exhibit 1004.

15. I also reviewed the Petition and each of Exhibits 1001-1017 attached to the Petition.

16. In forming my opinions, I have considered the materials listed above and any other documents cited in this declaration. I have also relied on my own education, knowledge, and experience in the relevant art.

17. I have also considered the understanding of a person of ordinary skill at the time of the invention of the '708 Patent.

IV. SCOPE OF OPINIONS

18. I set forth my opinions throughout this declaration.

19. I understand that Petitioner argues that all of claims 1-19 (the “Challenged Claims”) would have been obvious over one of three Grounds. Pet., 4.

The Grounds are summarized in the below chart:

Ground	Claims	Proposed Ground of Unpatentability
1	1-3, 5-9, 11-13, 15, 17, and 19	Obvious under pre-AIA 35 U.S.C. § 103 over <i>Barnett</i> ¹ in view of <i>Byrne</i> ²
2	16 and 18	Obvious under pre-AIA 35 U.S.C. § 103 over <i>Barnett</i>
3	4, 10, and 14	Obvious under pre-AIA 35 U.S.C. § 103 over <i>Barnett</i> in view of <i>Byrne</i> and <i>White</i> ³

¹ U.S. Patent Application Publication No. 2009/0170483 A1 to Barnett et al. (“*Barnett*”) (Ex. 1005).

² U.S. Patent Publication No. 2008/0207269 to Byrne et al. (“*Byrne*”) (Ex. 1015).

³ U.S. Patent No. 7,434,723 to White et al. (“*White*”) (Ex. 1007).

20. Claims 1, 11, 16, and 18 are the independent claims and are addressed in Grounds 1 and 2. All other claims, including all claims addressed in Ground 3, depend from one of these four claims.

21. I disagree. It is my opinion that the challenged claims of the '708 Patent would not have been obvious in view of the asserted references, alone or in combination, for the reasons discussed herein. While I address certain limitations and combinations to demonstrate that each of the Challenged Claims is not unpatentable, I reserve the right to supplement this declaration to include additional information and opinions related to any and all Challenged Claims and claim elements and the asserted Grounds and prior art references.

V. RELATED DISTRICT COURT CASE

22. Patent Owner filed a complaint against Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. (collectively "Samsung") in the Eastern District of Texas, styled *Telcom Ventures LC v. Samsung Electronics Co., Ltd. et al.*, Case No. 2:24-cv-00691-JRG (filed August 21, 2024) ("Samsung Litigation").

23. I understand Patent Owner initially asserted a total of eight patents against Samsung in that action: U.S. Patent Nos. 9,462,411, 9,832,708, 10,219,199, 10,674,432, 11,770,756, 11,924,743, 11,937,172, and 12,028,793. Further, I have been informed that Patent Owner withdrew its claims regarding certain patents (not

including the '708 Patent), but that all eight patents are still at issue due to declaratory judgment claims asserted by Samsung.

24. I understand that Patent Owner has accused Google features and/or products as infringing products in the Samsung Litigation. Ex. 2002 at 2-3.

25. I understand that and Google is participating in the Samsung Litigation as a subpoenaed third party. Exs. 2003, 2004.

26. I understand that a jury trial for the suit between Patent Owner and Samsung is expected to begin on June 1, 2026. Ex. 2005 at 1.

27. I understand that Petitioner filed IPR petitions against seven patents asserted by Patent Owner. These are:

- IPR2025-01349, regarding U.S. Patent No. 11,924,743
- IPR2025-01389, regarding U.S. Patent No. 11,937,172
- IPR2025-01401, regarding U.S. Patent No. 12,028,793
- IPR2025-01408, regarding U.S. Patent No. 9,832,708 (the Petition)
- IPR2025-01409, regarding U.S. Patent No. 11,770,756
- IPR2025-01419, regarding U.S. Patent No. 10,219,199
- IPR2025-01421, regarding U.S. Patent No. 10,674,432

28. I understand Samsung has filed IPR petitions against the eight patents asserted by Patent Owner in the Samsung Litigation. These are:

- IPR2025-00957, regarding U.S. Patent No. 11,937,172

- IPR2025-00972, regarding U.S. Patent No. 10,219,199
- IPR2025-00973, regarding U.S. Patent No. 9,462,411
- IPR2025-00974, regarding U.S. Patent No. 10,674,432
- IPR2025-00975, regarding U.S. Patent No. 9,832,708
- IPR2025-00976, regarding U.S. Patent No. 11,924,743
- IPR2025-00977, regarding U.S. Patent No. 11,770,756
- IPR2025-00978, regarding U.S. Patent No. 12,028,793

29. I understand that institution was denied in all eight of Samsung's Petitions.

30. I also understand Patent Owner asserted the '708 Patent against Apple Inc. in the Northern District of California, styled *Telcom Ventures LLC v. Apple Inc.*, Case No. 5:25-cv-05041 (filed October 4, 2024).

31. I understand Patent Owner asserted the same eight patents against Apple Inc. in that action.

32. I understand that Apple Inc. has filed IPR petitions against all eight patents asserted by Patent Owner. These are:

- IPR2025-01232, regarding U.S. Patent No. 9,462,411
- IPR2025-01233, regarding U.S. Patent No. 9,832,708
- IPR2025-01234, regarding U.S. Patent No. 10,219,199
- IPR2025-01235, regarding U.S. Patent No. 10,674,432

- IPR2025-01236, regarding U.S. Patent No. 11,770,756
- IPR2025-01237, regarding U.S. Patent No. 11,924,743
- IPR2025-01238, regarding U.S. Patent No. 11,937,172
- IPR2025-01239, regarding U.S. Patent No. 12,028,793

33. As of the signing of this declaration, I have been retained to provide an opinion in all seven IPRs filed by Petitioner against the patents asserted by Patent Owner. I have also been retained to provide an opinion in each of the IPRs filed by Apple Inc. and Google LLC.

VI. LEGAL STANDARDS

34. For purposes of this Declaration, I use the legal principles below as a guide in formulating my opinions. I am not an attorney, and I am not offering any opinions regarding legal matters; however, I have been informed by Telcom Ventures' counsel of the legal principles relevant to the issues herein and have the following understanding.

35. In an *inter partes* review proceeding, I understand that a party seeking to invalidate a claim must prove invalidity by a preponderance of the evidence, which I understand to mean evidence that convinces someone that it is more likely than not that the particular proposition is true. I understand that the preponderance of the evidence standard applies to all aspects of an allegation of anticipation or obviousness, including the prior art status of the relevant reference(s).

A. Claim Construction

36. I understand the first step in determining whether a patent claim is valid is to properly construe the claims. I understand that the words of a claim are generally given their ordinary and customary meaning (sometimes referred to as their plain and ordinary meaning) as understood by a person of ordinary skill in the art at the time of the invention. I also understand that, as a general matter, a claim should not be limited to a preferred embodiment, but that in certain cases, the scope of the right to exclude may be limited by a narrow disclosure or by positions taken, such as by statements made during patent prosecution. I also understand the claims must be supported by the specification. Also, to the extent that a patent claims priority to an earlier filed application, the claims must be supported by the disclosure in that application. For terms that have not been construed, I understand that they should be afforded their plain and ordinary meaning to one of ordinary skill in the art.

37. I understand that the plain and ordinary meaning of a claim term is the meaning that a person of ordinary skill in the art would have understood at the time of the effective date in view of the specification and the prosecution history.

B. Obviousness

38. I understand that a claimed invention is not patentable under 35 U.S.C. § 103 if the differences between the invention 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 the subject matter pertains. Obviousness, as I understand it, is based on the scope and content of the prior art, the differences between the prior art and the claim, the level of ordinary skill in the art, and objective indicia of non-obviousness to the extent they exist.

39. I understand that whether there are any relevant differences between the prior art and the claimed invention is to be analyzed from the perspective of a person of ordinary skill in the art at the time of the invention. A person of ordinary skill in the art is a hypothetical person who is presumed to be aware of all of the relevant art at the time of the invention. The person of ordinary skill is not an automaton, and may be able to fit together the teachings of multiple patents employing ordinary creativity and the common sense that familiar items may have obvious uses in another context or beyond their primary purposes.

40. I understand that if a reference or proposed combination of references does not disclose or suggest all of the elements of a claim, the combination cannot render the claim obvious. I also understand that in order to combine prior art references to show obviousness, a person of ordinary skill in the art, without knowledge of the claimed invention, or without the use of hindsight, must have been motivated to combine the prior art by some suggestion or teaching in the prior art, the knowledge of one of skill in the art, or the nature of the problem to be solved.

41. I understand that an invention would have been obvious if a designer of ordinary skill in the art, facing the wide range of needs created by developments in the field, would have seen an obvious benefit to the solutions tried by the applicant. When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, it may have been obvious to a person of ordinary skill to try the known options. If a technique has been used to improve one device, and a person of ordinary skill in the art would have recognized that it would improve similar devices in the same way, using the technique may have been obvious. I understand, however, that routine experimentation does not necessarily preclude patentability.

42. I understand that obviousness of a patent claim cannot properly be established through hindsight, and that elements from different prior art references, or different embodiments of a single prior art reference, cannot be selected to create the claimed invention using the invention itself as a roadmap. I understand that the claimed invention as a whole must be compared to the prior art as a whole, and courts and the Board must avoid aggregating pieces of prior art through hindsight that would not have been combined absent the inventors' insight.

C. Motivations to Combine

43. I understand that in order to show obviousness based on a single reference or a combination of references, a particular motivation to modify the

reference or combine the teachings in the references, and a reasonable expectation of success must be shown.

44. I understand that the art must evidence a motivation to combine or modify the independently known elements to arrive at the claimed invention and an explanation as to how or why the references would be combined to arrive at the claimed invention to solve the particular problem. I understand that a challenger must show that there was a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does in an obviousness determination. I also understand that it is not enough to prove obviousness merely by a showing that the references were capable of combination without a suggestion of the desirability of the modification.

45. I understand that there is no single way to define the line between true inventiveness on the one hand (which is patentable) and the application of common sense and ordinary skill to solve a problem on the other hand (which is not patentable). For example, market forces or other design incentives may be what produced a change, rather than true inventiveness. I may consider whether the change was merely the predictable result of using prior art elements according to their known functions, or whether it was the result of true inventiveness. I may also consider whether there is some teaching or suggestion in the prior art to make the modification or combination of elements claimed in the patent. I may consider

whether there is some teaching or suggestion in the prior art to make the modification or combination of elements claimed in the patent. I may consider whether the innovation applies a known technique that had been used to improve a similar devices or method in a similar way. I may also consider whether the claimed invention would have been obvious to try, meaning that the claimed innovation was one of a relatively small number of possible approaches to the problem with a reasonable expectation of success by those skilled in the art.

46. I also understand, however, that I must be careful not to determine obviousness using the benefit of hindsight; many true inventions might seem obvious after the fact. I should put myself in the position of a person of ordinary skill in the field at the time the claimed invention was made and I should not consider what is known today or what is learned from the teaching of the patent.

47. Finally, I understand that any obviousness rationale for modifying or combining prior art must include a showing that a person of ordinary skill would have had a reasonable expectation of success. I further understand that whether a proposed modification or combination of the prior art has a reasonable expectation of success is determined at the time the invention was made.

VII. LEVEL OF ORDINARY SKILL IN THE ART

48. I understand that patent claims are to be interpreted from the viewpoint of a person of ordinary skill in the relevant art. To determine the level of skill that

would be “ordinary,” I understand that a person of ordinary skill in the art (“POSITA”) must generally have the capability of understanding the general principles that are applicable to the pertinent art.

49. In my opinion, a POSITA would have had at least a bachelor’s degree in electrical engineering, computer engineering, or a related field, with about two years of experience in wireless communications. More work or practical experience may qualify one not having the requisite education as a person of ordinary skill in the art while a higher level of education could offset less experience. I was at least a person of ordinary skill in the art as of the effective filing dates of the Asserted Patents under this definition.

50. I have reviewed Dr. Chatterjee’s Declaration (Ex. 1002). I understand that Dr. Chatterjee similarly contends that a POSITA would have had “an undergraduate degree in electrical engineering, computer engineering, computer science or a related field along with two years of work experience in the field of mobile communication applications.” Ex. 1002, ¶20. I do not agree with Dr. Chatterjee’s definition of a POSITA, in particular that two years of work experience in the field of mobile communication applications is required because the claims are not directed towards “applications” and it is unclear what Dr. Chatterjee means by “mobile communications applications.” I was at least a person of ordinary skill in the art as of the effective filing dates of the Asserted Patents under Dr. Chatterjee’s

definition. Thus, I met the requirements of a POSITA under either my definition or Dr. Chatterjee's definition as of the priority date of the '708 Patent.

VIII. CLAIM CONSTRUCTION

51. I understand that Petitioner contends the "the Board need not construe any terms of the challenged claims to resolve the underlying controversy." Pet., 9. Other than explaining the plain and ordinary meaning of certain terms, which I do below, I do not offer an opinion on the correct construction of any disputed terms because, in my opinion, the Challenged Claims are not taught or suggested by the prior art. I reserve the right to respond to any future claim construction argument asserted by Petitioner or Dr. Chatterjee.

IX. TECHNOLOGY BACKGROUND

52. Below, I provide a brief overview of the history of contactless smart cards, or proximity cards, and the use of the same technologies in devices.

A. Near Field Communications ("NFC")

53. Near Field Communication ("NFC") is a broad term for short-range wireless communication technology that allows devices to exchange data when they are brought very close together. It is an extension of Radio Frequency Identification ("RFID") technology, designed for secure, quick, and convenient data transfer.

54. NFC-capable devices can communicate with other NFC-capable devices in either active or passive mode. In active mode, both devices generate their own radio frequency field to transmit data. Ex. 2010 at 4. In passive mode, one

device generates the radio frequency field while the other responds without a power source. *Id.*

55. A paper by Liu et al. provides a history of NFC, stretching back to the first understanding of the wave theory of light. Ex. 2011 at 4. That paper includes an overview of NFC history which is shown here:

TABLE I: Timeline of NFC Milestones

1678	.....	•	Huygens presented his “Wave Theory of Light”.
1801	.....	•	Young presented the double-slit diffraction experiment.
1815	.....	•	Fresnel presented a series of memoirs about his understanding of diffraction.
1821	.....	•	Fraunhofer constructed the first diffraction grating.
1887	.....	•	Hertz demonstrated the existence of radio waves.
1891	.....	•	Lord Rayleigh calculated the Rayleigh distance $\frac{A^2}{2\lambda}$.
1947	.....	•	Cutler <i>et al.</i> reformulated the Rayleigh distance as $\frac{2A^2}{\lambda}$.
1956	.....	•	Polk calculated the Fresnel distance.
1983	.....	•	The first patent on RFID-based NFC was granted.
1984	.....	•	Winters formulated the initial theory of MIMO.
1994	.....	•	The first patent on MIMO was granted.
1996	.....	•	Foschini laid down crucial theoretical foundations for MIMO.
1999	.....	•	Driessen and Foschini utilized a spherical wave-based model to characterize LoS MIMO.
2003	.....	•	Jiang <i>et al.</i> proposed to use spherical wave-based models to describe short-range MIMO.
2010	.....	•	Marzetta proposed the concept of massive MIMO.
2015	.....	•	Channel measurement results on massive MIMO necessitated the use of a spherical wave-based channel model.
2016	.....	•	Prather proposed the concept of holographic MIMO.
2017	.....	•	Hu <i>et al.</i> re-showed the potential of large intelligent surfaces in enhancing wireless transmissions.
2018	.....	•	Amiri <i>et al.</i> proposed the concept of ELAA.
2023	.....	•	The first tutorial review of NFC was presented.

56. Despite the long history of the physics and technology supporting NFC, NFC itself is relatively new. For example, the NFC Forum was created in 2004 to ensure maximum compatibility across all implementations of NFC technology. Ex. 2012 at 1. But the NFC Forum was not even founded until many years after the first

standards related to smart cards were published. As late as 2012, *see* Ex. 2013 at 1, and even 2015, some sources still referred to NFC as an “emerging technology.” Ex. 2014 at 1.

X. U.S. PATENT NO. 9,832,708 (“’708 Patent”) (Ex. 1001)

A. Priority Date

57. The ’708 Patent is a continuation of U.S. Patent Application No. 12/264,711, filed on November 4, 2008, which issued as U.S. Patent No. 9,462,411 on October 4, 2016.

58. I understand that Petitioner does not challenge this priority date for purposes of the Petition. Pet., 5. For the purposes of Patent Owner’s Preliminary Response, I have assumed that each of the challenged claims is entitled to at least a priority date of November 4, 2008.

B. ’708 Patent Overview

59. The ’708 Patent describes mobile wireless devices and methods of using a mobile wireless device to engage in one or more communications modes, but only when certain conditions or criteria are met, such as the satisfaction of a proximity condition and a value of a parameter, e.g., a physiological parameter, satisfying a criterion. Ex. 1001, 1:17-22; 6:9-29. The specification recognizes that the devices in the art were rigidly configured to perform a predetermined number of functions. *Id.*, 1:31-39. The ’708 Patent addresses this rigidity problem by providing devices and methods that “may be used to enable adaptively one or more

modes/functions of a device” based upon the satisfaction of certain criteria. *Id.*, 1:43-45. The specification explains that the invention advantageously allows “a mobile wireless device [to] act as a ‘wallet’ (over and above other functions) only when it is time to pay for an item and not act as a wallet when there is no need to do so.” *Id.*, 1:36-39.

C. The ’708 Patent’s Prosecution History

60. I have reviewed the prosecution history of the ’708 Patent.

61. U.S. Patent No. 15/251,882 was filed on August 30, 2016, and issued as U.S. Patent No. 9,832,708 on November 28, 2017.

62. The Examiner issued a non-final rejection of initial proposed claims 1-8 for double patenting in light of claims 1-4 of U.S. Patent No. 9,462,411 and as obvious in light of U.S. Patent Application 2003/0220105 to Daigremont et al., and U.S. Patent Application 2007/0243872 to Gallagher et al. Ex. 1004 at 59-60.

63. In response, Applicant filed a terminal disclaimer over the ’411 Patent. Ex. 1004 at 129, 131. Applicant traversed the Examiner’s obviousness rejection with respect to initial proposed claims 1-3 and 5-7, amended initial proposed claims 4 and 8, and proposed new claims 9-28. Ex. 1004 at 98-107.

64. In its Remarks, Applicant did not concede that “the above-discussed recitations (i)-(iii) of independent Claims 1 and 5 have no novelty” but for expediency focused on the “wherein” recitation of independent Claims 1 and 5 by

which the recitations of “(i) and (iii) are performed concurrently.” Ex. 1002 at 109. Recitations (i)-(iii) were “(i) communicating between a smartphone and an entity using a first air interface responsive to a proximity criterion having been satisfied, (ii) refraining from communicating between the smartphone and the entity using the first air interface absent the proximity criterion having been satisfied, and (iii) communicating using a second air interface to receive a communications service by the smartphone, but not receiving the communications service from the entity via the first air interface.” Ex. 1004 at 108.

65. On October 12, 2017, Applicant and Examiner participated in an interview, during which Applicant authorized the Examiner to cancel proposed claims 19-27 by Examiner’s Amendment to “expedite prosecution of the application in condition for allowance.” Ex. 1004 at 144.

66. The Examiner issued a Notice of Allowance on October 18, 2017 for proposed claims 1-18 and 28. Ex. 1004 at 135, 140.

XI. ASSERTED REFERENCES

A. *Barnett* (Ex. 1005)

67. United States Patent Application No. 2009/0170483 to *Barnett*, et al. is titled “System and Method for Transmitting Information Using a Mobile Phone.”

68. *Barnett* is a fully self-sustained system that is narrowly limited to an efficient means of providing a customer information while they are shopping in a

store. *See Barnett*, ¶[0001] (“The invention relates generally to a system and method of communicating shopping information between a consumer and a retailer. In particular, the invention relates to a system for enabling a consumer to obtain shopping information from a retailer, and the retailer to obtain information from the consumer, using a communication device, such as a mobile phone”). Figure 1 (reproduced below) illustrates this system. *Barnett* explains that, for example, “[t]he information transmitted to the retailer may include a shopping list of goods or services desired by the consumer. In return, the retailer may provide the home computer system 12 and portable communications device will information regarding the desired goods or services.” *Id.*, ¶[0011].

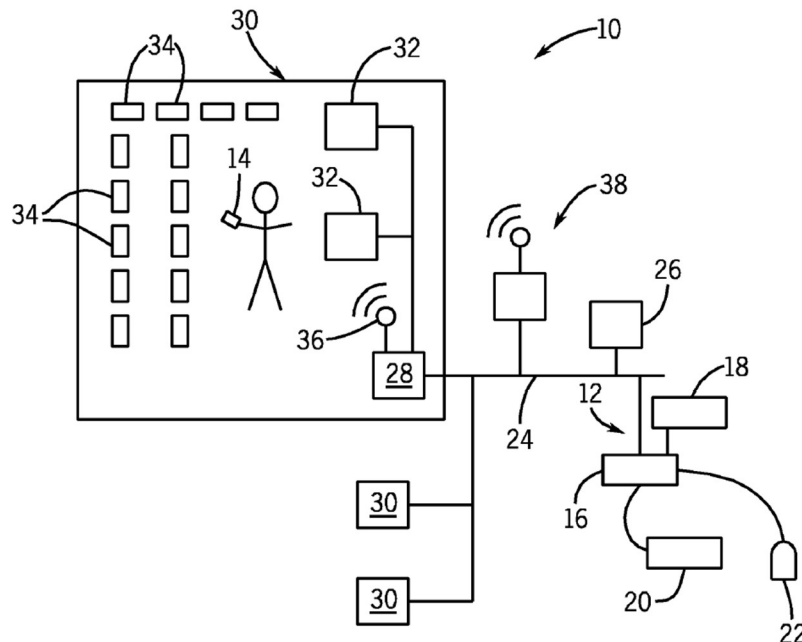


FIG. 1

Barnett, Fig. 1.

69. *Barnett* also discloses how the store's infrastructure is self-sustained, explaining that "[w]ithin the store 30 area series of displays 32 that are connected to the store computing system 28. In this embodiment, the displays 32 are NFC-enabled displays that can interact with a NFC-enabled mobile phone 14 using device-to-device communication" (*Barnett*, ¶[0021]) and that "[s]tand-alone NFC-enabled devices 34 that have been programmed with specific information are located around the store 30. In this embodiment, the stand-alone NFC-enabled devices 34 are used to identify products to NFC-enabled devices." *Barnett*, ¶[0023].

70. *Barnett* discloses an infrastructure for reducing the time the customer spends in the store by streamlining the exchange of communication about the products to the customer. *See Barnett*, ¶¶[0002] ("a consumer may go to a store to purchase an item and find on arriving at the store that the item is not in stock. In addition, even if the item is in stock, considerable time may be wasted looking for the item in the store. Locating a store employee to ask the employee a question about a product can also be very time-consuming. There are many other examples of problems that a consumer can experience when shopping that lead to considerable amounts of time being wasted."); [0042] ("Generally the time that the consumer spends in a store may be used more efficiently. For example, the consumer knows immediately whether or not an item is in stock at a nearby store. In addition, there is less need to find a person at the store to obtain additional information.").

B. *Byrne* (Ex. 1015)

71. United States Patent Publication No. 2008/0207269 to *Byrne* et al. is titled “Basestation [sic] for Cellular Communications System.”

72. *Byrne* is directed to “[a] basestation for use in a cellular telecommunications system, and in particular to a basestation for use as a femtocell basestation.” *Byrne*, ¶[0011]. *Byrne* discloses that a “microcell basestation[] provide[s] coverage to the whole of the intended service area including the location of the femtocell basestation 18 and the location of the mobile phone 22 while it is in the coverage area of the femtocell basestation 18. However, the network is configured such that, when a mobile device that is allowed to be registered with the femtocell basestation 18 is within the coverage area of the femtocell basestation 18, then it will preferentially establish a connection with the femtocell basestation 18 rather than with the microlayer basestation 16.” *Byrne*, ¶[0022].

C. *White* (Ex. 1007)

73. United States Patent No. 7,434,723 to *White*, et al. is titled “Mobile Payment Authorization System and Method.”

74. *White* “is directed to a payment approval system, and more particularly, but not by way of limitation, to a system and method for mobile payment approval.” *White*, 1:20-25. Specifically, *White* provides embodiments for systems and methods for “completing a pending purchase” and “payment approval.” *White*, 1:38-2:8.

75. Figure 1 (reproduced below) provides an exemplary architecture for an embodiment of *White*'s system.

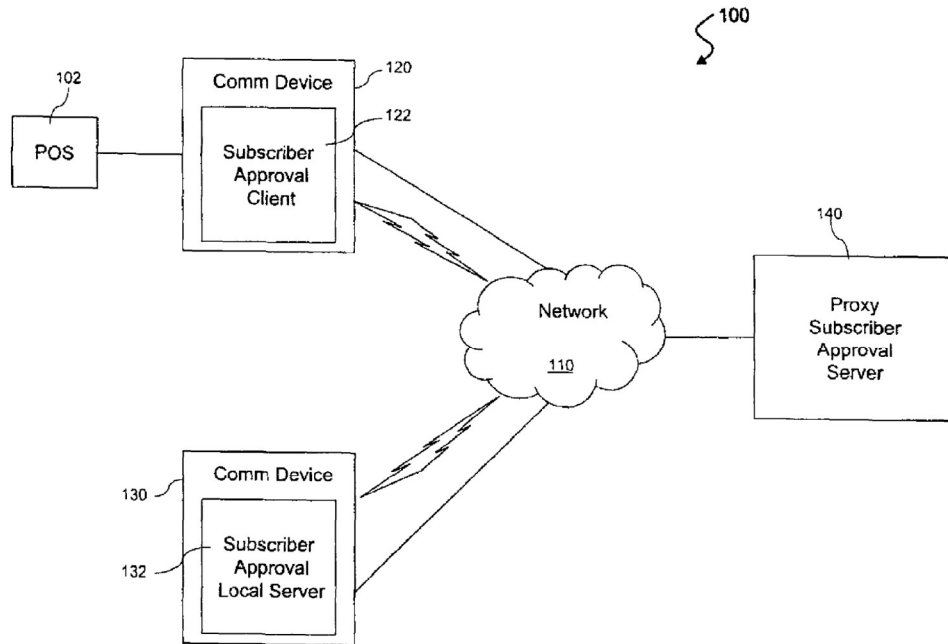


Figure 1

White, Fig. 1.

76. Regarding communicating with the second communication device 130 in Fig. 1, *White* explains that “[t]he first communication device 120 communicates with the second communication device 130 through the network 110” (*White*, 4:17-19) and that these devices can be “computer-based entities, such as personal digital assistants (PDAs), mobile phones, personal computers (PC), laptop computers, or traditional wireless or wire-line telephones.” *White*, 4:12-15.

XII. THE CHALLENGED CLAIMS OF THE '708 PATENT ARE NOT OBVIOUS

A. Petitioner’s Ground 1 Fails Because the Claims Would Not Have Been Obvious in View of *Barnett* and *Byrne*.

77. The following paragraphs address examples of why the challenged claims would not have been obvious in view of *Barnett* in combination with *Byrne*.

78. Dr. Chatterjee argues that *Barnett* in view of *Byrne* discloses or “suggests” the limitations of claims 1-3, 5-9, 11-13, 15, 17, and 19. Ex. 1002, ¶¶44-45; *see also* Section §VIII.A generally. This includes independent claims 1, 11, 16, and 18. Independent claims 16 and 18 are separately addressed in Ground 2, and Dr. Chatterjee alleges that *Barnett* alone discloses or “suggests” those claims. Ex. 1002, ¶¶98-112.

79. First, as I describe in detail in §XII.A.1, *Barnett* does not disclose claim limitation 1[b], which claims “refraining from communicating between the smartphone and the entity by the smartphone using the first air interface absent the proximity criterion having been satisfied between the smartphone and the entity.”

80. Second, as I described in detail in §XII.A.2, the *Barnett-Byrne* combination does not disclose or suggest claim limitation 1[d] which claims “wherein the communicating between the smartphone and the entity using a first air interface responsive to the proximity criterion having been satisfied between the smartphone and the entity to provide information to the entity over the short-range link between the smartphone and the entity is performed concurrently with the communicating between the smartphone and the base station using the second air

interface to receive a communications service from the base station via the second air interface.”

81. While I address certain limitations to demonstrate that each of the challenged claims are not unpatentable, I reserve the right to supplement this declaration to include additional information and opinions related to any and all challenged claims and claim elements.

1. Barnett Does Not Disclose and Would Not Have Rendered Obvious “refraining from communicating between the smartphone and the entity by the smartphone using the first air interface absent the proximity criterion having been satisfied between the smartphone and the entity” (Grounds 1 and 2).

82. Claim limitation 1[b] claims refraining from communicating between the smartphone and the entity by the smartphone using the first air interface absent the proximity criterion having been satisfied between the smartphone and the entity.” Claim limitation 11[c] similarly claims “refraining from communicating between the smartphone and the entity by the smartphone using the first air interface absent the proximity criterion having been satisfied between the smartphone and the entity.” Dr. Chatterjee incorporates his analysis of claim limitation 1[b] for claim limitation

11[c].⁴ Ex. 1002, ¶89. All four independent claims of the '708 Patent have similar claim limitations, and therefore all claims require “refraining from communicating between the smartphone and the entity by the smartphone using the first air interface absent the proximity criterion having been satisfied between the smartphone and the entity.”

83. First, it is unclear if Dr. Chatterjee believes that *Barnett* discloses or renders obvious this limitation. Dr. Chatterjee first states that “Barnett discloses this limitation.” Ex. 1002, ¶55. However, in the same paragraph he states that “a person of ordinary skill in the art would have understood that the phone and display refrain from communicating with each other over NFC if the proximity criterion is not satisfied because NFC communication is not possible at all if the proximity criterion is not satisfied.” *Id.* In either case, I disagree that *Barnett* discloses or would have rendered obvious this limitation.

⁴ Although Dr. Chatterjee addresses them in Ground 2, claim limitations 16[b] and 18[c] claim similar language, and Dr. Chatterjee addresses both by stating that “Barnett discloses this limitation for the same reasons as I discussed for limitation [1.b].” Ex. 1002, ¶¶100 (addressing claim limitation 16[b]) 108 (addressing claim limitation 18[c]).

84. Specifically, for claim limitation 1[b], Dr. Chatterjee states that “Barnett’s system and method is configured not to communicate (‘refraining from communicating’) between the mobile phone and display by the mobile phone using the NFC link (‘first air interface’) unless the mobile phone is within a certain distance of the display (‘absent the proximity criterion having been satisfied between the smartphone and the entity’).” Ex. 1002, ¶55.⁵ I disagree. *Barnett* does not disclose and would not have rendered obvious “refraining from communicating.”

85. Dr. Chatterjee points to *Barnett* ¶[0013] as support for his contention. Ex. 1002, ¶55. In ¶[0013], *Barnett* states that “NFC is a short-range high frequency wireless communication technology which enables the exchange of data between devices over about a short distance, such as a decimeter.” *Barnett*, ¶[0013]. *Barnett* goes on to state that “[t]he technology is an extension of a proximity-card communications standard, i.e., a contact-less card or radio-frequency identification (RFID) standard that combines the interface of a smartcard and a reader into a single device.” *Id.* *Barnett* then states that “unlike smart cards which must be powered by an external RF field, an NFC-enabled mobile phone has its own battery.” *Id.* *Barnett* thus contemplates that the disclosed “NFC-enabled” mobile phone is capable of

⁵ All claim language that is underlined herein is replicated from and originally appears in Dr. Chatterjee’s declaration (Ex. 1002).

communicating using NFC without contact with an external RF field. *Barnett* further discloses that in its system “the product identifiers 34 are an RFID device, such as a contact-less smart card.” *Barnett*, ¶[0023]. A POSITA would have understood that in order to communicate with a contact-less smart card, *Barnett*’s disclosed mobile device would have constantly enabled NFC in its mobile device so that it is able to periodically and persistently poll for NFC targets by emitting short bursts of radio frequency (RF) energy. Ex. 2010, p. 6 (“The second mode is the passive mode. In this mode, an active device can read data from an NFC tag. For instance, a smartphone can be used as a keycard to access entry into office buildings. When the smartphone is brought into proximity to the NFC tag, it generates a carrier field which the NFC tag modulates. The electromagnetic field that is produced by the smartphone supplies the tag with the electricity it needs to function . . .”).

86. Further, *Barnett* discloses a complex in-store system in which the NFC-enabled device has established and persistent “NFC link” when in the store. *Barnett*, ¶[0025]. This connection must be continuously enabled so that it can be used to infer “the location of the other device, e.g., the mobile phone” and the “location information can be used to direct the consumer and can be used by the retailer to analyze traffic flows through the store.” *Barnett*, ¶[0025]. Similarly, the *Barnett* system is not restricted to using NFC at the point of sale, but discloses using NFC to “enable a consumer to obtain information regarding the availability, location, and/or

price of the goods or services provided in the shopping list by using either the NFC capability of the mobile phone . . . to receive information from the retailer within a retail stores.” *Barnett*, ¶[0016]. This again confirms that *Barnett* relies on a continuously active NFC device and continuous efforts by the mobile device to establish the NFC link, to enable its overall shopping system.

87. Rather than establish that *Barnett* affirmatively discloses refraining from NFC communication, Dr. Chatterjee essentially equates the effective range of NFC, with the affirmative requirement that the two parties, the smartphone and the entity, “refrain[] from communicating.” Ex. 1002, ¶55. But Dr. Chatterjee has not established that *Barnett*’s “NFC-enabled” mobile phone, which is battery powered and does not require power from an external RF field,⁶ would *refrain* from communicating with other NFC-capable entities, especially in the context of *Barnett*’s NFC-augmented shopping experience whereby a mobile phone has its NFC capabilities continuously activated so as to benefit from the in-store experience. At most he has established that various NFC technologies may have effective ranges

⁶ Other technologies, such as RFID, can require an external power source to be active (e.g., a point of sale). NFC is distinct in that an NFC antenna is powered by a mobile device and would remain powered and active regardless of whether it was proximate to an external source (e.g., point of sale) or not.

that would limit the effectiveness of an NFC communication link, but effective range is not a problem in *Barnett* because everywhere in the store is within an effective NFC range. *See Barnett*, ¶[0025]. As such, he does not establish that a powered on and active NFC radio would “refrain[] from communicating” at all. Thus, Barnett fails to disclose, and would not have rendered obvious, this claim limitation.

88. For this reason, Ground 1 fails to disclose and would not have rendered obvious claim limitations 1[b] and 11[c], and as a result, Ground 1 does not disclose nor would it have rendered obvious independent claims 1 and 11, and all dependent claims therefrom. Further, as Dr. Chatterjee solely relies on his analysis of claim limitation 1[b] in his Ground 2 analysis of 16[b] and 18[c], Ground 2 fails to disclose and would not have rendered obvious independent claims 16 and 18, and all dependent claims therefrom. Ground 3, which is directed only to dependent claims 4, 10, and 14, does not alter this analysis or conclusion.

2. *Barnett-Byrne Does Not Disclose and Would Not Have Rendered Obvious “wherein the communicating between the smartphone and the entity using the first air interface responsive to the proximity criterion having been satisfied between the smartphone and the entity to provide information to the entity over the short-range link between the smartphone and the entity is performed concurrently with the communicating between the smartphone and the base station using the second air interface to receive a communications service from the base station via the second air interface” (Grounds 1 and 2).*

89. Claim limitations 1[d] and 11[e] require “wherein the communicating between the smartphone and the entity using the first air interface responsive to the proximity criterion having been satisfied between the smartphone and the entity to provide information to the entity over the short-range link between the smartphone and the entity is *performed concurrently* with the communicating between the smartphone and the base station using the second air interface to receive a communications service from the base station via the second air interface.” Dr. Chatterjee incorporates his analysis of claim limitation 1[d] for claim limitation 11[e].⁷ Ex. 1002, ¶91. All four independent claims of the ’708 Patent have a similar

⁷ Although Dr. Chatterjee addresses them in Ground 2, claim limitations 16[d] and 18[e] similarly require “wherein the communicating between the smartphone and the entity using the first air interface responsive to the proximity criterion having been satisfied between the smartphone and the entity to provide information to the

requirement, and therefore all claims require “wherein the communicating between the smartphone and the entity using the first air interface responsive to the proximity criterion having been satisfied between the smartphone and the entity to provide information to the entity [] is ***performed concurrently*** with the communicating [by] the smartphone [] using the second air interface to receive a communications service [] via the second air interface.”

90. Dr. Chatterjee states that the “Barnett-Byrne combination discloses and/or suggests this limitation.” Ex. 1002, ¶65. Dr. Chatterjee identifies “NFC communication between a phone and NFC-enabled check-out display” as disclosing or suggesting communicating between the smartphone and the entity. Ex. 1002, ¶65. He identifies communicating between a phone and a cellular base station using a cellular communication system as disclosing or suggesting communicating using the second air interface. Ex. 1002, ¶66. He then goes on to state that in *Barnett*, “the

entity is ***performed concurrently*** with the communicating by the smartphone using the second air interface to receive the communications service via the second air interface.” Dr. Chatterjee addresses both by incorporating his analysis of claim limitation 1[d]. Ex. 1002, ¶¶102 (addressing claim limitation 16[d]), 110 (addressing claim limitation 18[e] by reference to claim limitation 16[d] which incorporates claim limitation 1[d]).

functions associated with using the phone as a contact-less credit card (e.g., NFC (‘first air interface’)) and the functions associated with using the phone as a cell phone (e.g., cellular communication (‘second air interface’)) would have been combined into a unified package, such that the above-described ‘communicating. . . using the first interface’ [sic] and ‘communicating. . . using the second air interface’ would have been ‘performed concurrently.’” Ex. 1002, ¶67. I disagree that *Barnett* discloses communicating using the identified first and second air interfaces concurrently.

91. Dr. Chatterjee then goes on to “consider a scenario in which Barnett does not explicitly disclose that the above NFC communication and cellular communication are ‘performed concurrently’” and states that “a person of ordinary skill in the art would have been motivated in view of Barnett to implement the Barnett-Byrne system/method in this manner.” Ex. 1002, ¶68. I disagree that a person of ordinary skill in the art would have been motivated to modify *Barnett* to render this limitation obvious.

92. First, I agree that Dr. Chatterjee’s citations to *Barnett*, set forth in paragraph 67 of his report, set forth that *Barnett*’s mobile device has the capability to communicate with various communication networks. However, neither the identified citations nor any other part of *Barnett* discloses the use of those communication networks *concurrently* by a given device. And certain of his

citations miss the mark entirely, failing to even discuss use of multiple communication networks, much less multiple networks at one time. For example, Dr. Chatterjee points to *Barnett* ¶[0014] which states that “[t]he NFC protocol enables the mobile phone 14 to operate in several modes. One mode allows the phone to act as a passive tag, allowing a NFC terminal to read the information stored in the mobile phone 14.” But the “several modes” discussed here are not multiple modes of communication, but instead are a variety of modes of communication, all relying on NFC, which Dr. Chatterjee identified as a single air interface. Ex. 1002, ¶65. Similarly, *Barnett*’s cited discussion of using a phone as a credit card explicitly contemplates programming a device with credit card information, or store preference information, in advance of entering a store, so that the consumer can rely on NFC and further so that “the consumer does not have to scroll through menus or follow any other time consuming process simply to configure the mobile phone 14 each time they make a purchase.” *Barnett*, ¶[0032].

93. Further, *Barnett* explicitly discloses using NFC and other short-range capabilities of a mobile device as an ***alternative*** to cellular communication. *Barnett* states that its disclosed “system 10 is adapted to provide information to a consumer’s mobile phone 14 within a store without requiring the consumer to incur a mobile phone usage charge. That is, instead of using the data connection on a cellular carrier, the consumer uses a Wi-Fi network inside the store that has a connection to the

Internet.” *Barnett*, ¶[0016]. When discussing the various communication networks that a given device might use, *Barnett* goes on to state that a “Bluetooth-enabled mobile phone would enable a consumer to access a retailer’s communication system using short-range radio frequency, rather than using the mobile phones [sic] cell phone capabilities, and charges.” *Barnett*, ¶[0017]. *Barnett* even discloses that when using the mobile device for NFC, “[t]he mobile phone 14 may be programmed to be in an operating mode to learn about the current store using the NFC display 32.” *Barnett*, ¶[0031]. *Barnett* thus contemplates a specific mode of operation when engaged in NFC and does not disclose that cellular connectivity is also possible or desired when the device is engaged in this mode. For these reasons, *Barnett* does not disclose using multiple air interfaces concurrently, as claimed.

94. I also disagree that a POSITA would have been motivated to modify the *Barnett-Byrne* system in the manner proposed by Dr. Chatterjee. Dr. Chatterjee alleges, without support, that a POSITA “would have understood that allowing the phone to continue to receive phone calls, even while NFC is in use, would have improved user experience” Ex. 1002, ¶70. Dr. Chatterjee does not provide any detail or support regarding the alleged “safety and convenience concerns” that allegedly would have motivated a POSITA, and Dr. Chatterjee does not explain how a user allegedly would have benefited from talking on the phone while also browsing in-store information generated based on proximity. Further,

Dr. Chatterjee's discussion of permitting continued cellular connectivity to provide "flexibility to access the internet via cellular service in the event the in-store Wi-Fi network is down" (Ex. 1002, ¶71) does not establish that a user would have engaged in such cellular service while also concurrently utilizing the identified first air interface, NFC, as it instead contemplates using two air interfaces, cellular and Wi-Fi, as alternatives.

95. In contrast to Dr. Chatterjee's unsupported conclusions, a POSITA would have understood that there are advantages to single-mode communication, without concurrent use of air interfaces. For example, a POSITA would have understood, particularly in light of *Barnett's* disclosures, that single-mode communication would let the user avoid charges associated with unnecessary use of redundant cellular connectivity, when short-range communication modes are available. *Barnett*, ¶¶[0016], [0017]. If the device is engaged in back-up cellular communications, then the charges would still be incurred. Additionally, a POSITA would have understood that, and Dr. Chatterjee admits, cellular service can be unavailable. *See* Ex. 1002, ¶70.

96. Moreover, *Barnett's* system is designed to be used inside of stores, an environment that was known to have limited cellular reception. *See Barnett* ¶[0005] ("A technique is provided for providing information to a customer within a store."). Continuous efforts by a device to connect to a cellular network, while that device

was indoors, can drain the device's battery and detract from *Barnett's* in-store experience. Exclusively relying on an available short-range communications mode, such as the storewide NFC disclosed in *Barnett*, would have avoided needless efforts to connect to a potentially weak and redundant, cellular network, thus preserving battery life. Limiting a device to a single communication mode at a time also decreases the risk of signal interference or disruption, hacking, and/or other privacy intrusions. All of these concerns would have been important to a POSITA when utilizing a mobile device during, for example, a financial transaction.

97. For this reason, Ground 1 fails to disclose and would not have rendered obvious claim limitations 1[d] and 11[e], and as a result, Ground 1 does not disclose and would not have rendered obvious independent claims 1 and 11, and all dependent claims therefrom. Further, as Dr. Chatterjee solely relies on his analysis of claim limitation 1[d] in his Ground 2 analysis of 16[d] and 18[e], Ground 2 fails to disclose and would not have rendered obvious independent claims 16 and 18, and all dependent claims therefrom. Ex. 1002, ¶¶102 (addressing claim limitation 16[d]), 110 (addressing claim limitation 18[e] by reference to claim limitation 16[d]). Ground 3, which is directed only to dependent claims 4, 10, and 14, does not alter this analysis or conclusion.

B. Petitioner’s Ground 2 Fails Because the Claims Would Not Have Been Obvious in View of *Barnett*.

98. Independent claims 16 and 18 are separately addressed in Ground 2, and Dr. Chatterjee alleges that *Barnett* alone discloses or “suggests” those claims. Ex. 1002, ¶¶98-112.

99. First, as I describe in detail in §XII.A.1, *Barnett* does not disclose claim limitation 1[b], which claims “refraining from communicating between the smartphone and the entity by the smartphone using the first air interface absent the proximity criterion having been satisfied between the smartphone and the entity.” Although Dr. Chatterjee addresses them in Ground 2, claim limitations 16[b] and 18[c] claim similar language, and Dr. Chatterjee addresses both by stating that “Barnett discloses this limitation for the same reasons as I discussed for limitation [1.b].” Ex. 1002, ¶¶100 (addressing claim limitation 16[b]) 108 (addressing claim limitation 18[c]).

100. For the reasons set forth above in §XII.A.1, Ground 2 fails to disclose and would not have rendered obvious claim limitations 16[b] and 18[c]. I incorporate my analysis of Ground 1 with respect to Ground 2.

101. Second, as I described in detail in §XII.A.2, the *Barnett-Byrne* combination does not disclose nor suggests claim limitation 1[d] which claims “wherein the communicating between the smartphone and the entity using a first air interface responsive to the proximity criterion having been satisfied between the

smartphone and the entity to provide information to the entity over the short-range link between the smartphone and the entity is performed concurrently with the communicating between the smartphone and the base station using the second air interface to receive a communications service from the base station via the second air interface.” Although Dr. Chatterjee addresses them in Ground 2, claim limitations 16[d] and 18[e] similarly require “wherein the communicating between the smartphone and the entity using the first air interface responsive to the proximity criterion having been satisfied between the smartphone and the entity to provide information to the entity is *performed concurrently* with the communicating by the smartphone using the second air interface to receive the communications service via the second air interface.” Dr. Chatterjee addresses both by incorporating his analysis of claim limitation 1[d]. Ex. 1002, ¶¶102 (addressing claim limitation 16[d]), 110 (addressing claim limitation 18[e] by reference to claim limitation 16[d]).

102. For the reasons set forth in §XII.A.2, Ground 2 fails to disclose and would not have rendered obvious claim limitations 16[d] and 18[e]. I incorporate my analysis of Ground 1 with respect to Ground 2.

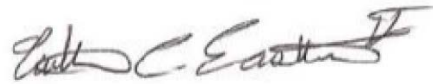
XIII. SUMMARY AND OTHER REMARKS

103. It is my opinion that Petitioner has failed to show that any of the Challenged Claims set forth in Grounds 1, 2, and 3 are unpatentable as obvious as explained above.

104. My opinions expressed in this Declaration are based on the information available to me at this time. To the extent any additional information becomes available, I reserve the right to supplement my opinions contained herein.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed on November 14, 2025.

A handwritten signature in dark ink, appearing to read "Chuck Easttom", is positioned above a horizontal line.

Chuck Easttom