IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

SECURE WI-FI LLC, Plaintiff, v. SAMSUNG ELECTRONICS CO. LTD. and SAMSUNG ELECTRONICS AMERICA, INC. Defendants.	§ § § § § § § § § §	Case No. 2:24-CV-0047-JRG **JURY TRIAL DEMANDED**

DEFENDANTS' PRELIMINARY INVALIDITY CONTENTIONS AND DISCLOSURES

Pursuant to Patent Rule 3-3 and Standing Order Regarding Subject Matter Eligibility Contentions, Defendants Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. (collectively, "Defendants") jointly submit the following Invalidity Contentions and Disclosures to Plaintiff Secure Wi-Fi LLC ("Plaintiff"). Defendants reserve the right to supplement and amend their Preliminary Invalidity Contentions and Disclosures pursuant to the Federal Rules of Civil Procedure, P.R. 3-6 and/or 3-7, Standing Order Regarding Subject Matter Eligibility Contentions § (c), and/or any other order or schedule entered by the Court.

In its Infringement Contentions dated May 15, 2024, Plaintiff alleges that Defendants infringe claims 1-4, 6-15, 17-20, and 22-24 of U.S. Patent No. 10,694,384 ("the '384 Patent"), claims 1-5 and 7-17 of U.S. Patent No. 9,717,005 ("the '005 Patent"), and claims 10-11, 13-18, 20-22, 24-25, and 28 of U.S. Patent No. 9,961,552 ("the '552 Patent") (collectively, the "Asserted

IPR2024-01366
Secure Wi-Fi LLC EX2003

Claims" and "Patents-in-Suit")[1]. Defendants contend that each of the Asserted Claims is invalid under at least U.S.C. §§ 101, 102, 103, and/or 112.

I. PRELIMINARY STATEMENT AND RESERVATION OF RIGHTS

a. No waiver

Nothing in these Preliminary Invalidity Contentions is intended, nor should be construed, as a waiver of any claim construction argument, noninfringement position, or argument under 35 U.S.C. § 112. Defendants' statements herein (including the accompanying claim charts) reflect Defendants' present understanding of the purported scope of the claims as alleged by Plaintiff in its Infringement Contentions (as best those contentions can be understood). For the avoidance of doubt, these contentions are not intended to present or argue in favor of any construction of the Asserted Claims, and Defendants expressly reserve the right to present constructions that differ from any construction that may be alleged to underlie these contentions. The court established separate deadlines for the parties' proposed claim constructions, and Defendants will disclose their proposed constructions accordingly. These invalidity contentions do not constitute an acquiescence to Plaintiff's interpretation of any claims to the extent they depart from the plain meaning of the Asserted Claims and from the proper scope of the claims as may be subsequently construed by the Court. Defendants disagree with Plaintiff's apparent positions as to the purported scope of the Asserted Claims to the extent they seek to expand the scope of the Asserted Claims beyond their proper construction and to the extent those apparent positions can be understood from Plaintiff's Infringement Contentions.

The Asserted Claims have not yet been construed by the Court in this case and, thus,

[1] In Plaintiff's Infringement Contentions, Plaintiff asserted that Defendants infringed the Asserted Claims. Should this Court allow Plaintiff to later assert additional contentions not asserted in Plaintiff's Infringement Contentions, Defendants reserve the right to supplement and amend their Invalidity Contentions and Disclosures.

IPR2024-01366
Secure Wi-Fi LLC EX2003

Defendants have not yet had the opportunity to compare the Asserted Claims of the Patents-in-Suit (as construed by the Court) with the prior art. Defendants reserve the right to amend, supplement, or materially modify their invalidity contentions after the claims have been construed by the Court, including pursuant to P.R. 3-6 and/or 3-7 and Standing Order Regarding Subject Matter Eligibility Contentions § (c). Defendants also reserve the right to amend, supplement, or materially modify their invalidity contentions in response to any claim construction positions that Plaintiff may take. Defendants reserve the right to assert that a claim is indefinite, not enabled, or fails to meet the written description requirement of 35 U.S.C. § 112 based on any claim construction position Plaintiff may take in this case or based on any claim construction the Court may adopt in this case.

b. No Admission

Nothing disclosed herein is an admission or acknowledgement that any product accused of infringement by Plaintiff in its Infringement Contentions (the "Accused Products"), or any of Defendants' other products or services, infringes any of the Asserted Claims.

Defendants further note that Plaintiff appears to rely upon overly broad constructions of the Asserted Claims. At the same time, Plaintiff's Infringement Contentions are in many places too general and vague to discern Plaintiff's infringement theories and how exactly Plaintiff contends each Accused Product meets or practices each element of the Asserted Claims. As a result, Defendants have been prejudiced in their ability to prepare these invalidity contentions. In addition, Plaintiff's Infringement Contentions, in many cases, fail to put Defendants on notice of Plaintiff's interpretation of the Asserted Claims, further prejudicing Defendants' ability to identify relevant prior art. For example, Plaintitff's Infringement Contentions do not identify infringement of claim 6 of the '005 Patent, but assert claim 7, which depends from claim 6. As such, Plaintiff

IPR2024-01366
Secure Wi-Fi LLC EX2003

fails to articulate an infringement theory explaining that the Accused Products practice the limitations of claim 7 that are recited in claim 6. In addition, Plaintiff has not properly identified any theories of infringement under the doctrine of equivalents. Defendants have relied upon Plaintiff's apparent representation that it has no doctrine of equivalent theories in preparing these Preliminary Invalidity Contentions, and any attempt by Plaintiff to present an untimely doctrine of equivalents argument would be severely prejudicial to Defendants. To the extent that the Court later permits Plaintiff to amend its contentions to cure the deficiencies of its current contentions or to pursue any currently undisclosed doctrine of equivalents theories, Defendants expressly reserve the right to supplement or amend these invalidity contentions to account for such amendments.

To the extent that any of the prior art references disclose the same functionality or feature of any of the Accused Products, Defendants reserve the right to argue that said feature or functionality does not practice any element of any of the Asserted Claims, and to argue, in the alternative, that if said feature or functionality is found to practice any element of the Asserted Claims, then the prior art reference demonstrates that the element is not novel, is obvious, and/or is otherwise not patentable.

Attached hereto are representative claim charts that identify where the elements of the Asserted Claims of the Patents-in-Suit may be found in the prior art and further identifying why those elements are not novel or non-obvious. The references cited in the attached claim charts may disclose the limitations of the Asserted Claims expressly and/or inherently. The suggested obviousness combinations may be presented in conjunction with or in the alternative to Defendants' contentions regarding anticipation. These obviousness combinations should not be construed to suggest that any reference included in any combination is not anticipatory in its own

IPR2024-01366
Secure Wi-Fi LLC EX2003

right. Further, to the extent that Plaintiff contends that any of the references identified do not constitute available prior art under 35 U.S.C. § 102, Defendants reserve the right to rely upon other prior art references that are in the same patent family or are prior version with substantially identical disclosures as evidence of invalidity based on the same theories as those disclosed below.

c. Reservation of Rights

Prior art not currently included in this disclosure may become relevant. Defendants are currently unaware of the extent, if any, to which Plaintiff will contend that limitations of the Asserted Claims are not disclosed in the prior art identified by Defendants. Defendants reserve the right to identify other references that would have made the addition of the allegedly missing limitation to the disclosed device or method obvious to show that the allegedly missing limitation would have been known or readily apparent to one of ordinary skill in the art at the time of the invention in light of the disclosure of the prior art at issue. Defendants further reserve the right to rely on any of the references being produced herewith in order to demonstrate the state of art at the alleged times of invention and as evidence of the knowledge of one or ordinary skill in the art to support any motivations to modify or combine the charted prior art references with other references or knowledge.

Plaintiff has not yet produced other prior art of which it may be aware of but is not yet known to Defendants. Defendants may seek to supplement their invalidity contentions with prior art contained in such production once they have had a fair opportunity to review, analyze, and chart such prior art. Defendants reserve the right to amend their invalidity contentions with any additional prior art known by Plaintiff but not yet disclosed to Defendants.

Defendants provide these invalidity contentions only for the claims asserted by Plaintiff but reserve the right to seek invalidation of all claims in each of the Patents-in-Suit.

d. Ongoing Investigation

Defendants' investigation is ongoing, and Defendants expressly reserve the right to amend their disclosures and document production to account for evidence uncovered as their investigations continue. Such amendments include identifying and relying on additional references that may result from Defendants' further searches and analysis. Defendants reserve the right to supplement these contentions in light of any additional prior art of which Plaintiff is aware and did not disclose to Defendants yet, or that might be subsequently disclosed by Plaintiff in responding to Defendants' discovery requests. Defendants anticipate issuing subpoenas to third parties believed to have knowledge, documentation and/or corroborating evidence concerning some of the prior art listed herein and/or additional prior art. These third parties include, but are not limited to, the authors, members of organizations, employers of authors, inventors, assignees, or former or current employees of assignees, of the references identified in these invalidity contentions. For example, Defendants anticipate issuing subpoenas to individuals and entities responsible for the development of prior art systems and standards. Defendants may also commission reverse engineering studies of certain product prior art identified herein. Discovery from these reverse engineering studies likely will reveal information that impacts the disclosures and contentions herein. Defendants reserve the right to supplement these contentions in light of any newly discovered information produced by these third parties and reverse engineering studies from which Defendants may seek discovery.

II. IDENTIFICATION OF EACH ITEM OF PRIOR ART THAT ANTICIPATES EACH ASSERTED CLAIM OR RENDERS IT OBVIOUS PURSUANT TO P.R. 3-3(a)

Defendants identify below each item of prior art that anticipates and/or renders obvious one or more of the Asserted Claims. The prior art identified below is also relevant for its showing of the state of the art and reasons and motivations for making improvements, additions,

modifications, and combinations of elements from the same or other prior art.

Subject to Defendants' reservation of rights, and pursuant to P.R. 3-3(a), Defendants identify the following prior art now known to them as anticipating or rendering obvious the Asserted Claims of the Patents-in-Suit, either expressly or inherently, alone or in combination. At this time, Defendants have provided claim charts for certain prior art references as Appendices A-1 through A-10 ('384 Patent), B-1 through B-10 ('005 Patent), and C-1 through C-10 ('552 Patent) hereto, discussing the elements of the Asserted Claims and examples of where the claimed subject matter is found in the prior art, as well as further motivation for the person of ordinary skill to combine references or make obvious modifications to the prior art references. Defendants are not providing separate claim charts for each and every prior art reference because such references are cited in conjunction with references for which charts are being provided, they may contain similar disclosures to other prior art references for which charts are being provided, and/or they may be used to show the state of the art at the time the alleged invention was made.

Defendants are continuing their investigation concerning the circumstances and facts relating to the alleged invention of the Patents-in-Suit and for each item of prior art, including, but not limited to their respective publication, sale, offer for sale, prior use, knowledge, development, and/or development efforts, as applicable. Defendants reserve the right to present additional items of prior art under 35 U.S.C. § 102(a), (b), (e), and/or (g), and/or §103 discovered or otherwise identified or appreciated during the course of discovery or further investigation. In addition, Defendants reserve the right to assert invalidity under 35 U.S.C. § 102(c), (d), or (f) to the extent that discovery or further investigation yields information forming the basis for such invalidity. In this regard, Defendants efforts have been hampered by Plaintiff's failure to disclose the materials called for by P.R. 3-2(a)-(b). Defendants continue to investigate additional sources

IPR2024-01366
Secure Wi-Fi LLC EX2003

of prior art and reserve the right to supplement these Preliminary Invalidity Contentions and Disclosures as information becomes available to Defendants.

a. Prior Art Patents and Patent Applications

Defendants identify under P.R. 3-3(a) the following non-exhaustive list of prior art patents and patent applications that anticipate and/or render the Asserted Claims obvious. For prior art anticipating any or all of the Asserted Claims, such prior art is identified in the charts appended hereto; for prior art that obviate any or all of the Asserted Claims under 35 U.S.C. § 103, the detailed basis is set forth in the charts appended hereto. Defendants reserve the right to rely upon foreign counterparts of U.S. patents identified below, as well as U.S. counterparts of foreign patents and foreign patent applications identified in the Table below, some of which have been previously identified in the prosecution of one or more of the Patents-in-Suit. Defendants further incorporate the prosecution history in connection with each of the Patents-in-Suit.

TABLE 1

No.	Number	Country of Origin	Date of Publication /Issue
1	7,185,204	US	Feb. 27, 2007
2	7,395,427	US	Jul. 1, 2008
3	7,710,933	US	May 4, 2010
4	7,787,476	US	Aug. 31, 2010
5	7,808,958	US	Oct. 5, 2010
6	7,836,166	US	Nov. 16, 2010
7	7,885,639	US	Feb. 8, 2011
8	8,005,458	US	Aug. 23, 2011
9	8,126,476	US	Feb. 28, 2012

10	8,493,977	US	Jul. 23, 2013
11	8,655,312	US	Feb. 18, 2014
12	8,695,078	US	Apr. 8, 2014
13	8,769,639	US	Jul. 1, 2014
14	8,782,745	US	Jul. 15, 2014
15	8,824,678	US	Sep. 2, 2014
16	8,893,246	US	Nov. 18, 2014
17	9,264,893	US	Feb. 16, 2016
18	9,351,166	US	May 24, 2016
19	9,380,411	US	Jun. 28, 2016
20	9,445,353	US	Sep. 13, 2016
21	2003/0177267	US	Sep. 18, 2003
22	2003/0221006	US	Nov. 27, 2003
23	2004/0006642	US	Jan. 8, 2004
24	2004/0078571	US	Apr. 22, 2004
25	2004/0264427	US	Dec. 30, 2004
26	2004/0029580	US	Feb. 12, 2004
27	2004/0052216	US	Mar. 18, 2004
28	2005/0059416	US	Mar. 17, 2005
29	2006/0104243	US	May 18, 2006
30	2006/0114863	US	Jun. 1, 2006
31	2006/0120317	US	Jun. 8, 2006

32	2006/0150250	US	Jul. 6, 2006
33	2006/0274643	US	Dec. 7, 2006
34	2007/0019609	US	Jan. 25, 2007
35	2007/0049323	US	Mar. 1, 2007
36	2007/0058601	US	Mar. 15, 2007
37	2007/0060128	US	Mar. 15, 2007
38	2007/0097904	US	May 3, 2007
39	2007/0186276	US	Aug. 9, 2007
40	2007/0211653	US	Sep. 13, 2007
41	2007/0286143	US	Dec. 13, 2007
42	2007/0218875	US	Sep. 20, 2007
43	2008/0043686	US	Feb. 21, 2008
44	2008/0052779	US	Feb. 28, 2008
45	2008/0263660	US	Oct. 23, 2008
46	2009/0235077	US	Sep. 17, 2009
47	2010/0229216	US	Sep. 9, 2010
48	2011/0083165	US	Apr. 7, 2011
49	2011/0314147	US	Dec. 22, 2011
50	2012/0044914	US	Feb. 23, 2012
51	2012/0064912	US	Mar. 15, 2012
52	2012/0076072	US	Mar. 29, 2012
53	2012/0201201	US	Aug. 9, 2012

54	2012/0210395	US	Aug. 16, 2012
55	2012/0213211	US	Aug. 23, 2012
56	2012/0221955	US	Aug. 30, 2012
57	2012/0230304	US	Sep. 13, 2012
58	2012/0257536	US	Oct. 11, 2012
59	2012/0257753	US	Oct. 11, 2012
60	2012/0258688	US	Oct. 11, 2012
61	2012/0275443	US	Nov. 1, 2012
62	2012/0311328	US	Dec. 6, 2012
63	2013/0019298	US	Jan. 17, 2013
64	2013/0070744	US	Mar. 21, 2013
65	2013/0150012	US	Jun. 13, 2013
66	2013/0176897	US	Jul. 11, 2013
67	2013/0179943	US	Jul. 11, 2013
68	2013/0281056	US	Oct. 24, 2013
69	2013/0301617	US	Nov. 14, 2013
70	2013/0343364	US	Dec. 26, 2013
71	WO 2007/086705	International	Aug. 2, 2007
72	JP2009-239513	JP	Oct. 15, 2009
73	JP2009-033585	JP	Feb. 12, 2009
74	WO 2007/008052	International	Jan. 18, 2007
75	EP 2 372 971	Europe	Oct. 5, 2011

76	WO 2007/061167	International	May 31, 2007
77	8,069,483	US	Nov. 29, 2011

b. Prior Art Publications

In addition, the following prior art publications invalidate the Asserted Claims of the Patents-in-Suit. For prior art anticipating any or all of the Asserted Claims, such prior art is identified in the charts appended hereto; for prior art that obviates any of the asserted claims, the detailed basis is set forth in the charts appended hereto as Appendices A-1 through A-10; B-1 through B-10; and C-1 through C-10.

TABLE 2

No.	Prior Art Reference Title	Date of Publication	Author/Publisher
1	Enhancing Location Privacy in Wireless LAN Through Disposable Interface Identifiers: A Quantitative Analysis	Jun. 2005	Mobile Networks and Applications
2	Enabling Location Privacy in Wireless Personal Area Networks	Sep. 2006	
3	Anonymous MAC Addresses, IEEE 802.11-04-780-00-wien	July 2004	Haverinen at al.
4	IEEE Standard for Local and metropolitan area networks—Media Access Control (MAC) Security, Amendment 1: Galois Counter Mode—Advanced Encryption Standard—256 (GCM-AES-256) Cipher Suite	Oct. 14, 2011	IEEE Standards Association
5	IEEE P802.11 Wireless LANs: TGr Pre-Authentication	Sep. 2006	IEEE
6	IEEE P802.11 Wireless LANs: Fast Roaming Using Multiple Concurrent Associations	Dec. 2004	IEEE
7	Motorola TFr Fast Handover Proposal	Oct. 2004	IEEE
8	Seamless BSS Transition Protocol	Jan. 2005	IEEE
9	Transition Acceleration Protocol	Oct. 2004	IEEE
10	IEEE Standard for Information Technology—Telecommunications and information exchange	Mar. 29, 2012	IEEE Computer Society

	between systems Local and metropolitan area networks—Specific requirements: Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications		
11	Privacy-Preserving 802.11 Access-Point Discovery (presentation)	Feb. 3, 2009	Janne Lindqvist et al.
12	Why MAC Address Randomization is not Enough: An Analysis of Wi-Fi Network Discovery Mechanisms	May 30-June 3, 2016	Mathy Vanhoef et al.
13	Chattering Laptops	July 23-25, 2008	Tuomas Aura et al.
14	Location Privacy in Pervasive Computing	January-March 2003	Alastair R. Beresford et al.
15	Enhancing Location Privacy in Wireless LAN Through Disposable Interface Identifiers: A Quantitative Analysis	Sept. 19, 2003	Marco Gruteser et al.
16	Preserving Location Privacy in Wireless LANs	June 11-14, 2007	Tao Jiang et al.
17	Practical Privacy Enhancing Technologies for Mobile Systems	May 6, 2009	Janne Lindqvist
18	Privacy-Preserving 802.11 Access-Point Discovery (	March 16-18, 2009	Janne Lindqvist et al.
19	Privacy-Preserving 802.11 Access-Point Discovery	March 16-18, 2009	Janne Lindqvist et al.
20	IEEE 802.11 WEP (Wired Equivalent Privacy) Concepts and Vulnerability	Spring 2005	Shivaputrappa Vibhuti

c. Items Offered for Sale, Sold, or Publicly Used or Known

Although Defendants' investigation is ongoing, information available to date indicates that the subject matter of the prior art patents and publications identified herein above was: (1) known or used by others in this country before the alleged invention of the claimed subject matter of the Asserted Claims; (2) was in public use and/or on sale in this country more than one year before the earliest effective filing date of the Patents-in-Suit; and/or (3) was invented by another who did not abandon, suppress, or conceal, before the alleged invention of the subject matter of the Asserted Claims.

Discovery of Plaintiff's documents and information is in its early stages and ongoing.

Defendants' prior art investigations and third party discovery are also not yet complete. For example, one or more Defendants expect to issue subpoenas to third parties believed to have knowledge, documentation and/or corroborating evidence concerning some of the prior art in the above sections, the appendices attached hereto, and/or additional prior art, including evidence of prior use, sale, or knowledge under 35 U.S.C. § 102. These third parties include, without limitation, authors, inventors, or assignees to the prior art references listed in these contentions or individuals that have access to the prior art references listed in these contentions, including, but not limited to members of the Institute of Electrical and Electronics Engineers (IEEE) 802.11 (2012) base standard review and evaluation committee.

Defendants reserve the right to present additional items of prior art located during the course of such discovery or further investigation, including, but not limited to, discovery from Plaintiff and documents and information obtained through third party subpoenas. For new prior art anticipating any or all of the Asserted Claims, Defendants contemplate that such prior art will be identified in supplemental charts hereto; for prior art that obviates any or all of the asserted claims, the detailed basis also would be set forth in supplemental charts hereto, as such information becomes available during Defendants' continuing investigations.

III. STATEMENT OF WHETHER EACH ITEM OF PRIOR ART ANTICIPATES OR RENDERS OBVIOUS PURSUANT TO P.R. 3-3(b) AND 3-3(c)

This section, and the Appendices attached hereto, summarize the reasons why each prior art reference anticipates or otherwise invalidates the Asserted Claims of the Patents-in-Suit. This section, in conjunction with the claim charts attached in the Appendices, also sets forth the detailed bases for alternative contentions of obviousness and identifies where specifically in each item of prior art each element of each Asserted Claim is found.

For each Asserted Claim that is anticipated by a reference, the corresponding claim chart

includes a citation to that reference for each limitation. While Defendants have identified at least one citation per limitation present in a reference, each and every disclosure of the same limitation in the same reference is not necessarily identified. In an effort to focus on the issues, Defendants cite only portions of the identified references, even where a reference may contain additional support for a particular claim element. Persons of ordinary skill in the art generally read a prior art reference as a whole and in context of other publications and literature. Defendants reserve the right to rely on uncited portions of the prior art references and on other publications and expert testimony to provide context and as aids to understanding and interpreting the portions that are cited. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge, skill, or creativity of those skilled in the art. Where Defendants cite to a particular figure in a prior art reference, the citation should be understood to encompass the caption and description of the figure and any text relating to the figure in addition to the figure itself. Conversely, where a cited portion of text refers to a figure, the citation should be understood to include the figure as well.

Further, Defendants reserve the right to argue that any difference between that prior art and the corresponding patent claim would have been either inherent in the art or obvious to a person of ordinary skill in the art, even if Defendants have not specifically denoted that the art is to be combined with the knowledge of a person of ordinary skill in the art. The lack of a citation for a claim limitation should not be deemed an admission that the limitation is not disclosed or is not inherent in a particular reference. Defendants also reserve the right to rely on other references (irrespective of whether such references themselves qualify as prior art) to show the state of the

art, and/or to rely on expert testimony to provide context to, or aid in, understanding the expressly cited portions or the inherent features of the identified prior art and additional prior art that may be uncovered as discovery proceeds.

Defendants note that certain references, such as patents, patent applications, standards/protocols, or other literature documents, often only describe that which is new and do not describe those features and elements that are well-known to a person of ordinary skill in the art. For example, a literature reference may describe an algorithm for transmitting or receiving without describing the elements (such as processors, encoders, software, etc.) that are needed to implement the algorithm. In such a case, Defendants intend to rely on one or more of the references set forth herein for the disclosure of such well-known elements and reserves the right to include expert testimony and other background references for such purposes.

a. The ’384 Patent

Defendants contend that the prior art references identified in Appendices A-1 through A-10 and/or described below anticipate and/or render obvious, alone or in combination, one or more of the Asserted Claims of the ’384 Patent.

TABLE 3

U.S. Patent No. 10,694,384	
Appendix No.	**Reference(s) Name**
A-1	WO 2007/086705 (*Yun*)
A-2	US 2012/0076072 (*Jalfon*)
A-3	US 7,885,639 (*Satish*)
A-4	US 2004/0006642 (*Jang642*)
A-5	US 2003/0177267 (*Orava*)

A-6	US 2007/0211653 (*Mizukoshi*)
A-7	IEEE Standard 802.11 (IEEE 802.11 Standard (2012))
A-8	US 8,824,678 (*Ochikubo*)
A-9	US 8,126,476 (*Vardi*)
A-10	JP 200939513 (*Matsudaira*)

With regard to obviousness and motivation to combine references, under 35 U.S.C. § 103 a patent is invalid if the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the alleged invention was made; when an alleged invention is a combination of prior art elements, courts are to use an expansive and flexible approach to determine obviousness. *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415 (2007). In *KSR*, the Supreme Court unanimously found unnecessary the teaching, suggestion, or motivation to combine test long used by the United States Court of Appeals for the Federal Circuit to determine when references can be combined to find a claim obvious under § 103. In its place, the Court directed the immediate application of a broad, flexible analysis in determining the patentability/validity of claimed subject matter when tested against the statutory mandate that claims be non-obvious. *Id*. at 415.

To be nonobvious, an improvement must be "more than the predictable use of prior art elements according to their established functions." *Id*. at 417. "The proper question [for a court to ask is] whether a [person] of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading" the disclosure of one prior art reference with that of another." *Id*. at 424. "Common sense teaches…that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of

ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id*. at 420. The person of ordinary skill in the art should not be limited to looking at prior art designed to solve the same problem nor to approaching that art from the perspective of solving the problem the patentee claimed to have been solving. *Id*. at 419-20. Under *KSR*, an explanation for why a combination of prior art items renders a claim obvious may be found, for example, in the "interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person of ordinary skill in the art." *Id*. at 418.

All of the Asserted Claims of the '384 Patent are rendered obvious by each combination identified in the claim charts. The combination of prior art references in the charts are exemplary and are not intended to be exhaustive. Additional obviousness combinations of the references identified herein are possible, and Defendants reserve the right to use any such combination(s) in this litigation. In particular, Defendants are currently unaware of Plaintiff's allegations with respect to the level of skill in the art and the qualifications of the typical person of ordinary skill in the art. To the extent that Plaintiff argues that any of the prior art identified in these Preliminary Invalidity Contentions does not disclose a limitation of the Asserted Claims, Defendants reserve the right to rely on any combination of that prior art with any prior art identified in these contentions to show that it would have been obvious for a person of ordinary skill to include the allegedly missing limitation at the time of the alleged invention of the Asserted Claims of the '384 Patent. To the extent that Plaintiff challenges any combination of the prior art identified herein, Defendants reserve the right to supplement these contentions to further specify the reasons or motivation to combine the prior art.

No showing of a specific motivation should be required to combine the references

disclosed in the accompanying claim charts, because each combination of art would have no unexpected results, at most would simply represent a readily known alternative to a person of ordinary skill in the art, and because the cited art relates to the same general objectives and subject area, including, without limitation, systems, methods, and devices for connecting to a wireless network. These references are within the field of the '384 Patent or are directed to the same or similar subject matter within the relevant fields of endeavor. Additionally, the references, and any products, devices, or processes described in the references already existed and/or were invented within the same time period, thus providing further motivation for combination.

As established above, *KSR* holds that prior art need not disclose the precise teachings of a purported invention to render it obvious, because a court "can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id*. at 418.

Although Defendants identify particular teachings in the prior art that demonstrates the claim language is disclosed and/or obvious, Defendants identification of prior art teachings does not admit that such claim language is entitled to any patentable weight. To the extent any claim language is shown not to be disclosed or obvious in view of the prior art, Defendants reserve the art to assert that the claim language is not entitled to patentable weight.

Furthermore, the prior art relied upon by Defendants, alone or in combination, contains explicit and/or implicit teachings, suggestions, motivations, or inferences to combine them due to the following: (1) the knowledge generally available to a person of ordinary skill in the art; (2) the prior art disclosures as understood by a person of ordinary skill in the art; (3) the nature of the problem to be solved; (4) the fact that each prior art reference addresses similar problems; (5) and the knowledge of those skilled in the art regarding designing and operating systems and schemes for securely connecting devices to wireless networks through access points. Defendants may also

rely on expert testimony to establish that the Asserted Claims of the ’384 Patent are invalid for obviousness.

It would have been obvious for a wireless end device to communicate with and securely connect to a wireless network through a wireless access point with a device and/or system designed to make such a connection, because such connections and devices to achieve such connections were known and standardized through, for example, the IEEE Std 802.11 - 2012 (“IEEE 802.11 Standard (2012)”) before the priority date of the Patents-in-Suit. This document had already established certain required transmissions and processes for wireless connections between networks and end devices, or stations, through wireless access points.

To obtain the desired connection, one known method was for the end device to initiate the connection process by transmitting certain information about the end device in a probe request frame, for example, the media access control (MAC) address associated with the end device to an access point. At this stage of the connection process, a specific access point need not be identified, but instead the probe request is generally transmitted. In response to receiving a probe request frame, including the information contained therein, an access point transmits a probe response providing key information concerning the access point, including the probe response frame according to the IEEE 802.11 Standard (2012), which includes the service set identifier (“SSID”) for the network name and the MAC address for the access point. The end device is configured to receive the probe response and based on the information contained in the probe response, determine whether to initiate the next stage of connecting to the network.

After receiving a probe response or multiple probe responses from access points, it was known for the end device to then identify specific access points on the network and seek to connect to the network through the access point. In doing so, it was known to determine an optimal or

desired access point to seek connection based upon the information contained in the probe response, for example, signal strength, SSID name, MAC address, or based on comparing information received in the probe response to other information appearing in pre-authentication or pre-approved lists the end device obtained. *See, e.g.*, U.S. Patent No. 8.126,476 at 3:27:61, 4:27-28, 10:15-28, 13:10-35. Once the end device selected an access point it decided to seek to connect to the network through, the next step of the IEEE 802.11 Standard (2012) required an authentication process to be initiated by the end device. *See* IEEE 802.11 Standard (2012) at 84 (FIG. 4-17), 1014-1015.

To accomplish the authentication process, the end device transmits an authentication request to the access point. *See id*. at 1014 (identifying type of authentication mechanisms); *see also id*. at §§ 11.2.3.2-3, 12.5-6, 11.3. The authentication request includes a specific set of information required by the IEEE 802.11 Standard (2012), which at that time included a MAC address of the end device. It was known to include, for example, the authentic MAC address of the end device because that information was generally unique and allowed the access point to authenticate the specific end device for connection to the network. Upon receiving the authentication request from the end device, the IEEE 802.11 Standard (2012) permitted the access point to approve the authentication request based on the information contained in the authentication request. *See id*. at 1014; *see also id*. at §§11.2.3.2-3, 12.5-6, 11.3. Upon approval, the access point transmitted back to the end device an authentication approval indicating permission to further seek connection to the network. *See* IEEE 802.11 Standard (2012) at 84 (FIG. 4-17).

Upon receipt of the authentication approval, the IEEE Standard then required the end device or station to transmit an association request to associate with the access point. Data cannot

be transmitted across the access point until the end device or station becomes associated with the access point. Association provides station to access point mapping, which allows data transmission. *See* IEEE 802.11 Standard (2012) at 71. First, an association request is transmitted. *See id*. at 1016-17 (describing association procedure). Upon receipt of the association request, the access point then responds with an association approval response. At any given instant, a station is generally associated with no more than one access point preventing disclosure of data publicly. *Id*. at 72, 1017-19 (describing association response procedure). Once association is complete, a station may make full use of the access point to communicate with the network. *See id*. Pursuant to the standard, the association is always initiated by the end device or mobile station *and not the access point*. *Id*. Further, at that point, information could be exchanged over the wireless link between the network and end device through the access point. Below is a figure contained in the IEEE 802.11 Standard (2012) illustrating these known transmissions between the end device and access point to connect the end device to the network pursuant to the IEEE 802.11 Standard (2012).

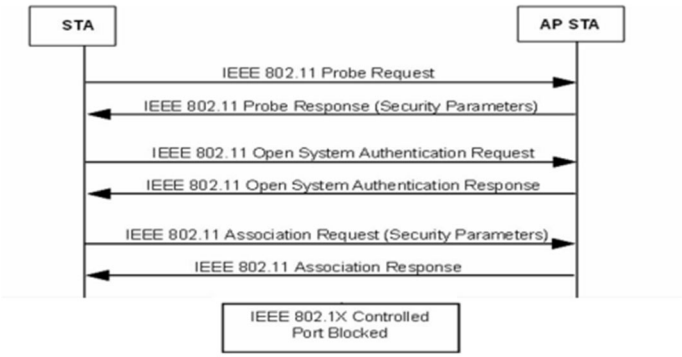


Figure 4-17—Establishing the IEEE 802.11 association

IEEE 802.11 Standard (2012) at 84

By the alleged priority date of the Patents-in-Suit, in connecting to networks through

wireless access points, two issues were well known with known and obvious solutions. The first problem was because when an end device or station actively scanned and sought a suitable access point, it transmitted or broadcast a probe request frame including certain information, as described in the IEEE 802.11 Standard (2012). Thus, it was known to those skilled in the art that access points or rogue access points would receive probe requests and thereby determine the end device or station was nearby based on the information contained in the probe request frame. For example, certain fixed position access points, for example, access points for public networks in as coffee shops, could have known global position system locations. Once that access point received a probe request containing a unique media access control (MAC) address from an end device or station, then based on that unique MAC address, the access point and any device connected to the access point, could determine that the end device was positioned near to the known location of the access point. Thus, by knowing the unique MAC address of the end device and the location of the access point, a third-party connected to the network, e.g., the internet, could determine with reasonable accuracy the location of the specific end device.

The second known issue related to security concerns for end devices connecting wirelessly to networks wherein a rogue access point would mask its identity as a popular and public access point to attempt to trick users and/or end devices or stations into connecting to the rogue access point. Once associated, this connection would then allow the rogue access point to intercept communications intended for the network.

But solutions to both of these issues were well known, obvious, and practiced by those skilled in the art. To resolve the issue of transmitting the original and authentic MAC address in a probe response thereby disclosing the unique end device's information, it was already known to instead transmit alternative MAC addresses in the probe response. Specifically, it was known to

obtain and use alternative or intentionally fake MAC addresses in probe requests to prevent the identification of the unique original MAC address in a general transmission such that a third-party could identify the end device's location information. *See* U.S. Patent Application Publication 2012/0076072 at Abs., ¶[0003], ¶¶[0014]-[0016], ¶¶[0020]-[0021], ¶[0023], ¶[0029], ¶[0031], Fig.4. Further, as an additional step, it was also known and obvious to generate randomized MAC addresses for inclusion in the probe response to prevent third parties from identifying the specific device through utilization of the same alternative MAC address multiple times. *See id*. *T*he relevant IEEE Standard identified a MAC address should be transmitted during the authentication process but did not specify that the original and authentic MAC address need be included.

It was further known that rogue access points impersonating known access points could be thwarted by a pre-authentication or list of known and/or desired access points obtainable by the end device. For example, it was known for the end device to obtain a list or store a list of access points, with relevant information, for use by the end device to determine which access point to connect to in order to either expedite the connection process or avoid potential rogue access points. Information that was known to assist in such a determination would be information indicating access points were pre-authenticated and/or previously connected to the end device. *See, e.g.*, U.S. 9,264,893 at 4:58-62. Alternatively, choosing access points under the control of a known server and therefore known and likely to be secure were also known those of ordinary skill in the art as reasons to select an access point. U.S. Patent Application Publication 2012/0257536 at ¶[0047], [0092], [0094]-[0097].

These and other reasons that the subject matter claimed in the '384 Patent is invalid as obvious are demonstrated in the claim charts attached herein as Appendices A-1 through A-10.

b. The ’005 Patent

Defendants contend that the prior art references identified in Appendices B-1 through B-10 and/or described below anticipate and/or render obvious, alone or in combination, one or more of the Asserted Claims of the ’005 Patent.

TABLE 4

U.S. Patent No. 9,717,005	
Appendix No.	**Reference(s) Name**
B-1	WO 2007/086705 (*Yun*)
B-2	US 2012/0076072 (*Jalfon*)
B-3	US 7,885,639 (*Satish*)
B-4	US 2004/0006642 (*Jang642*)
B-5	US 2003/0177267 (*Orava*)
B-6	US 2007/0211653 (*Mizukoshi*)
B-7	IEEE Standard 802.11 (IEEE 802.11 Standard (2012))
B-8	US 8,824,678 (*Ochikubo*)
B-9	US 8,126,476 (*Vardi*)
B-10	JP 200939513 (*Matsudaira*)

As explained above with respect to the ’384 Patent, it was known and obvious for end devices seeking to connect to wireless networks through an access point to transmit, and be capable of transmitting, a random MAC address distinct from the authentic original MAC address of the end device to the access point in the probe request. In addition, it was known and obvious to use the transmission protocol described in the IEEE Standard from the probe request through

connection with the wireless network. Further, it was known to compare information received from the access point in the probe response to information obtainable by the end device to determine which access point to seek to connect to the network though. The obviousness discussion concerning the ’384 Patent is incorporated herein to the ’005 Patent.

Moreover, it was known and obvious for an end device to further incorporate and be configured to do so, a server to assist in connecting the end device to the wireless network. First, it was known that a server could control and authenticate access points, thereby generating and possessing a list of controlled and authenticated access points. *See, e.g.*, U.S. Patent No. 8.126,476 at 3:27:61, 4:27-28, 10:15-28, 13:10-35. It would have been obvious for one skilled in the art to include a communication process between an end device and such a server to provide the end device with the lists containing authenticated or controlled access points, thereby allowing the end point to compare the probe response information with the information provided by the server to select an access point with a lower risk of being a rogue access point. *See, e.g.*, *id*. at 3:4-6 (“[devices] receive updates about relevant access points from the server and use the information to select and connect to the preferred access point.”), 9:32-38, 11:28-43. In addition, it would have been obvious to one skilled in the art to have the server with a generated list of authenticated access points generate and transmit a randomized MAC address to the end device for its use in the probe request. One skilled in the art would recognize that if the server controlled the access point, the server would also be able to instruct the access point of the randomized MAC address thereby ensuring the probe request is appropriately responded to in a probe response, and subsequently in the authentication process.

c. The ’552 Patent

Defendants contend that the prior art references identified in Appendices C-1 through C-10 and/or described below anticipate and/or render obvious, alone or in combination, one or more of the Asserted Claims of the ’552 Patent.

TABLE 5

U.S. Patent No. 9,961,552	
Appendix No.	**Reference(s) Name**
C-1	WO 2007/086705 (*Yun*)
C-2	US 2012/0076072 (*Jalfon*)
C-3	US 7,885,639 (*Satish*)
C-4	US 2004/0006642 (*Jang642*)
C-5	US 2003/0177267 (*Orava*)
C-6	US 2007/0211653 (*Mizukoshi*)
C-7	IEEE Standard 802.11 (IEEE 802.11 Standard (2012))
C-8	US 8,824,678 (*Ochikubo*)
C-9	US 8,126,476 (*Vardi*)
C-10	JP 200939513 (*Matsudaira*)

As explained above with respect to the ’384 and ’005 Patents, it was known and obvious for end devices seeking to connect to wireless networks through an access point to transmit, and be capable of transmitting, a random MAC address distinct from the authentic original MAC address of the end device to the access point in the probe request. In addition, it was known and obvious to use the transmission protocol described in the IEEE Standard from the probe request

through connection with the wireless network. Further, it was known to compare information received from the access point in the probe response to information obtainable by the end device to determine which access point to seek to connect to the network though. Finally, it was known and obvious to incorporate a centralized server to assist in facilitating the connection between the network and end device through a secure access point. The obviousness discussion concerning the ’384 and ’005 Patents are incorporated herein to the ’552 Patent.

IV. INVALIDITY BASED ON 35 U.S.C. §112 PURSUANT TO P.R. 3-3(d)

Pursuant to P.R. 3-3(d) and based on Plaintiff’s Infringement Contentions, and subject to the Preliminary Statement and Reservation of Rights set out above, Defendants identify grounds upon which it contends that the Asserted Claims are invalid for failure to meet the requirements of 35 U.S.C. § 112.[2] Defendants continue to investigate grounds of invalidity based upon indefiniteness, lack of enablement, inadequate written description, and improper use of Section 112, sixth paragraph.

Although the investigation continues, Defendants believe that all the Asserted Claims are invalid for failure to comply with 35 U.S.C. § 112 for at least the following reasons: (1) the specifications of the Patents-in-Suit lack a written description of the alleged inventions of the Asserted Claims in full, clear, concise, and exact terms as required by 35 U.S.C. § 112, first paragraph; (2) the specifications of the Patents-in-Suit do not enable the Asserted Claims as required by 35 U.S.C. § 112, first paragraph; (3) the Asserted Claims are invalid as indefinite under 35 U.S.C. § 112, second paragraph, because they fail to particularly point out and distinctly

[2] The Patents-in-Suit claim priority to International Patent Application No. PCT/US2012/066306, which was filed November 21, 2012. Therefore, the Patents-in-Suit assert a priority date prior to the effective date of the America Invents Act. Accordingly, Defendants references to relevant sections of 35 U.S.C. are to the pre-AIA version of the statute.

claim the subject matter which the applicants regarded as their alleged invention; and/or (4) the Asserted Claims containing means-plus-function elements pursuant to 35 U.S.C. § 112, sixth paragraph, are indefinite for failing to disclose in the specification the specific structures, materials, or acts that relate to a given means-plus-function term.

A more detailed basis for Defendants' written description, enablement, and/or indefiniteness defenses will be set forth in Defendants' respective expert reports on invalidity, to be served in accordance with the Court's Docket Control Order (D.I. 24), and L.R. CV-26. Defendants have not yet taken any depositions related to these issues. Defendants specifically reserve the right to amend and/or supplement these Preliminary Invalidity Contentions based on a failure to comply with the requirements of 35 U.S.C. § 112, including, for example, based on supplementation or amendments to Plaintiff's Infringement Contentions.

Defendants' contentions that the Asserted Claims are invalid under 35 U.S.C. § 112 are made at least partly in the alternative, and should in no way be seen as admissions (1) as to the proper construction or scope of the claims of the Patents-in-Suit or (2) that any such claims are not anticipated or rendered obvious by the prior art.

a. Lack of Written Description and Enablement Under 35 U.S.C. § 112, ¶1

Written description and enablement are statutory requirements for validity. *See* 35 U.S.C. § 112, first paragraph:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same….

The written description, drawings, and claims in the patent must clearly allow a person of ordinary skill in the art to understand and recognize that the patentee invented what is claimed. *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479 (Fed. Cir. 1998). That is, the patent must

demonstrate by disclosure in the specification to those skilled in the art that, as of the filing date, the named inventors were in possession of what is not asserted to be the claimed invention. *Id*. In this regard, the written description must actually or inherently disclose every claim element. It is not enough to say that undisclosed subject matter would have been obvious or within the normal skill set of a person of ordinary skill.

"[T]he test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). The disclosure of the claimed subject matter must be:

- expressly or necessarily present, *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1159 (Fed. Cir. 1998);
- complete, *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1365, 1572 (Fed. Cir. 1997) ("One shows that one is 'in possession' of the invention by describing the invention, with all its claimed limitations….");
- unambiguous, *Hyatt v. Boone*, 146 F.3d 1348, 1352 (Fed. Cir. 1998);
- specific, *Purdue Pharma L.P. v. F.H. Faulding and Co.*, 230 F.3d 1320, 1322 (Fed. Cir. 2000); and
- as broad as the claim, *Gentry Gallery*, 134 F.3d at 1478-80.

"The appearance of mere indistinct words in a specification or a claim, even an original claim, does not necessarily satisfy" the written description requirement. *Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916 (Fed. Cir. 2004). It is not enough that a claim "reads on" the specification. *Lockwood*, 107 F.3d 1565. Even a claim filed with the original application may

lack written-description support: "[The claims'] principal function, therefore, is to provide notice of the boundaries of the right to exclude and to define limits; it is not to describe the invention, although their original language contributes to the description and in certain cases satisfies it. Claims define and circumscribe, the written description discloses and teaches." *Ariad*, 598 F.3d at 1336, 1347.

The specifications of the Patents-in-Suit fail to satisfy the written description requirement for the Asserted Claims because the alleged inventions claimed therein are not sufficiently described in the specifications of the Patents-in-Suit. Specifically, the Patents-in-Suit fail to satisfy the written description requirement for at least the terms identified below because, based on those terms, the respective specifications of the Patents-in-Suit do not adequately convey to those skilled in the art that the inventors had possession of the claimed subject matter as of the respective filing dates. These Preliminary Invalidity Contentions are based on Defendants' understanding of Plaintiff's interpretation of the Asserted Claims as asserted in the Initial Infringement Contentions. Because compliance with the written description requirement of 35 U.S.C. § 112, first paragraph, depends on the construction of the Asserted Claims—and no claim construction positions have been exchanged, no claim construction order has issued, and no expert discovery has taken place—Defendants' positions on written description are necessarily preliminary at this early stage of the case. Defendants reserve their right to amend or further revise these Preliminary Invalidity Contentions based on further developments, including the Court's claim construction opinion, and discovery in the case. When a phrase is recited in multiple claims, the first instance of that phrase being recited is indicated below; invalidity under § 112, first paragraph, for lack of written description applies to any, all, and each of the claims where the phrase is recited, however.

The Asserted Claims also are invalid for lack of enablement under 35 U.S.C. § 112, first paragraph. The enablement requirement of 35 U.S.C. § 112 requires that the specification describe "the manner and process of making and using [the claimed invention], in such clear and concise, and exact terms are to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use [the claimed invention]." *Id*.

It is well established that enablement requires the specification to teach those in the art to make and use the invention without undue experimentation. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). The determination of what constitutes undue experimentation requires the application of a standard of reasonableness, giving due regard for the nature of the invention and the state of the art. Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing several factual considerations. *Id*.

Factors to be considered in determining whether an Asserted Claim would require undue experimentation include:

(1) the quantity of experimentation necessary,

(2) the among of direction or guidance presented in the specification,

(3) the presence or absence of working examples,

(4) the nature of the invention,

(5) the state of the prior art,

(6) the relative skill of those in the art,

(7) the predictability or unpredictability of the art, and

(8) the breadth of the claims.

Id.

The specification must enable the "full scope" of the claim. Thus, "[t]he enabling

disclosure of the specification [must] be commensurate in scope with the claim under consideration." *Chiron Corp. v. Genentech Inc.*, 363 F.3d 1247, 1253 (Fed. Cir. 2004) (quoting *In re* Hyatt, 705 F.2d 712, 714 (Fed. Cir. 1983)). Enablement is a question of law based on underlying facts. *Wands*, 858 F.2d at 735.

The Patents-in-Suit also fail to satisfy the enablement requirement because the specifications of the Patents-in-Suit do not describe the manner and process of making and using the alleged inventions in the Asserted Claims so as to enable a person of skill in the art to make and use the full scope of the alleged inventions without undue experimentation. Specifically, the specifications of the Patents-in-Suit fail to meet the enablement requirement for at least the terms identified below because, based on those terms, the respective specifications of the Patents-in-Suit do not describe the manner and process of making and using the alleged inventions in the Asserted Claims. These Invalidity Contentions are based on Defendants' understanding of Plaintiff's interpretation of the Asserted Claims as asserted in the Infringement Contentions. Because compliance with the enablement requirement of 35 U.S.C. § 112, first paragraph, depends on the construction of the Asserted Claims—and no claim construction positions have been exchanged, no claim construction order has been issued and no expert discovery has taken place—Defendants' positions on enablement are necessarily preliminary at this early stage of the case. Defendants reserve their right to amend or further revise these Invalidity Contentions based on further developments, including the Court's claim construction opinion, and discovery in the case. When a phrase is recited in multiple claims, the first instance of that phrase being recited is indicated below; invalidity under § 112, first paragraph for lack of enablement applies to any, all, and each of the claims where the phrase is recited, however.

For example:

i. The ’384 Patent

Under at least Plaintiff’s apparent overly broad interpretation of the Asserted Claims, certain Asserted Claims of the ’384 Patent are invalid for lack of written description and is not enabled. For example, the following limitations lack written description support at least under Plaintiff’s overly broad interpretation of the claims:

“fake media access control (MAC) address” / “generating…a media access control (MAC) address for the end device that is distinct from an actual MAC address” / “a process…operable to generate a MAC address for the end device that is distinct from the actual MAC address” (Claims 1, 9, 17)

Plaintiff has asserted Infringement Contentions against Defendants premised on apparent claim interpretations, such as for “fake media access control (MAC) address” without limitation to the generation of the fake device identifier. Specifically, Plaintiff identifies the MAC Randomization Behavior feature of the Android operating system that generates a “randomized MAC address” as constituting the claimed “fake media access control (MAC) address” and MAC address “that is distinct from the actual MAC address.” However, the specification does not provide a written description supportive or consistent with Plaintiff’s Infringement Contentions, nor sufficient to determine that the purported inventors had possession of the Asserted Claims of the ’384 Patent consistent with what is apparently asserted against Defendants in this litigation.

The specification of the ’384 Patent contains no written description of generating, receiving, including, or obtaining a randomized MAC address. Instead, the ’384 Patent states simply that a fake device identifier could be a fake MAC address, without defining a fake MAC address. *See, e.g.*, ’384 Patent at 4:4-6. But it also does not provide any description or teaching of the information included in the identified fake MAC address, or how to generate or obtain the fake MAC address. Although the specification describes the fake device identifier may include

one or more random numbers or one or more random characters, such description is limited to a character by character description rather than a randomized MAC address. Possessing a MAC address including one random number or character is far different than possessing a randomized MAC address.

As stated above, the specification of the ’384 Patent provides no teaching on how to generate a randomized MAC address or use a randomized MAC address in a probe response, the function identified in the specification of the ’384 Patent for the fake device identifier. *See, e.g.*, *id*. Further, the ’384 Patent provides no description of randomizing a MAC address in the context of the Asserted Claims of the ’384 Patent. Indeed, in the context of a probe request, one skilled in the art would understand a randomized MAC address to be separate and distinct even from a MAC address containing one or more random numbers or characters.

One of ordinary skill in the art reviewing the ’384 Patent as of its filing date would readily determine that the named inventors did not have possession of the subject matter of at least claims 1-4, 6-15, 17-20, and 22-24 of the ’384 Patent, as such claims are apparently interpreted in Plaintiff’s Infringement Contentions to cover generating, receiving, obtaining, and transmitting randomized MAC addresses as claimed fake or distinct media access control (MAC) address. In the context of the claims, the fake or distinct MAC address is used to identify the end device to an access point on a network without disclosing the authentic or original MAC address of the device thereby potentially disclosing identifiable end device information. *Id*. at 3:8-23. However, the transmission to the access point must still be sufficient to trigger a probe response from the access point, in accordance with the Asserted Claims of the ’384 Patent. But the specification does not teach that the named inventors possessed more than a fake MAC address that may include on a character by character basis, a random number or a random character that could be included

in a probe response and trigger a probe request. Nothing in the specification demonstrated the named inventors possessed the use or inclusion of a persistent randomized MAC address functioning as a fake device identifier in the context of a probe response. Instead, the only distinction identified for a fake device identifier is that it is not the "original MAC address" of the device (*see cf. id*. at 1:48-52 (describing authentic device identifier as the original MAC address)), which does not always hold true as claim 2 of the '384 Patent specifically demonstrates that the fake MAC address does not have to be distinct from an actual original MAC address. Thus, a fully randomized MAC address extends beyond the scope of the invention possessed by the alleged named inventors.

"authentic device identifier" (Claims 1, 9, 20)

The '384 Patent specification does not adequately convey to those skilled in the art that the inventors had possession of an "authentic device identifier" as of the filing date of the '005 Patent, at least in a manner consistent with Plaintiff's infringement Contentions. The claims specify that a connection request including an authentic device identifier be transmitted to the access point. *See, e.g.*, *id*. at Claims 1, 9, 20. Plaintiff's Infringement Contentions allege that the accused products use of a persistent randomized MAC address for connecting to the access point meets this limitation.

According to Plaintiff's Infringement Contentions, the persistent randomized MAC address is generated by default when the MAC randomization feature is enabled. Hence, the persistent randomization MAC address is not related directly to the manufacturer's original MAC address or even a fixed address, but is only one that is generated, and can be reset or modified if desired.

In contrast to Plaintiff's Infringement Contentions, the '384 Patent specification only

describes an authentic device identifier as "an original MAC address," which would be understood to be the manufacturer's provided original MAC address. *Id*. at 3:26-28; 4:39-44; 5:43-46, 6:58-63. The specification does not provide an explicit function for the "original MAC address," but describes the problem being solved as preventing disclosure of the device identifier while sending out a probe request that includes the device identifier. *Id*. at 3:8-23. Such information, according to the '384 Specification, can be used to identify the present location of the end device. Thus, one skilled in the art would understand the inventors described and possessed an authentic device identifier as the original immutable MAC address assigned by the manufacturer that cannot be reset or changed, thereby complying with the *See* IEEE 802.11 Standard for wireless communication and being information that could be used to identify the location of the specific end device as it is tied to the end device.

One skilled in the art would not understand, in view of the consistent and exclusive disclosure of the authentic device identifier being the "original MAC address," that the named inventors possessed an authentic device identifier encapsulating a generated persistent randomized MAC address that can be reset. Therefore, to the extent that the claims are being construed in such a matter to encapsulate a generated persistent randomized MAC address as the claimed authentic device identifier, one skilled in the art would not understand the named inventors to be in possession of such a changing MAC address functioning as an authentic device identifier.

ii. <u>The '005 Patent</u>

Each Asserted Claim of the '005 Patent is invalid for lack of written description and/or is not enabled. For example, the following limitations lack written description support under Petitioner's overly broad interpretation of the claims:

"fake device identifier" / "the fake device identifier includes at least one of a random number or a random character" (Claims 1, 4, 8, 9, 14)

Plaintiff has asserted Infringement Contentions against Defendants premised on apparent claim interpretations, such as for "fake device identifier," without limitation to the component structure of a fake device identifier. Specifically, Plaintiff identifies the persistent randomization feature of the Android operating system as generating a "randomized MAC address" as constituting both the claimed "fake device identifier" and the "fake device identifier includes at least one random number or random character." However, the specification does not provide a written description supportive or consistent with Plaintiff's Infringement Contentions, nor sufficient to determine that the purported inventors had possession of the Asserted Claims of the '005 Patent consistent with what is apparently asserted against Defendants in this litigation.

The specification of the '005 Patent contains no written description of generating, receiving, including, or obtaining a randomized MAC address. Instead, the '005 Patent discusses that exemplary embodiment of a fake device identifier could be a fake MAC address. *See, e.g.*, '005 Patent at 3:58-63. Then leaving the fake MAC address embodiment, the '005 Patent further describes that the fake device identifier may include one or more random numbers or one or more random characters. *See id*. Each time the '005 Patent discusses the fake device identifier and the fake MAC address; this distinction holds true. *See id*. at 3:61-63; 5:5-11; 6:9-13. Nothing in the specification expands the scope of the written description to encapsulate a randomized MAC address, as opposed to a fake MAC address including one or more random numbers or characters.

Indeed, the specification of the '005 Patent provides no teaching on how to generate a randomized MAC address or use a randomized MAC address in a probe response, the function identified in the specification of the '005 Patent for the fake device identifier. *See, e.g.*, *id*. at 1:36-38. Further, the '005 Patent provides no description of randomizing a MAC address in the

context of the Asserted Claims of the ’005 Patent. Indeed, in the context of a probe request, one skilled in the art would understand a randomized MAC address to be separate and distinct from a MAC address containing one or more random numbers or characters, especially given the specification of the ’005 Patent fails to describe further modification of a fake device identifier than inclusion of a random number or random character.

One of ordinary skill in the art reviewing the ’005 Patent as of its filing date would readily ascertain that the named inventors did not have possession of the subject matter of at least claims 1-5 and 7-17 of the ’005 Patent, as such claims are apparently interpreted in Plaintiff’s Infringement Contentions to cover generating, receiving, obtaining, and transmitting randomized MAC addresses as claimed, “fake device identifiers.” In the context of the claims, the fake device identifier is used to identify the end device to an access point on a network without disclosing the authentic or original MAC address of the device thereby potentially disclosing identifiable end device information. *See, e.g.*, *id*. at 2:64-3:21. However, the transmission to the access point must still be sufficient to trigger a probe response from the access point, in accordance with the Asserted Claims of the ’005 Patent. But the specification does not teach that the named inventors possessed more than a fake MAC address that included a random number or a random character that could be included in a probe response and trigger a probe request. Nothing in the specification demonstrated the named inventors possessed the use or inclusion of a persistent randomized MAC address functioning as a fake device identifier in the context of a probe response. Instead, the only distinction identified for a fake device identifier is that it is not the “original MAC address” of the device. *See cf. id*. at 1:48-52 (describing authentic device identifier as the original MAC address).

Therefore, a person of ordinary skill in the art would number understand from the ’005

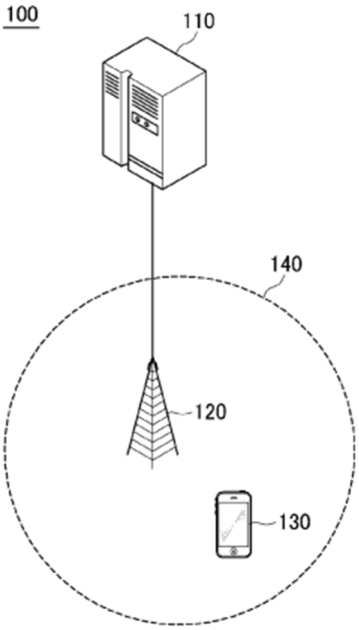
Patent that the inventors had possession of subject matter, consistent with Plaintiff's apparent interpretation of claims 1-5 and 7-17, to cover generating, receiving, obtaining, and transmitting fake device identifiers that were randomized MAC addresses.

"mobile operating server" (Claims 1, 8, 14)

The '005 Patent specification does not adequately convey to those skilled in the art that the inventors had possession of a "mobile operating server" as of the filing date of the '005 Patent, at least in a manner consistent with Plaintiff's infringement Contentions. The claims specify that the end device receives or obtains a fake device identifier from the mobile operating server. *See, e.g.*, *id*. at Claims 1, 8. Plaintiff's Infringement Contentions, however, identify the end device as the entire Accused Product and identifies the operating system and/or central processing unit and associated memory for storing and executing the operating system and associated data contained within the Accused Product as the mobile operating system. But the '005 Patent specification does not provide any written description to those skilled in the art of a mobile operating system contained within the end device. Instead, the specification depicts and describes the mobile operating server as external to the end device and by its function, transmitting information to the end device. *See, e.g.*, *id*. at 3:38-40 (discussing and showing the mobile operating server 110 as distinct from the end device 130 in the context of FIG.1 (reproduced below)). Each time, the specification describes the mobile operating server, it is distinct from the end device. *See, e.g.*, *id*. at 3:38-40, 3:66-4:3, 4:26-29. Indeed, this distinction is further evidenced by the disclosed function of the mobile operating server, as both transmitting the information to the end device and controlling the access point. *See infra* (discussing lack of written description of "the access point is controlled by the mobile operating server"). The specification of the '005 Patent does not teach one skilled in the art to make and use a device or a process wherein the mobile operating server is

contained within the end device and capable of both transmitting to the end device fake device identifier information and controlling the access point, as one skilled in the art would understand. Therefore, the specification of the ’005 Patent does not provide written description of the mobile operating server being located within the end device and a person skilled in the art would not understand the named inventors as possessing a mobile operating server within the end device. Accordingly, claims 1-5 and 7-17 are invalid for lack of written description.

FIG. 1



“the access point is controlled by the mobile operating server” (Claims 1, 8, 14)

Further, the ’005 Patent specification does not adequately convey to those skilled in the art that the inventors had possession of “the access point is controlled by the mobile operating server” as of the filing date of the ’005 Patent, at least in a manner consistent with Plaintiff’s Infringement Contentions. The claims of the ’005 Patent require that an access point be determined to be an authenticated access point based at least in part on the “access point [being]

controlled by a mobile operating server." But the specification of the '005 Patent provides no description to teach one of ordinary skill how to determine an access point is being controlled by a mobile operating system, or, in conjunction with the remainder of the claims, how an access point is being controlled by a mobile operating system within the end device. Indeed, as shown in FIG. 1 of the specification (reproduced above), the mobile operating system 110 is linked directly to the access point 120 and external to the network area 140. Thus, the specification only teaches a mobile operating system 110 having a direct and independent link to access point 120 that is external to the end device 130.

Indeed, in the specification, when discussing the access point being controlled by the mobile operating system provides no explanation concerning what constitutes control of the access point. No objective metrics have been provided in the specification, and one skilled in the art would have no guidance on the specification. But one skilled in the art may understand control of an access point as determining whether the access point accepts a connection from an end device to allow access to the network. The '005 Specification does not describe to one skilled in the art a component within the end device being able to make that determination for the access point, e.g., controlling the access point. Instead, as shown in FIG. 1, the specification of the '005 Patent only describes an independent and direct link between the mobile operating server and the access point external to the end device 130, which would teach one skilled in the art that the server could control whether the external end device could connect to the wireless network through the access point. Therefore, one skilled in the art would not understand in the context of the claims that the inventors possessed "the access point is controlled by the mobile operating server" in the context of claims 1-5 and 7-17 of the '005 Patent.

"authentic device identifier" (Claims 1, 5, 8, 14, 16)

The '005 Patent shares a specification with the '384 Patent, and therefore, as Plaintiff construed the term in its Infringement Contentions, the named inventors did not have possession of "authentic device identifier" as recited in the claims as they did not have possession of the same limitation with respect to the '384 Patent. The "authentic device identifier" in the '005 Patent's claims serves the same function as in the '384 Patent's claims, and similarly, Plaintiff relies upon the same component and process step in its Infringement Contentions as it does in Infringement Contentions with respect to the '384 Patent. Thus, for the reasons articulated with respect to "authentic device identifier" regarding the '384 Patent, the '005 Patent lacks written description support for the claim term "authentic device identifier."

iii. The '552 Patent

Each Asserted Claim of the '552 Patent is invalid for lack of written description and/or is not enabled. For example, the following limitations lack written description support under Petitioner's overly broad interpretation of the claims:

"fake device identifier" / "the fake device identifier includes at least one or more random numbers or a random characters" (Claims 10-11, 13-18, 20, 24-25, and 28)

The '552 Patent shares a specification with the '005 Patent, and therefore, for the same reasons expressed above with respect to the '005 Patent (*see supra* §IV.A.ii), the specification of the '552 Patent fails to demonstrate the named inventors of the '552 Patent were in possession of the claim limitations "fake device identifier" or "the fake device identifier includes at least one or more random numbers or random characters" as construed in Plaintiff's Infringement Contentions to allegedly cover randomized MAC address.

"generating a collection that includes at least one of one or more random numbers or one or more random characters to provide a fake device identifier" / "configuring the collection as a fake media access control (MAC) address" (Claims 21, 22)

The '552 Patent similarly lacks written description to establish as of the priority date of the '552 Patent, that the named inventors were in possession of "generating a collection that includes at least one or more random numbers or one or more random characters to provide a fake device identifier. As discussed above with respect to the '005 Patent specification, the '552 Patent's specification exclusively describes the "fake device identifier" as the single embodiment of a "fake MAC address" with the only function to be included in a probe request frame to an access point. *See, e.g.*, '552 Patent specification at 3:65-4:3, 5:12-18, 6:16-20; 6:32-34; 7:16-19; 3:4-22. At no point does the specification describe or teach the broad step of generating a collection that includes at least one or more random numbers or one or more random characters to provide a fake device identifier." Instead, the specification is limited to describing, beyond the fake MAC address, the fake device identifier can include one or more random number and/or random character. *Id*.

One skilled in the art would understand generating an entire collection the includes at least one random number or one random character extends beyond the description and teaching contained within the specification of the '552 Patent, at least because the '552 Patent's specification does not teach one skilled in the art how to make or use a generated collection of information in a probe request. Thus, the specification lacks written description support for the limitation "generating a collection that includes at least one or more random numbers or one or more random characters to provide a fake device identifier."

In addition, the specification fails to provide written support for "configuring the collection as a fake media access control (MAC) address" for the same reasons as described above

with respect to "fake device identifier."

"server" (Claims 10-11, 13-18, 20-22, 24-25, 28)

The '552 Patent shares a specification with the '005 Patent, and therefore, as Plaintiff construed the term in Plaintiff's Infringement Contentions, the named inventors did not have possession of a "server" as recited in the claims as they did not have possession of a "mobile operating server" with respect to the '005 Patent. The "server" in the '552 Patent's claims serves the same function as in the '005 Patent's claims, and similarly, Plaintiff relies upon the same component and process step in its Infringement Contentions as it does in Infringement Contentions with respect to the '005 Patent. Thus, for the reasons articulated with respect to "mobile operating server" regarding the '005 Patent, the '552 Patent lacks written description support for the claim term "server."

"the access points controlled by the server" (Claims 10-11, 13-18, 20-22, 24-25, 28)

The '552 Patent shares a specification with the '005 Patent, and therefore, as Plaintiff construed the term in its Infringement Contentions, the named inventors did not have possession of "the access points controlled by the server" as recited in the claims as they did not have possession of the same limitation with respect to the '005 Patent. The "access points controlled by the server" in the '552 Patent's claims serves the same function as in the '005 Patent's claims, and similarly, Plaintiff relies upon the same accessed component and process step in its Infringement Contentions as it does in Infringement Contentions with respect to the '005 Patent. Thus, for the reasons articulated with respect to "the access points controlled by the server" regarding the '005 Patent, the '552 Patent lacks written description support for the claim term "server."

"authentic device identifier" (Claims 10-11, 13-18, 20-22, 24-25, 28)

The '552 Patent shares a specification with the '005 Patent, and therefore, as Plaintiff construed the term in its Infringement Contentions, the named inventors did not have possession of "authenticated device identifier" as recited in the claims as they did not have possession of the same limitation with respect to the '005 Patent. The "authentic device identifier" in the '552 Patent's claims serves the same function as in the '005 Patent's claims, and similarly, Plaintiff relies upon the same accused component and process step in its Infringement Contentions as it does in Infringement Contentions with respect to the '005 Patent. Thus, for the reasons articulated with respect to "authentic device identifier" regarding the '005 Patent, the '552 Patent lacks written description support for the claim term "authentic device identifier."

b. Indefiniteness Under 35 U.S.C. § 112, ¶2

The Asserted Claims are invalid as indefinite because they fail to inform those skilled in the art about the scope of the alleged invention with reasonable certainty. These Invalidity Contentions are based on Defendants' understanding of Plaintiff's interpretation of the Asserted Claims as asserted in the Infringement Contentions. Because the determination of whether the claims are indefinite under 35 U.S.C. § 112, second paragraph, depends on the construction of the Asserted Claims—and no claim construction positions have been exchanged, no claim construction order has been issued and no expert discovery has taken place—Defendants' positions on indefiniteness are necessarily preliminary at this early stage of the case. Defendants reserve their right to amend or further revise these Invalidity Contentions based on further developments, including the Court's claim construction opinion, and discovery in the case. When a phrase is recited in multiple claims, the first instance of that phrase being recited is indicated below; invalidity under § 112, second paragraph for indefiniteness applies to any, all, and each of

the claims where the phrase is recited, however.

A patent is invalid for indefiniteness if its claims fail to inform, with *reasonable certainty*, those skilled in the art about the scope of the claimed invention. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2015). The mere ability to articulate a definition supported by the specification does not make a claim definite. "Even if a claim term's definition can be reduced to words, the claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into a meaningfully precise claim scope." *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1251 (Fed. Cir. 2008). In addition, lack of proper "antecedent basis" results in a "zone of uncertainty" as to construction, and renders the claim insolubly ambiguous. *See Adv. Tech. Incubator, Inc. v. Sharp Corp.,* No. 2:07-CV-468, 2009 WL 4403314, at *27 (E.D. Tex. Jun. 26, 2009); *Messerschmidt v. US*, 29 Fed. Cl. 1, 42-44 (Fed. Cl.), *aff'd*, 14 F.3d 613 (Fed. Cir. 2003); *Gardner v. Toyota Motor Corp.*, No. C 08-632 RAJ, 2009 WL 4110305, at *4-5 (W.D. Wash. Nov. 19, 2009)*; Parker-Hannifin Corp. v. Baldwin Filters, Inc.*, No. 1:07-CV-1709, 2008 WL 5732941, at *8-9 (N.D. Ohio July 3, 2008). Indefiniteness is a question of law. *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1378 (Fed. Cir. 1999).

The Patents-in-Suit fail to particularly point out and distinctly claim the subject matter of the Asserted Claims in compliance with 35 U.S.C. § 112, second paragraph. In particular, at least the following terms/phrases of the Asserted Claims are indefinite and thus invalid:

i. <u>The '384 Patent</u>

The Asserted Claims of the '384 Patent are invalid as indefinite based on at least the following terms:

"fake media access control (MAC) address" (Claim 1)

One of ordinary skill in the art cannot reasonably ascertain the scope of this phrase. The

’384 Patent specification provides no definitive guidance regarding the relative term “fake.” While the specification describes the fake device identifier, which may include a fake MAC address, as including on or more random numbers or random characters, nothing in the specification identifies the scope of what constitutes a fake media access control (MAC) address or provides an objective guidance as to an authentic MAC address. Further, claim 2 of the ’384 Patent, which depends from claim 1, specifically identifies that the fake MAC address is distinct from an “actual original MAC address,” and therefore implies claim 1 is broad enough to cover embodiments where the fake MAC address is not distinct from the actual original MAC address. Therefore, a POSA would not be able to reasonably ascertain the scope of “fake media access control (MAC) address, as used in the context of the claims.

“the access point determined to be the authenticated access point” (Claim 1)

It is unclear what this phrase means in the context of claim 1 of the ’384 Patent. This phrase lacks antecedent basis, and therefore, leaves a person skilled in the art uncertain as to what exactly is being referred to by “the access point determined to be the authenticated access point.” It is not reasonably ascertainable to one skilled in the art whether this limitation is referring to the access point previously recited in the claim, or another access point that had been determined to be an authenticated access point.

“the access point was connected with the end device previous to…” / “if the device was previously connected to the at least one access point” (Claims 1, 13, 17)

One skilled in the art could not reasonably ascertain the scope of this phrase in order to determine infringement. The specification does not define what “connected with” or “connected to” means in the context of an end device connecting with an access point with respect to the claim or the specification of the patent. *See, e.g.,* ’384 Patent at 3:38-41; 4:54-61. Thus, one skilled in art would not be able to determine a specific connection required for infringement of the patent.

Specifically, the ’384 Patent does not differentiate between different phases of the process to connect to the network through the access point, which include multiple transmissions in both directions between the end device and the access point. For instance, although connection between a network and an end point requires authentication and association with an access point, the access point and the end device transmit back and forth in the process of establishing a connection between the end device and network. One skilled in the art would not reasonably ascertain at what time the end device connects with or connects to the access point to correspond to “the access point was connected with the end device previous to…” or “if the device was previously connected to the at least one access point.”

“connection request” (Claims 1, 9, 20)

As explained above with respect to “the access point was connected with the end device previous to…,” one skilled in the art would not be able to reasonably ascertain the communication to an access point that constitutes a “connection request.” The specification only details “connection request” as a transmission containing an authentic device identifier and occurring before the end device connects to the wireless local area network, and also that it may contain an authentication request. *See, e.g.,* ’384 Patent at 3:38-41; 4:54-61. Therefore, one skilled in the art is not reasonably certain whether in the context of the ’384 Patent the claimed “connection request” is limited to the authentication request or whether it be other transmission elements containing an authentic device identifier. Hence, one skilled in the art would not understand whether a specific communication would be practicing this limitation.

“authentic device identifier” (Claim 1, 9, 20)

It is unclear what the phrase “authentic device identifier” means in the context of the ’384 Patent, generally for the same reason one skilled in the art would be unclear as to “fake device

identifier." First, this phrase uses the relative term "authentic," but does not provide any specific quality or requirement for a device identifier to be "authentic" in the context of the claims or specification or "authentic" with respect to any particular component. The '384 Patent describes as an embodiment of an authentic device identifier which may be "an original MAC address" but explicitly does not limit the authentic device identifier to that embodiment. *See id*. at 4:52-57. Hence, one skilled in the art would not know the scope that constitutes an authentic device identifier, as used in the context of the claims. For example, as described above, the specification allegedly teaches that even a fake MAC address can be an actual original MAC address. *See, e.g.*, *id*. at Claims 1, 2 (differentiating claims 1 from 2). In addition, the specification fails to identify any particular component to which the authentic device identifier is relatively authentic to.

"authenticated access point" (Claims 1, 9, 17)

It is unclear what the phrase "authenticated access point" means in the context of the claims of the '384 Patent. In the field of wireless communications, one skilled in the art would understand that connection to a wireless network through an access point requires an authentication transmission and approval. The specification, however, only describes examples of an authenticated access point based on similarly ambiguous phrases; specifically, that information indicates that an access point was previously connected to the end device and/or that the access point is controlled by the server. *See, e.g.*, *id*. at 4:39-42. These two specific examples provided in the specification could be the result of an end device previously exchanging an authentication transmission and approval process with the access point or it may be unrelated. Therefore, one skilled in the art would not be able to determine whether an access point is an "authenticated access point" with reasonable certainty in view of the claims and specification.

"wherein information in the probe request is insufficient to identify the end device, so as to prevent leakage of present location information of the end device to non-authenticated access points" (Claims 3, 10, 24)

One skilled in the art would not be able to ascertain with reasonable certainty the scope of this phrase. The specification describes that present location information of the end device can be exposed to some access points if a probe request is sent. However, the process of transmitting a probe request to multiple access points is sufficient to provide location information of the end device to non-authenticated access points, regardless of whether, for example, a fake or actual originally MAC address is included in the probe request. Specifically, the act of sending a probe request allows non-authenticated access points to obtain present location information of the transmitting end device simply by receiving a transmission. Hence, this claim phrase is vague and unclear to once skilled in the art.

ii. The '005 Patent

The Asserted Claims of the '005 Patent are invalid as indefinite based on at least the following terms:

"fake device identifier" (Claims 1, 8, 14)

One of ordinary skill in the art cannot reasonably ascertain the scope of this phrase. The '005 Patent specification provides no definitive guidance. The specification only describes a fake device identifier including one or both of one or more random numbers or random characters. '005 Patent at 3:58-63. As an embodiment, the fake device identifier can be a "fake MAC address"; however, the specification provides no guidance to the form or structure of the fake device identifier beyond its functionality. *Id*. For, example, the specification only describes that the fake device identifier can be transmitted from a mobile operating server and is included in a probe request. Therefore, one skilled in the art has no guidance to the scope of this claim limitation

other than it must be wirelessly transmissible and included in the probe request. Although the specification does not distinguish, the specification describes an authentic device identifier (discussed *infra*), which may or may not be the same as the "fake device identifier" (*see, e.g.*, '384 Patent at Claims 1 and 2 (using a dependent claim to distinguish fake device identifier and real device identifier thereby implying they may be the same in the independent claim)). Hence, one skilled in the art cannot reasonable ascertain what constitutes a "fake device identifier" in the context of the claims.

"mobile operating server" (Claims 1, 8, 14)

It is unclear what the phrase "mobile operating server" means in the context of the claims of the '005 Patent. The term is not defined in the specification, except by its functionality. The mobile operating serve can provide an authenticated access point list to an end device (*id*. at 4:14-17), control an access point (*id*. at 3:40-41), or provide end device with a fake device identifier (*id*. at 3:67-4:1). The specification further only illustrates the "mobile operating server" as a fixed server icon. *See id*. at FIG. 1. Thus, a person skilled in the art would not understand the scope of "mobile operating server" in the context of whether it is required to be "mobile" or fixed.

"the fake device identifier for the end device" (Claims 1, 14)

This phrase lacks proper antecedent basis. The claim does not previously refer to any fake device identifier for the end device; nor is the term defined in the specification. The claims identify that the end device receives a fake device identifier, but nothing in the claim or the specification specifically identifies that the fake device identifier received from the mobile operating server is the same as the fake device identifier for the end device, especially given that the end device is receiving it from another entity. As such, the claim fails to inform those skilled in the art about the scope of the alleged invention with any reasonable certainty.

"the access point is controlled by the mobile operating server" (Claims 1, 8, 14)

It is not reasonably certain to the person of ordinary skill what the term "controlled by the mobile operating server" means in this context, particularly with regard to the access point being controlled by the mobile operating server. The specification provides no clear delineation or guidance on the scope of control, the timing of control, or the function of controlling the access point. Thus, one skilled in the art is left guessing as to the information that could indicate that the access point is controlled by the mobile operating system, or how the invention could determine an authenticated access point based in part on information indicating the access point is controlled by the mobile operating server.

"the access point was connected with the end device previous…" (Claim 1, 8, 14)

One skilled in the art could not reasonably ascertain the scope of this phrase in order for there to be infringement. The specification does not define what "connected with" means in the context of the claim or the context of the patent. *See, e.g., id*. at 4:26-29. Thus, one skilled in art would not determine a specific level of connection between the access point and the end device that is required for infringement of the patent. Specifically, the '005 Patent does not differentiate between different phases of the process to gain access to a wireless network between the end device and the access point. For instance, although connection and access between a network and an end point requires authentication and association through an access point, the access point and the end device transmit back and forth many times in the process of establishing a connection between the end device and network. One skilled in the art would not reasonably ascertain which transmission between the access point and end device would be sufficient in the context of the claimed phrase to justify an access point being considered an authenticated access point.

"connection request" (Claims 1, 8, 14)

As similarly explained above with respect to "the access point was connected with the end device previously…", one skilled in the art would not be able to reasonably ascertain the transmission to an access point that constitutes a "connection request." The specification only details "connection request" as a transmission containing an authentic device identifier and occurring before the end device connects to the wireless local area network, and that it may contain an association request. *See, e.g., id*. at 3:25-30; 4:44-46. Therefore, one skilled in the art is not reasonably certain whether in the context of the '005 Patent the claimed "connection request" is limited to the authentication request or whether it may be other transmissions containing an authentic device identifier. Hence, one skilled in the art would not understand whether a specific communication would be practicing this limitation.

"authenticated access point" (Claims 1, 8, 14)

It is unclear what the phrase "authenticated access point" means in the context of the claims of the '005 Patent. In the field of wireless communications, one skilled in the art would understand that connection to a wireless network through an access point requires an authentication transmission and approval. The specification, however, only describes examples of an authenticated access point based on similarly ambiguous phrases; specifically, that information indicates that an access point was previously connected to the end device and/or that the access point is controlled by the server. These two specific examples provided in the specification could be the result of an end device previously exchanging an authentication transmission and approval process with the access point or it may be unrelated. Therefore, one skilled in the art would not be able to determine whether an access point is an "authenticated access point" with reasonable certainty in view of the claims and specification.

"authentic device identifier" (Claim 1, 8, 14)

It is unclear what the phrase "authentic device identifier" means in the context of the '005 Patent, generally for the same reason one skilled in the art would be unclear as to "fake device identifier." First, this phrase uses the relative term authentic, but does not provide any specific quality or requirement for a device identifier to be "authentic" in the context of the claims or specification. The '005 Patent describes as an embodiment of an authentic device identifier which may be "an original MAC address", but explicitly does not limit the authentic device identifier to that embodiment or identify a specific component of a device that the phrase corresponds to. *See id*. at 4:39-44. Hence, one skilled in the art would not know the scope of what constitutes an authentic device identifier, as used in the context of the claims. For example, as described above, the specification allegedly teaches that the authentic device identifier can be the same as the fake device identifier. *See, e.g.*, '384 Patent at Claims 1, 2.

iii. <u>The '552 Patent</u>

The Asserted Claims of the '552 Patent are invalid as indefinite based on at least the following terms:

"access points that are controlled by the server" (Claims 10, 15, 21, 24)

The phrase "access points that are controlled by the server" is recited in the claims in the same context as used in the '005 Patent, and described in the specification in the same way, except to the except the '005 Patent recites "mobile operating server" while the '552 Patent recites "server," although both claim terms are describes in the same manner in the specifications. Hence, for the same reasons delineated above with respect to the similar phrase, one skilled in the art would not have reasonable certainty as to the scope of the phrase "access points that are controlled by the server."

"fake device identifier" (Claims 10, 15, 21, 24)

The claim phrase "fake device identifier" is used in the specification and claims of the '552 Patent in a similar manner as in the '005 Patent; and therefore, for the same reasons described above, one of ordinary skill in the art cannot reasonably ascertain the scope of this phrase in the context of the '552 Patent.

"authenticated access point" (Claim 10, 15, 21, 24)

For the reasons expressed above in the context of the '005 Patent, it is equally unclear to one skilled in the art the meaning of "authenticated access point" in the context of the '552 Patent. In the field of wireless communications, one skilled in the art would understand authentication as a process step towards accessing a wireless network through an access point. The specification of the '552 Patent, as with the '005 Patent, only describes examples of an authenticated access point based on other ambiguous phrases: information indicates that an access point was previously connected to the end device, and/or that the access point is controlled by the server. Neither embodiment necessarily requires prior exchanging of an authentication transmission and approval. Hence, a person skilled in the art would not understand with reasonable certainty the scope of an "authenticated access point" to understand whether infringement is occurring.

"connection request" (Claims 10, 15, 21, 24)

As explained above with respect to "connection request", one skilled in the art would not be able to reasonably ascertain the communication and/or transmission to an access point that constitutes the claimed connection request connection request. One skilled in the art understands that access to the network through an access point requires numerous transmissions between the end device and the access point to eventually result in access to the network. Thus, as explained above, one skilled in the art would not understand with reasonable certainty which transmission

constitutes a connection requestion and when the ’552 Patent considered a connection to occur.

“authentic device identifier” (Claims 10, 15, 21, 24)

It is unclear what the phrase “authentic device identifier” means in the context of the ’552 Patent, for the same reason one skilled in the art would be unclear as to “fake device identifier” and “authentic device identifier” in the ’005 Patent. Therefore, for the same reasons one skilled in the art would not be able to reasonably ascertain the scope of authentic device identifier.

“fake media access control (MAC) address” (Claims 11, 16, 22, 25)

It is unclear what the phrase “fake media access control (MAC) address” means in the context of the claims and the ’552 Patent. This phrase is indefinite for at least the same reasons discussed above regarding fake device identifier. Moreover, the specification of the ’552 Patent does not define a fake MAC address (*see, e.g.*, ’552 Patent at 3:65-67; 5:12-15; 6:16-18; 6:32-33) beyond being an embodiment of the phrase “fake device identifier”, which similarly includes the relative term “fake.” But the specification never provides a relative differentiation of “fake” versus “authentic”, for example, by allegedly supporting embodiments where the fake device identifier is the same as the authentic device identifier and failing to tie the relative term “fake” to any specific component. *See, e.g.*, ’384 Patent at Claims 1 and 2 (providing a dependent claim embodiment where the fake MAC address is distinct from “an actual original MAC address”). Therefore, one skilled in the art would not understand with reasonable certainty the scope of this phrase in the context of the ’552 Patent.

“determining whether the at least one access point was previously connected with the device” (Claim 18)

One skilled in the art could not reasonably ascertain the scope of this phrase in the context of the ’552 Patent for the same reason one skilled in the art would not have been able to reasonably ascertain the scope of “the access point was connected with the end device previous…” in the

context of the ’005 Patent. As explained above with respect to the ’005 Patent, the specification fails to delineate objective criteria defining “connected with” the end device and what number of transmissions between the end device and the access point identifies connected with. Specifically, an end device connects with a network through an access point, and hence, one skilled in the art is left uncertain as to the present claim language.

c. Indefiniteness for Lack of Structure Under 35 U.S.C. § 112, ¶¶2, 6

The Asserted Claims are indefinite because the specifications of the Asserted Patents fail to disclose a specific structure for performing the functions recited in the Asserted Claims. These Invalidity Contentions are based on Defendants’ understanding of Plaintiff’s interpretation of the Asserted Claims as set forth in its Infringement Contentions. Because the determination of whether claims are indefinite under 35 U.S.C. §§ 112, sixth paragraph and second paragraph, depends on the construction of the Asserted Claims—and no claim construction positions have been exchanged, no claim construction order has issued, and no expert discovery has taken place—Defendants’ position on indefiniteness are necessarily preliminary at this early stage of the case. Defendants reserve their right to amend or further revise these Preliminary Invalidity Contentions based on further developments, including the Court’s claim construction opinion, and discovery in this case. When a phrase is recited in multiple claims, the first instance of that phrase being recited is indicated below; invalidity under §§ 112, second and sixth paragraphs, for indefiniteness applies to any, all, and each of claims where the phrase is recited, however.

i. <u>The ’384 Patent</u>

The claims of the ’384 Patent invoke 35 U.S.C. §°112, sixth paragraph, by reciting generic placeholders performing functions without the specification describing sufficient structure corresponding to the function, as identified below:

"generating, by the end device, a fake media access control (MAC) address for the end device" (Claims 1, 9) / "wherein generating the fake MAC address includes generating the fake MAC address form one or more characters that are selected randomly" (Claims 4, 11) / "a processor…operable to generate a MAC address for the end device that is distinct from the actual MAC address" (Claim 17) / "wherein the processor is operable to generate the MAC address from one or more characters that are selected randomly" (Claim 19)

The '384 Patent specification fails to disclose and adequately link specific structure for performing the recited function of generating a MAC address that is distinct from an actual MAC address. The specification fails to provide or identify an algorithm or process by which a fake MAC address is generated by the process that is distinct from the actual MAC address. Here, the invocation by the alleged named inventors of a general process to perform the specific function of generating a fake MAC address distinct from an actual MAC address, without further description of an algorithm or procedure to generate the MAC address, renders the claim indefinite. *See Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

ii. The '552 Patent

Claims 15-18 and 20-22 of the '552 Patent invokes 35 U.S.C. §°112, sixth paragraph, by reciting generic placeholders performing functions without the specification describing sufficient structure corresponding to the function, as identified below:

"generating a fake device identifier for the device, wherein the fake device identifier includes at least one of one or more random numbers or one or more random characters" (Claim 15) / "wherein the generating the fake device identifier includes generating a fake media access control (MAC) address" (Claim 16) / "generating a collection that includes at least one of one or more random numbers or one or more random characters to provide a fake device identifier for the device to falsely identify the device in a probe request frame" (Claim 21) / "the generating the collection that includes the at least one of one or more random numbers or one or more random characters comprises configuring the collection as a fake media access control (MAC) address" (Claim 22)

The '552 Patent specification fails to disclose and adequately link specific structure for performing the recited function of generating a fake MAC address or a collection that provides a

a fake device identifier to falsely identify a device in a probe request. The specification fails to provide or identify an algorithm or process by which a fake MAC address or random collection is generated by the process that is distinct from the actual MAC address. Here, the invocation by the alleged named inventors of a general process to perform the specific function of generating a fake MAC address distinct from an actual MAC address, without further description of an algorithm or procedure to generate the MAC address, renders the claim indefinite. *See Aristocrat Techs. Austl. Pty Ltd.*, 521 F.3d at 1333.

V. Eligibility Contentions: Invalidity Based on 35 U.S.C. §101 Pursuant to Standing Order Regarding Subject Matter Eligibility Contentions

Pursuant to Standing Order Regarding Subject Matter Eligibility Contentions, and subject to the Preliminary Statement and Reservation of Rights set out above, Defendants identify grounds upon which it contends that the Asserted Claims are invalid for failure to meet the requirements of 35 U.S.C. §101.

As identified below, the Asserted Claims are invalid for failing to recite patent-eligible subject matter under 35 U.S.C. § 101. Generally, these claims are drawn towards connecting to Wi-Fi access points in a way that purportedly improves the security of the end device. Particularly, Claim 1 of the ’005 Patent, which is representative of all independent Asserted Claims, focuses on this abstract ideal, breaking it into the basic steps, recited in broad, functional terms that the end device controls the functions of transmitting, receiving, and determining to achieve a certain goal—increased Wi-Fi security. Using conventional computer components and well known method to perform the simple transmission, transmitting, receiving, and comparing information does not transform the claims into patent-eligible subject matter. In short, the Patents-in-Suit claim this abstract idea through the foregoing method of exchanging known transmissions, a computer system/device configured to conduct the method, and a computer-readable medium

containing the program code for directing the method.

In order to determine whether claimed subject matter within a patent is patent-eligible subject matter, *Alice Corp. Pty. V. CLS Bank Int'l*, 573 U.S. 208 (2014), established a two-part test for determining whether a claim recites patent-eligible subject matter. First, the court must determine whether the claims at issue are directed to any of the following patentable ineligible subject matter: laws of nature, natural phenomena, or abstract ideas. *Id*. at 217. Second, if the claims are directed to ineligible subject matter, the court must then consider the claim elements—both individually and as an ordered combination—to determine whether they add an "inventive concept." *Id*. at 217-18.

Step one involves the court evaluating the claims' "focus" to determine whether, despite reciting a technological environment or computer-related jargon, 'the claim's character as a whole is directed to" an abstract idea. *Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1325 (Fed. Cir. 2017). Claims must at the very least "focus on a specific means or method that improves the relevant technology," not just "a result or effect" that "invoke[s] generic processes and machinery." *Free Stream Media Corp. v. Alphonso Inc.*, 996 F.3d 1355, 1363 (Fed. Cir. 2021); *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1337 (Fed. Cir. 2017) (claims reciting "result based functional language" for performing computer processes without "sufficiently describe[ing] how to achieve these results" are abstract). At *Alice* step two, the court determines whether the other elements, individually or collectively, add "significantly more"—something "inventive"—apart from the abstract idea. *Alice*, 573 U.S. at 217-22. The claims cannot just implement the abstract idea using "conventional computer and network components." *Two-Way*, 874 F.3d at 1339.

a. Under *Alice* Step 1, the Asserted Claims are an Unpatentable Abstract Idea

Claim 1 of the ’384 Patent, Claim 1 of the ’005 Patent, and Claim 10 of the ’552 Patent are each representative to the other Asserted Claims in each Asserted Patent, respectively. Under the first step of Alice, the Asserted Claims are directed to an abstract idea because they recite functional, result-oriented limitations for performing Wi-Fi access point connections—generalized steps to be performed by the hardware in a mobile device—not any “specific means or method” for improving the underlying technology. *Free Stream*, 996 F.3d at 1363. Appendix D-1 sets forth a chart identifying the specific exception to eligibility to which each Asserted Claim is directed to and the factual and legal basis therefore.

The joint specification describes that “security for Wi-Fi wireless technologies have drawn intense scrutiny” and that “location information of the end device may be exposed to some access points with which a user of the end device does not want to be connected….” *See, e.g.*, ’005 Patent at 1:21-22, 3:7-9. The patent’s purported solution is to mask the identity of the end device by using a “fake device identifier” and identifying itself only to access points on a network that are “authorized”—i.e., access points to which the end device has previously connected or one that has been authenticated by the mobile network server. But this is merely a desired outcome, and neither claim 1 of the ’005 Patent—nor any other Asserted Claim—provides any specific way to achieve these results other than through basic computing functionality—i.e., masking information and comparing information received from an access point with previously stored information on the end device or a server. Privacy protection during communication and information comparison are fundamental communication practices known in both the electronic and pre-electronic worlds. Indeed, these concepts were “pervasive in human activity” long before the Patents-in-Suit and “limiting [them] to a particular environment,” like mobile computing and wireless connection,

"does not make the [concepts] any less abstract." *Ericsson Inv. V. TCL Commc'n Tech. Holdings, Ltd.*, 955 F.3d 1317, 1327 (Fed. Cir. 2020). Moreover, the concept of authentication, to which the Asserted Claims are directed, is a well-recognized, patent-ineligible abstract idea. *Universal Secure Registry LLC v. Apple Inc.*, 10 F.4th 1342, 1349-50 (Fed. Cir. 2021)*; Elec. Commc'n Techs., LLC v. ShoppersChoice.com, LLC,* 958 F.3d 1178, 1181 (Fed. Cir. 2020); *Prism Techs. LLC v. T-Mobile USA, Inc.,* 696 Fed. App. 1014, 1017 (Fed. Cir. 2017); *EasyWeb Innovations, LLC v. Twitter, Inc.,* 689 Fed. App. 969, 971 (Fed. Cir. 2017).

b. Under *Alice* Step 2, the Patents-in-Suit do not Include any Inventive Concepts that Would Transform the Claimed Improved Security When Connecting to Wi-Fi Access Points into Patentable Subject Matter

Under *Alice* step two, the Asserted Claims fail to provide any inventive concept because they rely merely on "well-understood, routine, conventional components" to implement the abstract idea of improving security when connecting to wireless access points. *Yu v. Apple Inc.*, 1 F.4th 1040, 1045 (Fed. Cir. 2021). Indeed, the only tangible components recited in any of the Asserted Claims are generic garden-variety computer hardware—network interfaces, servers, processors, transmitters, receivers, etc. Because these hardware elements are only "off-the-shelf, conventional computer [and] network…technology," they are "insufficient to pass the test of an inventive concept in the application of an abstract idea." *Elec. Power Grp. LLC v. Alstom S.A.*, 830 F.3d 1350, 1355 (Fed. Cir. 2016).

In short, the claimed computer processing functions—including, for example, the transmitting of probe requests and receiving of probe responses—are equally conventional and require only standard components. Furthermore, the ordered combination of the elements does not impart any inventive concept at least because each well-understood, routine, and conventional element in the asserted claims is used for the conventional objective of securely connecting a Wi-

Fi enabled device to a wireless network at an access point. Indeed, the specification makes clear that the "communications medium" used to achieve the abstract goal of improving security during Wi-Fi access can be achieved through communications conforming to the IEEE 802.11 standard. '005 Patent at 7:40-41. Merely utilizing off-the-shelf wireless technology to effectuate the claims to achieve their intended purposes cannot supply the requisite inventive concept to overcome *Alice* step two. *Chamberlain Grp., Inc. v. Techtronic Indus. Co.*, 935 F.3d 1341, 1349 (Fed. Cir. 2019) holding that utilizing conventional technology for transmitting information wirelessly cannot be an inventive concept); *see also Universal Secure Registry LLC v. Apple Inc.*, 10 F.4th 1342, 1357 (Fed. Cir. 2021) (finding a claim reciting combinations of conventional authentication techniques to be non-patentable as directed to well-understood, routine, and conventional activities).

Pursuant to the Standing Order Regarding Subject Matter Eligibility Contentions, Appendix D contains two charts:

1) a first chart (D-1) that identifies each exception to eligibility (e.g., abstract idea, law of nature, and natural phenomenon) to which each Asserted Claim is directed and the factual and legal basis therefor, as well as identifying representative claims. a description of the secure wireless communications industry; and

2) a second chart (D-2) that includes a description of the secure wireless communications industry at the time of the purported invention, and a description of how each element of the Asserted Claims (through a representative claim) was well understood, routine, and conventional, both individually and in combination with the other elements of that claim.

Defendants intend to rely upon the same information identified above (*see* supra Section III) to support its patent-eligibility contentions and therefore incorporate by reference the tables

presented in Section III as well as all disclosures from the references listed therein.

* * * *

Accordingly, the claims of the Patents-in-Suit are invalid under 35 U.S.C. § 101 as attempting to claim patent-ineligible subject matter.

VI. Document Production Pursuant to P.R. 3-4 and Standing Order Regarding Subject Matter Eligibility.

Pursuant to Patent Rule 3-4, Standing Order Regarding Subject Matter Eligibility, and the Protective Order entered in this proceeding, Defendants have produced, will produce, or will make available, the documents set forth below:

(a) Documents and information sufficient to show the operation of any aspects of elements of the accused instrumentality identified in Plaintiff's Preliminary Infringement Contentions. Defendants will make applicable source code available pursuant to the Protective Ordered entered in this proceeding.

(b) A copy of each item of prior art identified under P.R. 3-3(a) that does not appear in the file history of the Patents-in-Suit. Such documents, to the extent they have not already been produced, are being produced. And,

(c) Materials upon which Defendants intend to rely upon for subject matter eligibility contentions.

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