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

HEADWATER RESEARCH LLC, *Plaintiff*, v. SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC., *Defendants*.	Civil Action No. 2:23-cv-00641-JRG-RSP **JURY DEMANDED**

SAMSUNG ELECTRONICS CO. LTD. AND SAMSUNG ELECTRONICS AMERICA, INC.'S P.R. 3-3 AND 3-4
INVALIDITY AND PATENT INELIGIBILITY CONTENTIONS

Defendants Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, "Defendants" or "Samsung") hereby provide the following Preliminary Invalidity Contentions ("Contentions") to Plaintiff Headwater Research LLC ("Plaintiff" or "Headwater") for U.S. Patent Nos. 8,588,110 ("the '110 patent"), 8,639,811 ("the '811 patent"), 9,179,359 ("the '359 patent"), and 9,647,918 ("the '918 patent") (collectively, the "Asserted Patents").

I. PRELIMINARY STATEMENT AND RESERVATION OF RIGHTS

In its Infringement Contentions dated May 15, 2024, Headwater asserted the following 108 claims (the "Asserted Claims"):

- Claims 1-30 of the '110 patent;
- Claims 1-30 of the '811 patent;
- Claims 1-29 of the '359 patent; and
- Claims 1-19 of the '918 patent;

Samsung notes this is all of the claims of each of the Asserted Patents; however, to the extent Headwater may be permitted to assert additional claims or arguments in the future, Samsung

reserves all rights to disclose new or supplemental contentions regarding such claims and arguments.

Because the same claim scope must apply for both infringement and invalidity, these Contentions are based on Headwater's assertions in its Infringement Contentions. Samsung does not thereby implicitly or explicitly agree with Headwater's construction of the claims. Samsung reserves all rights to disclose new or supplemental invalidity contentions, including to address any construction of the claims rendered by the Court, changed theories of infringement, and any evidence obtained during the course of discovery.

Subject to the rights reserved in these Contentions, all Asserted Claims are invalid under at least one or more of 35 U.S.C. §§ 101, 102, 103, and/or 112. The Asserted Claims are invalid because they are anticipated and/or rendered obvious under 35 U.S.C. §§ 102 and 103. If Headwater contends or a fact-finder finds that one or more limitations of the Asserted Claims are not disclosed in the prior art identified as anticipatory, Samsung reserves the right to assert obviousness based on the identified references and/or to identify other references that would have rendered obvious the allegedly missing limitation. Furthermore, the obviousness combinations of references provided below and in the accompanying claim charts under 35 U.S.C. § 103 are exemplary only and are not intended to be exhaustive. If or when Headwater challenges the disclosure of any of these references with respect to particular limitations of the Asserted Claims, Samsung reserves the right to supplement these Contentions to assert additional or different bases for obviousness. Samsung reserves the right to use any combination of the references set forth in these Contentions to demonstrate the obviousness of the Asserted Claims. Additionally, certain claims of the Asserted Patents are invalid for failure to comply with the written description,

enablement, and definiteness requirements of 35 U.S.C. § 112. The Asserted Claims are also invalid for lack of patentable subject matter under 35 U.S.C. § 101.

Samsung expressly reserves the right to amend, correct, and/or supplement these Contentions in accordance with the Procedural Schedule governing these cases.

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These Contentions reflect Samsung's knowledge, investigation, and discovery as of the date of service. Samsung reserves the right to supplement these Contentions as appropriate and for any permissible reason. For example, pursuant to the Procedural Schedule, Samsung reserves the right to supplement these Contentions after subsequent case events, including any disclosure by Headwater of amended or supplemental infringement contentions, any ruling by the Court on claim construction, or in response to arguments made and positions taken by Headwater during fact and expert discovery. Samsung also reserves the right to supplement these Contentions if it becomes aware of additional prior art, becomes aware of additional features of the prior art references cited below, or becomes aware of any other relevant information through discovery, including non-party discovery, or otherwise. Samsung also reserves the right to modify or supplement its Contentions based on the Court's construction of the claims.

In addition to the charts attached hereto, Samsung expressly incorporates by reference, as if expressly set forth in these Contentions, all invalidity positions, prior art, and claim charts asserted against Headwater in any Headwater lawsuit or IPR proceeding by Samsung, prior defendants, petitioners, and potential or actual licensees to the Asserted Patents. Samsung also incorporates any future discovery responses and expert reports in such litigations or proceedings.

Samsung's citations to disclosures in any particular prior art reference are not (and are not intended to be) exhaustive but rather illustrative. Samsung reserves the right to rely on uncited

portions of the prior art references and on other publications and expert testimony as aids in understanding and interpreting the cited portions, as providing context thereto, as additional evidence that the prior art discloses a claim limitation or the alleged invention as a whole, as evidence of the state of the art at a particular time, as evidence of the obviousness factor of contemporaneous development by others, and as evidence of motivation to combine. Samsung also reserves the right to rely on uncited portions of the prior art references, other publications, and testimony, including expert testimony, to establish bases for combination of prior art references that render the charted claims obvious. Due to the related nature of the Asserted Patents, Samsung also reserves the right to rely on any cited portions of a prior art reference for one Asserted Patent against all Asserted Patents. Samsung also reserves the right to rely upon any documentary or testimonial evidence of the existence of any systems that embodied or practiced the disclosures found in the accompanying invalidity charts, for example as discussed in the prior art references cited herein, as such systems may qualify as prior art under 35 U.S.C. § 102(g).[1]

Samsung intends to rely on admissions concerning the scope of the prior art relevant to the Asserted Patents found in, *inter alia*: the patent prosecution histories for the Asserted Patents and related patents and/or patent applications (including all prior art cited therein); any deposition testimony of the named inventors on the Asserted Patents and related patents and/or patent applications in this matter or any other matter; evidence and testimony relating to the level of skill in the art; and the papers filed and any evidence submitted by Headwater in connection with this matter.

Samsung reserves the right to assert that the Asserted Claims are invalid under 35 U.S.C. § 102(f) in the event Samsung obtains additional evidence that the inventors named in any of the

[1] Citations herein refer to the pre-AIA version of Title 35 of the U.S. Code.

Asserted Patents did not invent the subject matter claimed therein. Should Samsung obtain such evidence, it will provide the name of the person(s) from whom and the circumstances under which the alleged invention or any part of it was derived.

These Contentions are not intended to include or otherwise reflect Samsung's claim interpretations. Because the Court has not yet construed any of the claims in this litigation, Samsung bases these Contentions at least on its present understanding of Headwater's view and application of the claim scope, to the extent that view can be inferred from Headwater's actual and/or apparent application of those claims. But Samsung does not adopt any constructions or interpretations impliedly or expressly in these Contentions. Moreover, Samsung's Contentions may reflect alternative positions as to claim construction and scope.

For the purposes of these Contentions, Samsung has made assumptions regarding possible meanings of indefinite claim terms. By making these assumptions, Samsung does not admit that any claim language satisfies 35 U.S.C. § 112. Similarly, the use of asserted claim terms herein should not be understood to mean that such terms, as used in the Asserted Patents or claims thereof, are definite or otherwise comply with the conditions of patentability under 35 U.S.C. § 112. Likewise, the use of asserted claim terms herein should not be understood to suggest or imply a common, usual, ordinary, customary, plain, or accepted meaning in the art for any such terms.

By providing these Contentions, Samsung is not waiving nor limiting its rights to make arguments in the future about the proper scope of the claims or to advance alternative constructions to those Headwater advocates. Samsung expressly reserves the right to argue for such alternative claim constructions during this litigation and to supplement these Contentions after the Court has issued a claim construction ruling.

Samsung's factual investigations, including its investigation of prior art and grounds for invalidity, is ongoing. Further, Samsung's invalidity positions will be the subject of expert testimony. Samsung reserves the right to supplement these Contentions, including, without limitation, adding additional prior art and grounds of invalidity in accordance with the Federal Rules of Civil Procedure and Procedural Schedule in these cases, or otherwise.

II. PERSON HAVING ORDINARY SKILL IN THE ART

A person of ordinary skill in the art ("POSITA" or "POSA"), in or about 2009-2011, would have had at least a Bachelor's degree in Electrical Engineering, Computer Science, or equivalent, and 2-5 years of experience with networking, mobile device communications, and/or wireless digital communications systems. *See, e.g.*, '110 pat. at 1:33-55, 5:62-48. Additional education might compensate for less experience, and vice versa.

III. IDENTIFICATION OF RELEVANT PRIOR ART

A. Priority Dates

Headwater's Infringement Contentions appear to allege that two Asserted Patents, the '110 patent and the '811 patent, can claim priority to U.S. Provisional Application Ser. No. 61/206,354, filed on Jan. 28, 2009, entitled "Services Policy Communication System and Method" ("the '354 application"). Headwater appears to allege the '359 patent can claim priority to U.S. Provisional Application Ser. 61/348,022, filed on May 25, 2010, and appears to allege the '918 patent can claim priority to U.S. Provisional Application Ser. 61/435,564, filed on January 24, 2011. [2]

[2] While Headwater's Infringement Contentions do not specifically identify the provisional applications to which the Asserted Patents allegedly claim priority, Headwater's Infringement Contentions assert that Asserted Patents are entitlted to priority dates coinciding with the above-listed applications cited on the face of the Asserted Patents. *See* Headwater's P.R. 3-1(e) disclosures. To the extent that Headwater later asserts it is relying on a different application for priority, Samsung expressly reserves the right to modify these Contentions accordingly.

Headwater has not met its burden of establishing that the claims of the Asserted Patents are entitled to these priority dates. *See In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1376 (Fed. Cir. 2016) (A "patentee bears the burden of establishing that its claimed invention is entitled to an earlier priority date.").

For a patent to claim priority back to the filing date of a particular patent application, all the limitations must appear in the specification of the application to which priority is claimed. However, as to the '110 patent and the '811 patent, the '354 application's specification clearly fails to disclose at least the following asserted independent claim limitations, including but not limited to those limitations reciting "first service policy," "first service activity," "aspect of the first service policy," and "control policy." As to the '359 patent, the '022 application's specification clearly fails to disclose at least the following asserted independent claim limitations, including but not limited to those limitations reciting "WWAN differential traffic control policy," "network access conditions," and "application program interface." As to the '918 patent, the '564 application's specification clearly fails to disclose at least the following asserted independent claim limitations, including but not limited to those limitations reciting "first network stack Application Programming Interface (API)," "network stack," "second API," "second call," "network resource identifier," "media service manager," and "service classification and measurement agents." Thus, each alleged priority application fails to disclose any claims depending therefrom:

1. '110 patent

- **Claim 1:** "a first service policy associated with the first wireless network, the first service policy configured to at least assist in reducing data usage associated with a first service activity over the first wireless network, the first service activity being less than all service activities available to the wireless device, the first service policy for enabling control of the first service activity on the first wireless network that is different from how the first service activity is controlled on the second wireless network;";

- **Claim 1:** "identify an intended, attempted, or successful data communication over the first wireless network, the intended, attempted, or successful data communication over the first wireless network being associated with the first service activity."

2. '811 patent

- **Claim 1:** "memory configured to store a control policy associated with a first application on the wireless device, the first application at least enabling the wireless device to access at least a first data service over the first wireless network";

- **Claim 1:** "determine at least an aspect of the control policy based on the user input, the at least an aspect of the control policy for at least assisting in restricting or preventing a first access to the first wireless network by the first application when the first application is executing, the at least an aspect of the control policy enabling a first control of the first access to the first wireless network by the first application when the first application is executing that differs from a second control of a second access to the first wireless network by a second application on the wireless device";

- **Claim 1:** "apply the control policy, thereby at least assisting in restricting or preventing the first access to the first wireless network by the first application when the first application is executing."

3. '359 patent

- **Claim 1**: "one or more processors configured to apply a stored WWAN differential traffic control policy to Internet data service provided using the WWAN modem and the at least one WWAN, and";

- **Claim 1**: "indicate to a particular application, via an application program interface (API), one or more network access conditions based on the applied WWAN differential traffic control policy, wherein";

- **Claim 1**: "the one or more network access conditions includes a network access condition that indicates the unavailability to the particular application of an Internet data service that is currently available via the WWAN modem to a different application, but that is indicated as unavailable to the particular application."

4. '918 patent

- **Claim 1:** "a first network stack Application Programming Interface (API), containing at least one first call accessible to each of a plurality of device applications, the first network stack API callable by each of the plurality of device applications to open and use data packet flows via the network stack, the wireless modem, and the at least one wireless network";

- **Claim 1:** "a second API containing at least one second call accessible to each of the plurality of device applications, the second API callable by each of the plurality of device

applications to make a data transfer request for a media object associated with a network resource identifier supplied by the calling device application";

- **Claim 1:** "a media service manager prompted by the second call, to manage network data transfers for the media object by interfacing with the network stack to retrieve the media object associated with the network resource identifier via the wireless modem and the wireless network";

- **Claim 1:** "one or more service classification and measurement agents to associate wireless network data usage for the media object network data transfers with the device application that requests the data transfer for the media object, to associate wireless network data usage for respective data packet flows opened and used via the first network stack API with the device application opening such respective data packet flow, and to reconcile wireless network data usage for each of the plurality of device applications to track an aggregate wireless network data usage attributable to each of the plurality of device applications via both the first network stack API and the second API."

Thus, the Asserted Claims' cannot claim priority to January 28, 2009, May 25, 2010, and January 24, 2011 respectively. Nevertheless, even under Headwater's incorrect priority dates, the Asserted Patents are invalid.

To the extent it is later argued by Headwater, or otherwise determined that different priority dates applies, Samsung reserves the right to amend these Contentions accordingly.

B. Prior Art Patent Publications

Based on their investigation to date, Samsung has provided in the list below the prior art patent publications presently known to Samsung that it contends anticipate and/or render obvious the Asserted Claims. The prior art identified in these Contentions discloses (i.e., anticipates and/or renders obvious) the elements of the Asserted Claims either explicitly or inherently. Similarly, the prior art patent publications listed on the face of the Asserted Patents discloses (i.e., anticipates and/or renders obvious) the elements of the Asserted Claims either explicitly or inherently, and Samsung reserves the right to rely on any such reference.

Prior-art patents or publications included in these Contentions may be related (such as a divisional, continuation, continuation-in-part, parent, or child) to earlier or later-filed patents or

publications, may have counterparts filed in other jurisdictions, or may incorporate (or be incorporated by) other patents or publications by reference. The listed patents or publications are intended to be representative of these other patents or publications to the extent they exist. Samsung accordingly reserves the right to modify, amend, or supplement these Contentions with these related patents or publications, as well as other prior art references, upon further investigation. Additionally, any reference in these Contentions, including the appendices and exhibits thereto, to a specific subsection or subsections of 35 U.S.C. § 102, is merely exemplary, and Samsung expressly reserves the right to rely on additional or other sections of 35 U.S.C. § 102, as appropriate. If Headwater asserts that one or more of these references or systems fails to disclose one or more elements of a claim, Samsung reserves the right to also use those references to invalidate the claim under 35 U.S.C. § 103.

Discovery is ongoing, and Samsung's prior art investigation and third-party discovery is therefore not yet complete. Samsung reserves the right to present additional items of prior art under 35 U.S.C. §§ 102 and/or 103 that are located during the course of discovery or further investigation. For example, Samsung expects to receive documents from additional third parties either through informal requests or under subpoenas that are believed to have knowledge, documentation, and/or corroborating evidence concerning some of the prior art listed and discussed below. These third parties include without limitation the authors, inventors, or assignees of the references listed in these disclosures.

Patent Publication	Publication/Issue Date
Australian Application Pub. No. 2003255114 B2	Aug. 13, 2003
EP1850575A1 (Rybak)	Oct. 31, 2007
European Patent Application	Dec. 8 2004

EP 1 484 871 A1	
International Publication No WO 2008/043278 A1	Apr. 17, 2008
International Publication No. WO 2005/015379 A1	Feb. 2, 2008
International Publication No. WO 2012/047275A1	Apr. 12, 2012
JP 2010/261635 A	Nov. 18, 2010
KR 2009/0036186 A	Apr. 14, 2009
U.S. Patent Application Pub. No. 2002/0133598 A1	Sep. 19, 2002
U.S. Patent Application Pub. No. 2002/0166117 A1	Nov. 7, 2002
U.S. Patent Application Pub. No. 2004/0162061A1 (Abrol)	Aug. 19, 2004
U.S. Patent Application Pub. No. 2005/0026654 A1	Feb. 3, 2005
U.S. Patent Application Pub. No. 2005/0080904 ("Green")	Apr. 14, 2005
U.S. Patent Application Pub. No. 2005/0091435A1 (Han)	Apr. 28, 2005
U.S. Patent Application Pub. No. 2005/0108075 A1	May 19, 2005
U.S. Patent Application Pub. No. 2006/0019632 ("Cunningham")	Jan. 26, 2006
U.S. Patent Application Pub. No. 2006/0039354 A1	Feb. 23, 2006
U.S. Patent Application Pub. No. 2006/0053113 A1	Mar. 9, 2006

U.S. Patent Application Pub. No. 2006/0059556 A1	Mar. 16, 2006
U.S. Patent Application Pub. No. 2006/0149811A1 (Bennett)	Jul. 6, 2006
U.S. Patent Application Pub. No. 2006/0223495A1 (Cassett)	Oct. 5, 2006
U.S. Patent Application Pub. No. 2006/0229090 A1	Oct. 12, 2006
U.S. Patent Application Pub. No. 2006/0282566 ("Virdi")	Dec. 14, 2006
U.S. Patent Application Pub. No. 2007/0032230 ("Pregont")	Feb. 8, 2007
U.S. Patent Application Pub. No. 2007/0038763 A1	Feb. 15, 2007
U.S. Patent Application Pub. No. 2007/0058669A1 (Hoffmann)	Mar. 15, 2007
U.S. Patent Application Pub. No. 2007/0121615 ("Weill")	May 31, 207
U.S. Patent Application Pub. No. 2007/0156915A1 (Neishi)	Jul. 5, 2007
U.S. Patent Application Pub. No. 2007/0162582 A1	Jul. 12, 2007
U.S. Patent Application Pub. No. 2007/0192818A1 (Bourges-Sevenier)	Aug. 16, 2007
U.S. Patent Application Pub. No. 2007/0258459 ("Smith")	Nov. 8, 2007
U.S. Patent Application Pub. No. 2008/0002652 ("Gupta")	Jan. 3, 2008
U.S. Patent Application Pub. No. 2008/0080457 A1	Apr. 3, 2008

U.S. Patent Application Pub. No. 2008/0080458 A1	Apr. 3, 2008
U.S. Patent Application Pub. No. 2008/0084977 A1	Apr. 10, 2008
U.S. Patent Application Pub. No. 2008/0085717 A1	Apr. 10, 2008
U.S. Patent Application Pub. No. 2008/0122796 (“Jobs”)	May 29, 2008
U.S. Patent Application Pub. No. 2008/0162981 (“Jajoo”)	Jul. 3, 2008
U.S. Patent Application Pub. No. 2008/0274715 (“Heit”)	Nov. 6, 2008
U.S. Patent Application Pub. No. 2008/0282080 A1	Nov. 13, 2008
U.S. Patent Application Pub. No. 2009/0019163 (Pecus)	Jan. 15, 2009
U.S. Patent Application Pub. No. 2009/0028127 A1	Jan. 29, 2009
U.S. Patent Application Pub. No. 2009/0044201A1 (Lee)	Feb. 12, 2009
U.S. Patent Application Pub. No. 2009/0116415 (“Kashima”)	May 7, 2009
U.S. Patent Application Pub. No. 2009/0119773 A1	May 7, 2009
U.S. Patent Application Pub. No. 2009/0185527 (“Akhtar”)	Jul. 23, 2009
U.S. Patent Application Pub. No. 2009/0190471 A1	Jul. 30, 2009
U.S. Patent Application Pub. No. 2009/0207817 A1	Aug. 20, 2009

U.S. Patent Application Pub. No. 2009/0217065 A1 (“Araujo”)	Aug. 27, 2009
U.S. Patent Application Pub. No. 2009/0228951 (“Ramesh”)	Sep. 10, 2009
U.S. Patent Application Pub. No. 2009/0307696 A1	Dec. 10, 2009
U.S. Patent Application Pub. No. 2010/0017506 A1	Jan. 21, 2010
U.S. Patent Application Pub. No. 2010/0077035 A1	Mar. 25, 2010
U.S. Patent Application Pub. No. 2010/0112955 A1	May 6, 2010
U.S. Patent Application Pub. No. 2010/0115048 A1	May 6, 2010
U.S. Patent Application Pub. No. 2010/0125657A1 (Dowling)	May 20, 2010
U.S. Patent Application Pub. No. 2010/0281154 (“Bedi”)	Nov. 4, 2010
U.S. Patent Application Pub. No. 2011/0019557 A1	Jan. 27, 2011
U.S. Patent Application Pub. No. 2011/0019574 A1 (“Malomsoky”)	Jan. 27, 2011
U.S. Patent Application Pub. No. 2011/0185202 A1	Jul. 28, 2011
U.S. Patent Application Pub. No. 2011/0249668 A1	Oct. 13, 2011
U.S. Patent Application Pub. No. 2011/0312283 A1	Dec. 22, 2011
U.S. Patent Application Pub. No. 2011/0314151 A1	Dec. 22, 2011

U.S. Patent Application Pub. No. 2012/0023236 A1	Jan. 26, 2012
U.S. Patent Application Pub. No. 2012/0101952 A1	Apr. 26, 2012
U.S. Patent Application Pub. No. 2012/0102504 A1	Apr. 26, 2012
U.S. Patent Application Pub. No. 2012/0117478A1 (Vadde)	May 10, 2012
U.S. Patent Application Pub. No. 2012/0157038 A1	Jun. 21, 2012
U.S. Patent Application Pub. No. 2012/0185577 A1	Jul. 19, 2012
U.S. Patent Application Pub. No. 2012/0260118 A1	Oct. 11, 2012
U.S. Patent Application Pub. No. 2012/0265897 A	Oct. 18, 2012
U.S. Patent Application Pub. No. 2012/0284620 A1	Nov. 8, 2012
U.S. Patent Application Pub. No. 2013/0103376 A1	Apr. 25, 2013
U.S. Patent Application Pub. No. 2013/0111572 A1	May 2, 2013
U.S. Patent Application Pub. No. 2013/0117382 A1	May 9, 2013
U.S. Patent Application Pub. No. 2013/0149994 A1	Jun. 13, 2013
U.S. Patent Application Pub. No. 2013/0183937 A1	Jul. 18, 2013
U.S. Patent Application Pub. No. 2015/0207760 A1	Jul. 23, 2015
U.S. Patent No. 5,987,611	Nov. 16, 1999

U.S. Patent No. 6,185,576 B2	Feb. 6, 2001
U.S. Patent No. 6,363,477B1 (Fletcher)	Mar. 26, 2002
U.S. Patent No. 6,578,077 B1	Jun. 10, 2003
U.S. Patent No. 6,754,470B2 (Hendrickson)	Jun. 22, 2004
U.S. Patent No. 6,845,397B1 (Lavian)	Jan. 18, 2005
U.S. Patent No. 6,898,654 B1	May 24, 2005
U.S. Patent No. 7,069,330 B1	Jun. 27, 2006
U.S. Patent No. 7,260,635 B2	Aug. 21, 2007
U.S. Patent No. 7,290,034 B2	Oct. 30, 2007
U.S. Patent No. 7,433,941B1	Oct. 7, 2008
U.S. Patent No. 7,664,067B2 (Pointer)	Feb. 16, 2010
U.S. Patent No. 7,751,330 B2	Jul. 6, 2010
U.S. Patent No. 7,821,985 B2	Oct. 26, 2010
U.S. Patent No. 8,019,868	Sep. 13, 2011
U.S. Patent No. 8,028,060 B1	Sep. 27, 2011
U.S. Patent No. 8,099,078 B2	Jan. 17, 2012
U.S. Patent No. 8,135,443 B2 (“Aleksic”)	Mar. 13, 2012
U.S. Patent No. 8,260,253 B2	Sep. 4, 2012
U.S. Patent No. 8,285,850 (“Jones”)	Oct. 9, 2012
U.S. Patent No. 8,320,272 B2	Nov. 27, 2012
U.S. Patent No. 8,346,923 (“Rowles”)	Jan. 1, 2013
U.S. Patent No. 8,375,136 (“Roman”)	Feb. 12, 2013
U.S. Patent No. 8,397,087 B1	Mar. 12, 2013

U.S. Patent No. 8,400,491 (“Panpaliya”)	Mar. 19, 2013
U.S. Patent No. 8,429,409 B1	Apr. 23, 2013
U.S. Patent No. 8,429,516B1 (Riggs)	Apr. 23, 2013
U.S. Patent No. 8,437,748 B2	May 7, 2013
U.S. Patent No. 8,576,874B2 (Orr)	Nov. 5, 2013
U.S. Patent No. 8,589,541 B2	Nov. 19, 2013
U.S. Patent No. 8,626,115 B2	Jan. 7, 2014
U.S. Patent No. 8,634,821 B2	Jan. 21, 2014
U.S. Patent No. 8,666,364 B2	Mar. 4, 2014
U.S. Patent No. 8,667,513 B1	Mar. 4, 2014
U.S. Patent No. 8,918,812B2 (Hayward)	Dec. 23, 2014
U.S. Patent No. 9,008,673 B1	Apr. 14, 2015
U.S. Patent No. 9,098,333 B1	Aug. 4, 2015
U.S. Patent No. 9,143,547B2 (Middleton)	Sep. 22, 2015
U.S. Patent No. 9,398,103 B2	Jul. 19, 2016
U.S. Patent No. 9,516,129 B2	Dec. 6, 2016

C. Prior Art Non-Patent Publications[3,4]

Non-Patent Publication	Publication Date
Android Developers, Android 2.3 Platform Highlights, 2010, downloaded from the internet at Android 2.3 Platform Highlights | Android Developers (vanderbilt.edu) on July 17, 2024.	2010
Android Developers, Android 2.3 Platform, 2010, downloaded from the internet at Android 2.3 Platform | Android Developers (vanderbilt.edu) on July 17, 2024.	2010
Banchs, et. al., Distributed weighted fair queuing in 802.11 wireless LAN, 2002 IEEE International Conference on Communications, Conference Proceedings. ICC 2002 pp. 3121-3127), 2002 ("Banchs")	2002
BlackBerry Pearl 9105 Smartphone	2010
BlackBerry Bold 9000 Smartphone – 4.6 User Guide	2008
BlackBerry Bold 9000 Smartphone – 5.0 User Guide	2009
BlackBerry Bold 9700 Smartphone – 5.0 User Guide	2009
BlackBerry Storm 2 9520/9550 Smartphones – 5.0 User Guide	2010
BlackBerry Curve 9330 Smartphone – 5.0 User Guide	2010
BlackBerry Torch 9800 Smartphone – 6.0 User Guide	2010
BlackBerry Bold 9000 Press Release, May 12, 2008, downloaded from the internet at https://web.archive.org/web/20080517012537/http://press.rim.com/release.jsp?id=1562 on July 16, 2024	2008

[3] Any discussion of a non-patent publication in either Section III.C or in one of the claim charts included herewith that discloses a corresponding product or system shall also apply with equal force to the underlying product or system. In other words, both the non-patent publication and the underlying product or system themselves qualify as prior art in the context that they are used herein.

[4] Discovery is currently ongoing, and Samsung will supplement these Contentions with respect to the public availability, as necessary, of any non-patent publication if and when more information becomes available. Indeed, Samsung expects to receive documents from third parties either through informal requests or under subpoenas that are believed to have knowledge, documentation, and/or corroborating evidence concerning the public availability of the identified non-patent publications.

Blake, et al., IETF RFC 2475, "An Architecture for Differentiated Services," December 1998, downloaded from the internet at https://datatracker.ietf.org/doc/html/rfc2475 on July 29, 2023	1998
Buiati, et al., 2004, July. A secure autoconfiguration protocol for MANET nodes. In International Conference on Ad-Hoc Networks and Wireless (pp. 108-121). Berlin, Heidelberg: Springer Berlin Heidelberg. ("Buiati")	2004
Damianou, et al., 2001. The ponder policy specification language. In Policies for Distributed Systems and Networks: International Workshop, POLICY 2001 Bristol, UK, January 29–31, 2001 Proceedings (pp. 18-38). Springer Berlin Heidelberg.	2001
Developing Software for Symbian OS	2006
Excerpts, Computer Networks, Fourth Edition, by Andrew Tanenbaum, Prentice Hall, 2003	2003
Excerpts, Telcom Dictionary, Althos Publishing, 2007.	2007
Gonçalves, et al., 2009, October. A graphical user interface for policy composition in CIM-SPL. In 2009 International Conference on Ultra Modern Telecommunications & Workshops (pp. 1-7), IEEE. ("Gonçalves")	2009
Grossman, Invention of the year: The iPhone. Time Magazine Online, 1, downloaded from the internet at https://content.time.com/time/specials/2007/article/0,28804,1677329_1678542_1677891,00.html on May 28, 2024.	2007
GSM Arena: Apple iPhone, downloaded from the internet at https://www.gsmarena.com/apple_iphone-1827.php on July 16, 2024.	2024
GSM Arena: Apple iPhone 3G, downloaded from the internet at https://www.gsmarena.com/apple_iphone_3g-2424.php on July 16, 2024.	2024
GSM Arena: Apple iPhone 3GS, downloaded from the internet at https://www.gsmarena.com/apple_iphone_3gs-2826.php on July 16, 2024.	2024
GSM Arena: Apple iPhone 4, downloaded from the internet at https://www.gsmarena.com/apple_iphone_4-3275.php on July 16, 2024.	2024

GSM Arena: BlackBerry Bold 9000, downloaded from the internet at https://www.gsmarena.com/blackberry_bold_9000-2370.php on July 16, 2024.	2024
GSM Arena: BlackBerry Bold 9700, downloaded from the internet at https://www.gsmarena.com/blackberry_bold_9700-2963.php on July 16, 2024.	2024
GSM Arena: BlackBerry Bold 9780, downloaded from the internet at https://www.gsmarena.com/blackberry_bold_9780-3431.php on July 16, 2024.	2024
GSM Arena: BlackBerry Storm2 9550, downloaded from the internet at https://www.gsmarena.com/blackberry_storm2_9550-2970.php on July 16, 2024.	2024
GSM Arena: BlackBerry Curve 3G 9330, downloaded from the internet at https://www.gsmarena.com/blackberry_curve_3g_9330-3591.php on July 16, 2024.	2024
GSM Arena: BlackBerry Torch 9800, downloaded from the internet at https://www.gsmarena.com/blackberry_torch_9800-3203.php on July 16, 2024.	2024
GSM Arena: Samsung Google Nexus S, downloaded from the internet at https://www.gsmarena.com/apple_iphone_4-3275.php on July 16, 2024.	2024
Google Android OS 2.3 Gingerbread User's Guide	2011
Hiertz, et. al., (2010). The IEEE 802.11 universe. IEEE Communications Magazine, 48(1), 62-70. ("Hiertz")	2010
How Can I Run an Application at a Higher Priority?	Mar. 19, 2000
IETF RFC 2205, Resource ReSerVation Protocol (RSVP), version 1 Functional Specification, September 1997, downloaded from the internet at https://datatracker.ietf.org/doc/html/rfc2205 on May 16, 2024	1997
IETF RFC 5246, The Transport Layer Security (TLS) Protocol, version 1.2, August 2008, downloaded from the internet at https://datatracker.ietf.org/doc/html/rfc5246 on May 9, 2024	2008

IETF RFC 791, Internet Protocol, September 1981, downloaded from the internet at https://www.ietf.org/rfc/rfc791.txt on July 28, 2023	1981
IETF RFC 793, TRANSMISSION CONTROL PROTOCOL, September 1981, downloaded from the internet at https://datatracker.ietf.org/doc/html/rfc793 on April 24, 2024. (“TCP”)	1981
Internet connection speed recommendations, downloaded from the Internet at https://help.netflix.com/en/node/306 on April 29, 2024. (“Netflix”)	
Internet Traffic Manager	Aug. 11, 2009
iPhone User Guide For iPhone OS 3.1 Software	2009
iPhone User Guide For iOS 4.1 Software	2011
iPhone User Guide For iOS 4.2 and 4.3 Software	2011
Liao, S.H., 2005. Expert system methodologies and applications—a decade review from 1995 to 2004. Expert systems with applications, 28(1), pp. 93-103 (“Liao”)	2005
Lobo, et. al., (1999). A policy description language. AAAI/IAAI, 1999, 291-298 (“Lobo”)	1999
Klug, Brian, Nexus S and Android 2.3 Review: Gingerbread for the Holidays, AnandTech, December 14, 2010, downloaded from the internet at https://www.anandtech.com/show/4059/nexus-s-and-android-23-review-gingerbread-for-the-holidays/3 on July 17, 2024.	2010
Mansour, et al., 2001. Jitter control in QoS networks. IEEE/ACM Transactions On Networking, 9(4), pp.492-502.	2001
Meier, Reto, (2009). Professional Android Application Development	2009
Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (USPTO June 21, 2022) (“Director’s Guidance”)	2022
Nexus One User’s Guide	Mar. 15, 2010
Nexus S User’s Guide	2011

Ponnappan, et al., 2002, June. A policy based QoS management system for the IntServ/DiffServ based Internet. In Proceedings Third International Workshop on Policies for Distributed Systems and Networks (pp. 159-168). IEEE. ("Ponnappan")	2002
Power Management in Mobile and Pervasive Computing Systems	November 2005
Power Management Techniques for Mobile Communication	1998
Reeder, et. al., 2007. Usability challenges in security and privacy policy-authoring interfaces. In Human-Computer Interaction–INTERACT 2007: 11th IFIP TC 13 International Conference, Rio de Janeiro, Brazil, September 10-14, 2007, Proceedings, Part II 11 (pp. 141-155). Springer Berlin Heidelberg.	2007
Simplified Policy Language (CIM-SPL). Document Number DSP0231, version, 1 ("CIM-SPL")	2009
Stone, G.N., Lundy, B. and Xie, G.G., 2001. Network policy languages: a survey and a new approach, IEEE network, 15(1), pp.10-21 ("Stone")	2001
van Beek, et. al., 2004, January. Adaptive streaming of high-quality video over wireless LANs. In Visual Communications and Image Processing 2004 (Vol. 5308, pp. 647-660). SPIE. ("van Beek")	2004
Verma, et. al., (2002). Policy-based management of content distribution networks. IEEE network, 16(2), 34-39 ("Verma")	2002
Wake on Wireless: An Event Driven Energy Saving Strategy for Battery Operated Devices	Sep. 2002
Westerinen, et al., IETF RFC 3198, Terminology for Policy-Based Management, November 2001, downloaded from the Internet on May 27, 2024.	2001
Wireless Wakeups Revisited: Energy Management for VoIP over Wi-Fi Smartphones	June 2007
Wu, et. al., 2001. Scalable video coding and transport over broadband wireless networks. Proceedings of the IEEE, 89(1), pp.6-20.	2001

Moreover, the prior art non-patent publications listed on the face of the Asserted Patents discloses (i.e., anticipates and/or renders obvious) the elements of the Asserted Claims either explicitly or inherently, and Samsung reserves the right to rely on any such reference.

D. Prior Art Systems and/or Knowledge

The Asserted Claims are invalid under 35 U.S.C. §§ 102 and/or 103 based on prior art items offered for sale or publicly used or known or prior inventions, such as prior art products, including systems embodying any alleged inventions or structures described in, and/or any knowledge disclosed by or referred to in, any of the prior art patents or prior art publications identified above in Sections III.B and III.C. Because Samsung has not yet completed discovery in this case, Samsung reserves the right to supplement theses Contentions with facts, documents, or other information learned at a later point through third-party discovery or further investigation. For example, Samsung expects to receive documents from additional third parties either through informal requests or under subpoenas that are believed to have knowledge, documentation, and/or corroborating evidence concerning some of the prior art listed above and below and/or additional prior art. These third parties include without limitation the authors, inventors, or assignees of the references listed in these Contentions. In addition, Samsung reserves the right to assert invalidity under other sections of 35 U.S.C. § 102 to the extent that discovery or further investigation yield information forming the basis for such invalidity.

Moreover, all of the systems and products listed below qualify as prior art to each of the Asserted Patents under at least pre-AIA 35 U.S.C. §§ 102(a)/(b). Such systems and products were known, used, offered for sale, and/or sold in the United States prior to the appropriate priority date corresponding to each of the Asserted Patents.

Devices
Android Devices (e.g., T-Mobile G1/HTC Dream, Samsung GT-I7500 Galaxy, Nexus One, Nexus S, and emulators)[5]
Apple Devices (e.g., iPhone, iPhone 3G, iPhone 3GS, iPhone 4, and emulators)
Windows Mobile Devices (e.g., HTC Ozone, HTC Imagio XV6975, HTC Tilt 2, HTC Pure, Samsung C6620, Samsung Intrepid SPH-i350 and emulators)
BlackBerry Devices (e.g., BlackBerry Bold 9780, BlackBerry Bold 9700, BlackBerry Curve 3G 9330, BlackBerry Storm 2 9550, and BlackBerry Torch 9800)

Operating Systems
Android including Android 1.0 (released September 2008), Android 1.1 (released February 2009), Android Cupcake (1.5) (released April 2009), Android Donut (1.6) (released September 2009), Android Eclair (2.0, 2.0.1, 2.1) (released October 2009 - January 2010), Android Froyo (2.2) (released May 20, 2010), Android Gingerbread (2.3) (released December 6, 2010)[6]

[5] *See, e.g.*, SAMSUNG_PRIORART0000001-334; SAMSUNG_PRIORART0005174-76; SAMSUNG_PRIORART0005177-317; SAMSUNG_PRIORART0005416-19; SAMSUNG_PRIORART0005420-23; SAMSUNG_PRIORART0005424-28; SAMSUNG_PRIORART0005429-44; SAMSUNG_PRIORART0005445-48; SAMSUNG_PRIORART0005449-52; SAMSUNG_PRIORART0005453-57; SAMSUNG_PRIORART0005458-71; SAMSUNG_PRIORART0005472-77; SAMSUNG_PRIORART0005478-84; SAMSUNG_PRIORART0005485-86; SAMSUNG_PRIORART0005488-5624; Section IV.B.2, *infra*.

[6] *See, e.g.*, SAMSUNG_PRIORART0005042-5487; SAMSUNG_PRIORART0005487; SAMSUNG_PRIORART0004085; SAMSUNG_PRIORART0004084; SAMSUNG_PRIORART0005042; SAMSUNG_PRIORART0005350; SAMSUNG_PRIORART0003998; SAMSUNG_PRIORART0006724; SAMSUNG_PRIORART0006728; SAMSUNG_PRIORART0006730; SAMSUNG_PRIORART0005055; SAMSUNG_PRIORART0005056; SAMSUNG_PRIORART0005043; SAMSUNG_PRIORART0006720; SAMSUNG_PRIORART0009427; SAMSUNG_PRIORART0009510; SAMSUNG_PRIORART0009523; SAMSUNG_PRIORART0009529; SAMSUNG_PRIORART0009539; SAMSUNG_PRIORART0009540; SAMSUNG_PRIORART0009541; SAMSUNG_PRIORART0009542; SAMSUNG_PRIORART0012025; SAMSUNG_PRIORART0012027; SAMSUNG_PRIORART0012029; SAMSUNG_PRIORART0003998; SAMSUNG_PRIORART0005487; SAMSUNG_PRIORART0004085; SAMSUNG_PRIORART0006730; SAMSUNG_PRIORART0005350; SAMSUNG_PRIORART0005056; SAMSUNG_PRIORART0006724; SAMSUNG_PRIORART0005042; SAMSUNG_PRIORART0006728; Section IV.B.2, *infra*. For Android versions 1.0-2.3, code from earlier versions carried over into later versions. Thus, any code cited from an earlier version of Android also exists in the later version.

iPhone OS including iPhone OS 1.0 (released June 29, 2007), iPhone OS 2.0 (released July 11, 2008), iPhone OS 3.0 (released June 19, 2009), iOS 4.0 (released June 21, 2010)
BlackBerry OS 1, BlackBerry OS 2, BlackBerry OS 3 (released March 2002), BlackBerry OS 4.0 (released June 2003), BlackBerry OS 4.1 (released January 2006), BlackBerry OS 4.2 (released June 2007), BlackBerry OS 4.3 (released October 2007), BlackBerry OS 4.5/4.6 (released June 2008), BlackBerry OS 4.7 (released November 2008), BlackBerry OS 5.0 (released August 2009), BlackBerry OS 6.0 (released July 2010)
Windows Mobile including Windows Mobile 6.1 (released April 1, 2008), Windows Mobile 6.5 (released May 11, 2009), and Windows Phone 7 (released October 2010)

Applications
JuiceDefender (including JuiceDefender and associated add-on application, UltimateJuice)[7]
Microsoft Applications (including Microsoft Outlook Mobile, Windows Media Player Mobile, Windows Live, and MyPhone)
Apple Applications (including Mail, iTunes Store, iTunes, Messages, Calendar, MobileMe, Backup, Voicemail, VPN, and Newsstand API)
BlackBerry Applications (including Roxio Media Manager, Email, BlackBerry App World, Podcasts, Preferred Wireless Network List)

The Federal Circuit has held that "[t]he proper test for the public use prong of the [pre-AIA] § 102(b) statutory bar is whether the purported use: (1) was accessible to the public; or (2) was commercially exploited." *See Invitrogen Corp. v. Biocrest Mfg. L.P.*, 424 F.3d 1374, 1380 (Fed. Cir. 2005). Additionally, the on-sale bar of § 102(b) is triggered when the invention is both (1) the subject of a commercial offer for sale not primarily for experimental purposes and (2) ready for patenting. *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 67 (1998). Each of the systems and products listed above meets these criteria.

[7] *See, e.g.*, SAMSUNG_PRIORART0000379; SAMSUNG_PRIORART0000379; SAMSUNG_PRIORART0006704; SAMSUNG_PRIORART0006710; SAMSUNG_PRIORART0000363; SAMSUNG_PRIORART0000362; SAMSUNG_PRIORART0006712; SAMSUNG_PRIORART0006708; SAMSUNG_PRIORART0000335; SAMSUNG_PRIORART0006687; SAMSUNG_PRIORART0006721; SAMSUNG_PRIORART0006697-SAMSUNG_PRIORART0006703.

The above discussion is not exclusive. Samsung reserves the right to rely on both the listed products as well as other products that may become known and/or relevant during the course of this matter. Samsung also reserves the right to rely on forthcoming testimony and/or declarations from third-party witnesses, including but not limited to witnesses from Google, Apple, Microsoft, and RIM/BlackBerry relating to the above products, applications, and operating systems.

Any citation to one or more of these prior art references, or other prior art references regarding any method or system, should be construed to constitute not only a citation to the prior art reference itself but also a reference to the system itself. Discovery is ongoing in this case, and Samsung will supplement these Contentions if and when more information becomes available. For example, Defendants are already in the process of taking discovery from non-parties including Google, Apple, Microsoft, and BlackBerry. Accordingly, Defendants reserve the right to modify, amend, and/or supplement these contentions as information becomes available from non-parties.

E. Prior Art Under 35 U.S.C. §§ 102(f) and 102(g)

Each prior art patent, publication, or product identified above was either effectively filed or issued (for patents), published (for publications) or known, used, offered for sale or sold (for products) before either the earliest claimed priority date of the Asserted Patents to which it is applied for invalidity, and none appears to have been abandoned, suppressed, or concealed, so each such reference also constitutes evidence of prior invention pursuant to 35 U.S.C. § 102(g), if it is in the U.S. The persons or entities involved with each such invention include the named inventors on the above-identified patents, the authors listed on the above-identified publications, and the entities and individuals identified in connection with the above-identified products.

Because Samsung has not yet completed discovery in this case, including taking depositions of the named inventors of the Asserted Patents, reviewing Headwater's productions, and seeking discovery of prior inventions by third parties, Samsung reserves the right to

supplement these Contentions with facts, documents, or other information learned at a later point through discovery or further investigation.

IV. ANTICIPATION AND OBVIOUSNESS (35 U.S.C. §§ 102 AND 103)

The Asserted Claims are anticipated by and/or rendered obvious in view of one or more items of prior art identified in these Contentions, alone and/or in combination. Based on its investigation to date, Samsung has provided in the lists above the prior art presently known to Samsung that anticipates and/or renders obvious the Asserted Claims under at least Headwater's actual and/or apparent application of those claims. The prior art identified in these Contentions discloses (i.e., anticipates and/or renders obvious) the elements of the Asserted Claims either explicitly or inherently.

Prior art patents or publications included in these Contentions may be related (such as a divisional, continuation, continuation-in-part, parent, or child) to earlier or later-filed patents or publications, may have counterparts filed in other jurisdictions, or may incorporate (or be incorporated by) other patents or publications by reference. The listed patents or publications are intended to be representative of these other patents or publications to the extent they exist. Samsung accordingly reserves the right to modify, amend, or supplement these Contentions with these related patents or publications, as well as other prior art references, upon further investigation. Additionally, any reference in these Contentions, including the appendices and/or exhibits thereto, to a specific subsection or subsections of 35 U.S.C. § 102, is merely exemplary, and Samsung expressly reserves the right to rely on additional or other sections of 35 U.S.C. § 102, as appropriate.

Although Samsung's investigation is ongoing, information available to date indicates that each prior art system disclosed above was at least (1) known or used in this country before the alleged invention of the claimed subject matter of the Asserted Patents; (2) in public use, on sale,

or offered for sale in this country more than one year before the effective filing date for the Asserted Patents; or (3) invented and not abandoned, suppressed, or concealed prior to the alleged invention of the Asserted Patents.

Much of the art identified in these Contentions reflects common knowledge and the state of the art prior to the filing or asserted priority dates of the Asserted Patents. As such, the obviousness combinations in these Contentions are intended to be exemplary. There are many possible combinations of the disclosed prior art, and the inclusion of certain exemplary combinations does not exclude other combinations. For example, where a particular contention calls for combining references, any of a number of references can be combined.

Depending on the construction of the claims of the Asserted Patents, and/or positions that Headwater or its expert witnesses may take concerning claim interpretation, infringement, and/or invalidity issues, different ones of the charted prior art references in the Exhibits may be of greater or lesser relevance and different combinations of these references may be implicated. Given the uncertainty, the charts may reflect alternative applications of the prior art against the Asserted Claims.

Citations to particular excerpts from the prior art are likewise exemplary and not exhaustive of the evidentiary support for the invalidity of the Asserted Patents contained in and/or concerning a particular piece of prior art. Samsung may rely on uncited portions of the prior art references, other documents or operational systems, the "Background of the Invention" and other relevant portions of the Asserted Patents, the prosecution histories of the Asserted Patents (including all cited references) and their related patents and applications, and forthcoming fact and expert testimony to provide context to aid in understanding the prior art reference and/or the cited portions of the references. Where Samsung cites to a particular figure in a reference, the citation

encompasses the caption and description of the figure and any text relating to or discussing the figure. Likewise, where Samsung cites text referring to a figure, the citation includes the figure as well (and vice versa).

A. Prior Art Under 35 U.S.C. § 102

Samsung contends that at least the primary prior art references (Exs. A-01 through -10, B-01 through -10, C-01 through C-10, D-01 through D-10) and systems (Exs. A-11 through -14, B-11 through -14, C-11 through 14, D-11 through -14) identified below, by themselves, anticipate the Asserted Claims:

Exhibits	Primary References and/or Systems
A-01, B-01, C-01, D-01	U.S. Patent Publication No. 2006/0039354A1 to Rao et al. ("Rao")
A-02, B-02, C-02, D-02	U.S. Patent Publication No. 2008/0080458A1 to Cole ("Cole")
A-03, B-03, C-03, D-03	U.S. Patent Publication No. 2008/0274715 to Heit ("Heit")
A-04, B-04, C-04, D-04	U.S. Patent No. 5,987,611 to Freund ("Freund")
A-05, B-05, C-05, D-05	U.S. Patent No. 8,375,136 to Roman et al. ("Roman")
A-06, B-06, C-06	U.S. Patent Publication No. 2009/0019163 to Pecus ("Pecus")
A-07, B-07	U.S. Patent No. 8,285,850 to Jones et al. ("Jones")
C-08	U.S. Patent Publication No. 2004/0224668 to Shell et al. ("Shell")
D-09	U.S. Patent Publication No. 2006/0149811 to Bennett et al. ("Bennett")
D-10	U.S. Patent No. 6,578,077 to Rakoshitz ("Rakoshitz")
A-11, B-11, C-11, D-11	Blackberry Devices

Exhibits	Primary References and/or Systems
A-12, B-12, C-12, D-12	Apple Devices
A-13, B-13, C-13, D-13	Android Devices
A-14, B-14, C-14, D-14	Windows Mobile Devices

Specifically, Samsung contends that at least the references and/or systems in the table above independently anticipate the Asserted Claims under 35 U.S.C. §§ 102(a), (b), (e), (f) and/or (g), as set forth in the charts attached as:

- Exhibits A-01 through Exhibits A-14 for the asserted claims of the ’110 patent;
- Exhibits B-01 through Exhibits B-14 for the asserted claims of the ’811 patent;
- Exhibits C-01 through Exhibits C-14 for the asserted claims of the ’359 patent;
- Exhibits D-01 through Exhibits D-14 for the asserted claims of the ’918 patent.

Where an asserted prior art reference in any attached claim charts relies on a claim of priority to assert a critical reference date under pre-AIA 35 U.S.C. § 102 *et seq*. (including pre-AIA § 102(e)), compliance with pre-AIA 35 U.S.C. § 112, first paragraph, or 35 U.S.C. § 112(a), is shown in an appendix to a given claim.

These charts, however, are exemplary. The claimed features are similarly described and suggested in other places (including in all of the documents cited during prosecution of each piece of prior art), and also were present when prior-art systems practicing the described prior art were used before the application that ultimately led to the Asserted Patents. Thus, where patents or other printed materials are disclosed, Samsung reserves the right to also rely on those materials as descriptions of systems, devices, or methods referenced therein, publicly used, and/or on sale or

known in the United States. Further, Samsung reserves the right to rely on other evidence of the prior art beyond merely the exemplary references cited in the charts attached as Exhibits.

Where patents or other printed materials are disclosed, Samsung reserves the right to also rely on those materials as descriptions of systems, devices, or methods referenced therein, publicly used, and/or on sale or known in the United States. Samsung reserves the right to also use those references to invalidate the claim under 35 U.S.C. § 103.

B. Prior Art Under 35 U.S.C. § 103

To the extent that a primary reference is deemed, by itself, not to anticipate or render obvious a claim for failing to teach one or more limitations, the claim would nonetheless have been obvious to a POSITA at the time of the invention by the combination of the primary reference with one or more other primary references and/or the knowledge of someone skilled in the art.

Moreover, Exhibits A-A, B-B, C-C, and D-D list secondary prior art references and identify, on limitation-by-limitation bases, exemplary disclosures where each secondary reference teaches the limitations of the asserted claims. To the extent that a primary reference is deemed, by itself, not to anticipate or render obvious a claim for failing to teach one or more limitations, the claim would nonetheless have also been obvious to a POSITA at the time of the invention by the additional combination of the primary reference with one or more of the references listed as disclosing those alleged missing limitations in Exhibits A-A, B-B, C-C, and D-D.

As such, a POSITA would have been motivated to combine any reference set forth in at least the following charts:

- Exhibit A-01 through Exhibit A-14 and Exhibit A-A for the asserted claims of the ’110 patent;
- Exhibit B-01 through Exhibit B-14 and Exhibit B-B for the asserted claims of the ’811 patent;

- Exhibit C-01 through Exhibit C-14 and Exhibit C-C for the asserted claims of the ’359 patent;
- Exhibit D-01 through Exhibit D-14 and Exhibit D-D for the asserted claims of the ’918 patent.

Such combinations would be achieved, for example, by merely combining the disclosures described in the respective claim charts for each reference.

These charts, however, are exemplary. The claimed features are similarly described and suggested in other places (including in all of the documents cited during prosecution of each piece of prior art), and also were present when prior-art systems practicing the described prior art were used before the application that ultimately led to the Asserted Patents. For example, like the Asserted Patents, U.S. Patent No. 8,375,136 B2 to Roman includes the concept of implementing network resource-related policies on mobile devices, including through user interfaces. Similarly, like the Asserted Patents, U.S. Patent No. 6,578,077 B1 to Rakoshitz includes the concept of monitoring network resources and managing network resources, including on wide and local area networks alike. *See* U.S. Patent No. 6,578,077 at 1:16-22, 2:38-65. Similarly to the Asserted Patents, U.S. Patent Pub. No. 2009/0019163 to Pecus includes the concept of allowing or restricting access to a network using policies to determine if certain requests are valid and approved. *See* U.S. Pat. Pub. No. 2009/0019163 at [0016], [0024], [0040]. Furthermore, like the Asserted Patents, U.S. Pat. Pub. No. 2006/0223495 to Cassett includes the concept of monitoring and logging usage of certain activities on a wireless devices, as well as analyzing the log and generate reports of same. U.S. Pat. Pub. No. 2006/0223495 at Abstract. Moreover, like the Asserted Patents, U.S. Pat. Pub. No. 2008/0274715 to Heit et al. includes the concept of tracking and providing information to a mobile device user through a user interface regarding potential costs of mobile services over different networks (i.e., CDMA and WiFi). *See* U.S. Pat. Pub. No. 2008/0274715 at Fig. 1, [0002]-[0004]. Like the Asserted Patents, U.S. Patent No. 8,918,812 to

Hayward also includes the known concepts of media players and media managers retrieving files over multiple networks. *See* U.S. Patent No. 8,918,812 at 1:11-2:16. Thus, where patents or other printed materials are disclosed, Samsung reserves the right to also rely on those materials as descriptions of systems, devices, or methods referenced therein, publicly used, and/or on sale or known in the United States. Further, Samsung reserves the right to rely on other evidence of the prior art beyond merely the exemplary references cited in the charts attached as Exhibits.

Samsung's assertion that the combinations above render the asserted claims obvious under 35 U.S.C. § 103 is not, and is not intended to be, an admission or suggestion that each reference does not independently anticipate the Asserted Claims under 35 U.S.C. § 102. *See Connell v. Sears, Roebuck & Co*., 722 F.2d 1542, 1548 (Fed. Cir. 1983) ("'[A]nticipation is the epitome of obviousness.'") (quoting *In re Fracalossi*, 681 F.2d 792, 794 (CCPA 1982)). Further, the fact that certain secondary references are listed solely in Exhibits A-A, B-B, C-C, and D-D is not intended to be an admission or suggestion that each individual reference cited therein does not also independently anticipate and/or render obvious the Asserted Claims under 35 U.S.C. §§ 102 and 103. Samsung expressly reserves the right to rely on any secondary reference cited in Exhibits A-A, B-B, C-C, and D-D as if it were set forth as a primary reference in Section IV.A, *supra*. Finally, the inclusion of the exemplary combinations in the attached Exhibits and Appendices does not exclude other combinations of prior art disclosed in this or previous sections.

1. Exemplary Combinations

Exemplary combinations of prior art references that render the Asserted Claims invalid as obvious under 35 U.S.C. § 103 are described in:

- Exhibit A-01 through Exhibit A-14 and Exhibit A-A for the asserted claims of the '110 patent;
- Exhibit B-01 through Exhibit B-14 and Exhibit B-B for the asserted claims of the '811 patent;

- Exhibit C-01 through Exhibit C-14 and Exhibit C-C for the asserted claims of the ’359 patent;
- Exhibit D-01 through Exhibit D-14 and Exhibit D-D for the asserted claims of the ’918 patent.

Moreover, each prior art reference or system may be combined with (1) information known to persons skilled in the art at the time of the alleged invention; (2) any other anticipatory prior art references or systems; and (3) any of the additional prior art identified above or in the prosecution of the Asserted Patents and related applications.

Below are examples of prior art references and/or systems that would have been combined by one of ordinary skill in the art at the time of the alleged invention. These combinations are merely examples. The Asserted Claims are rendered obvious by:

- Rao alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;
- Cole alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;
- Heit alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;
- Freund alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;
- Roman alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;
- Pecus alone or in combination with one or more Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo,

Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;

- Jones alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;

- Shell alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;

- Bennett alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;

- Rakoshitz alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;

- Blackberry Devices (including operating systems and applications running therein) alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;

- Apple Devices (including operating systems and applications running therein) with one or more applications alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;

- Android Devices (including operating systems and applications running therein) with one or more applications alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;

- Windows Mobile Devices (including operating systems and applications running therein) alone or in combination with one or more of Freund, Hendrickson, Green, Rao, Rao-2, Bocking, Cassett, Virdi, Pregont, Weill, Jobs, Jobs-2, Van Megen, Caldwell, Cole, Jajoo, Pecus, Wood, Akhtar, Montemurro, Ramesh, Bedi, Maes, Panpaliya, Orr, Lavain, Riggs, Hayward, Middleton, Abrol, Vadde, Aleksic, Malomsoky;

- Any combination of one or more of Android Devices, Apple Devices, Blackberry Devices, and Windows Mobile Devices, including the operating systems and applications running therein.

2. Exemplary Motivations to Combine

To the extent a finder of fact finds that any primary prior art reference does not disclose one or more limitations of an asserted claim, the asserted claim is nevertheless obvious because the allegedly missing limitations contain nothing beyond ordinary improvements. In other words, the asserted claim combines known elements to achieve predictable results or chooses between clear alternatives known to those of skill in the art, particularly in view of the state of the art as reflected in the relevant prior art.

Moreover, as explained above, it would have been obvious to a person of skill in the art at the time of the alleged invention of the asserted claims to combine any primary reference with any combination of other primary references or secondary references so as to practice the asserted claims. To the extent that Headwater argues that any concept claimed in the asserted claims is not disclosed in a primary reference, it would, at a minimum, have been obvious to adapt the primary reference to include the concept or combine it with other primary references or secondary references that disclose the concept. Each concept described and claimed in the Asserted Patents was known to those of skill in the art as available design choices for various network data saving features, battery saving features, and network connectivity management functions.

The Supreme Court has held that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). "When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one." *Id*. at 417. As the Supreme Court made clear, "[f]or the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would

recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *Id*.

To determine whether there is an apparent reason to combine the known elements in the fashion claimed by the patent at issue, a court can "look to 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 having ordinary skill in the art." *Id*. at 418. For example, obviousness can be demonstrated by showing "there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims." *Id*. at 420. "[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *Id*. Common sense also 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*.

However, the Supreme Court in *KSR* held that a claimed invention can be obvious even if there is no explicit teaching, suggestion, or motivation for combining the prior art to produce that invention. In summary, *KSR* holds that patents that are based on new combinations of elements or components already known in a technical field may be found to be obvious. *See, generally, KSR*, 127 S.Ct. 1727. Specifically, the Court in *KSR* rejected a rigid application of the "teaching, suggestion, or motivation [to combine]" test. *Id*. at 1741. "In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim." *Id*. at 1741-1742. "Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner

claimed." *Id*. at 1742. A key inquiry is whether the "improvement is more than the predictable use of prior art elements according to their established functions." *Id*. at 1740.

The rationale to combine or modify prior art references is significantly stronger when, as here, the references seek to solve the same problem, come from the same field, and correspond well to each other. *In re Inland Steel Co*., 265 F.3d 1354, 1362 (Fed. Cir. 2001). The Federal Circuit has held that two references may be combined as invalidating art under similar circumstances, namely "[the prior art] focus[es] on the same problem that the . . . patent addresses: enhancing the magnetic properties of . . . steel. Moreover, both [prior art references] come from the same field . . . . Finally, the solutions to the identified problems found in the two references correspond well." *Id*. at 1364 (concerning patents and prior art relating to improving the magnetic and electrical properties of steel).

In view of the Supreme Court's *KSR* decision, the PTO issued a set of Examination Guidelines. Examination Guidelines for Determining Obviousness Under 35 U.S.C. §103 in view of the Supreme Court Decision in *KSR International Co. v. Teleflex, Inc*., 72 Fed. Reg. 57526 (October 10, 2007). Those Guidelines summarized the *KSR* decision and identified various rationales for finding a claim obvious, including those based on other precedents. Those rationales include:

> (A) Combining prior art elements according to known methods to yield predictable results;
>
> (B) Simple substitution of one known element for another to obtain predictable results;
>
> (C) Use of known technique to improve similar devices (methods, or products) in the same way;
>
> (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
>
> (E) "Obvious to try" – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;

> (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;
>
> (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Id. at 57529. The above rationales likewise apply in rendering obvious the asserted claims of the Asserted Patents.

The references disclosed herein, alone or in combination, contain an explicit and/or implicit teaching or motivation to combine them due to the following: (1) the knowledge generally available to a POSITA; (2) the prior art references as understood by a POSITA; (3) the nature of the problem to be solved; (4) the fact that each prior art reference addresses similar problems; and (5) the knowledge of a POSITA that the disclosed elements had been or could be used together.

As an example of those reasons and motivations to combine, Cole, Panpaliya, Virdi, Green, Montemurro, Akhtar, Weill, Maes, Rao, Pecus, Jajoo, Jobs, Jobs-2, Caldwell, Maes, Cassett, Van Megen, Freund, Hayward, Hendrickson, Lavain, Riggs, Middleton, Aleksic, Abrol, Malomsoky, Vadde, and the various Android and non-Android prior art systems all generally relate to or include network activity management features, network resource management, and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. *See* Exs. A-01 through I-11; Exs. A-A through I-I. The prior art depicts, discloses, and discusses similar components and techniques for monitoring networks, network connectivity, network data usage, and identifying, tracking, and classifying whether applications are using certain networks, and applying policies to save data and network resources, among other things. *Id.* Thus, a person of ordinary skill in the art would understand the teachings of the references and systems to be applicable to one another. A POSITA would have also found it obvious to implement (i.e., obvious

to try) such combinations in order to utilize these well-known network management techniques in a wireless end-user device capable of communicating data for Internet service activities over both wireless wide area networks and wireless local area networks. *Id.*

For example, a POSITA would look to the primary and secondary references and systems discussed above to improve or tailor the disclosures thereof to help device manufacturers, wireless carriers, and customers reduce data usage and network congestion. A POSITA would have understood and been aware of motivations to conserve system resources, reduce network congestion, and cut cost by limiting data usage (e.g., by applying a control policy based on whether an application is running on a certain network type).

For example, Android Devices running at least Android versions 1.0-2.2 did this before the alleged inventions.[8] *See* Exs. A-13, B-13, C-13, D-13; *see also* SAMSUNG_PRIORART0005048 ("Monitor network connections (Wi-Fi, GPRS, UMTS, et.c)"); SAMSUNG_PRIORART0005049 ("networkType == TYPE_WIFI || networkType == TYPE_MOBILE"); SAMSUNG_PRIORART0005049 ("TYPE_MOBILE = 0" and "TYPE_WIFI = 1"); SAMSUNG_PRIORART0005050-51 ("Ensure that a network route exists to deliver traffic to the specified host via the specified network interface."); SAMSUNG_PRIORART0005487 at ConnectivityManager ("Monitor network connections (Wi-Fi, GPRS, UMTS, etc.)"); *id.* at NetworkInfo ("The device is on a network other than the home network (i.e., roaming)"); SAMSUNG_PRIORART0005353 at Fundamentals.jd ("To keep the music going, the media player activity could start a service to run in the background. The system would then keep the music playback service running even after the activity that started it leaves the screen."); *see*

[8] For Android versions 1.0-2.2, code from earlier versions carried over into later versions. Thus, any code cited from an earlier version of Android also exists in the later version.

generally SAMSUNG_PRIORART0005042-5624. Additionally, Android Devices running at least Android versions 1.0-2.2 were capable of implementing a policy distinguishing between network types. *See, e.g.*, SAMSUNG_PRIORART0000065-69 (Nexus One); SAMSUNG_PRIORART0005207-11 (T-Mobile G1). Accordingly, a POSITA would find these goals and methods for achieving them obvious, would further seek to combine or modify the disclosure of any given primary and secondary references and/or systems to achieve those goals, and would have readily understood that doing so could increase device/network performance, improve user interactions and/or satisfaction, and reduce cost. *See, e.g.*, Rao at [0002] (titled "Systems and Methods for Client-Side Application-Aware Prioritization of Network Communications," describing "[t]he invention generally relates to optimizing peer to-peer network communications, and in particular, to techniques for application-aware prioritizations of network communications on a client"); Rao at [0003] (teaching that "[i]t is desirable to provide application-aware, client-specific prioritization of packet traffic" to avoid certain situations); Cole, at Abstract (titled, "Connection Manager with Deferred Configuration" describing "establishing an initial connection to a remote network . . . [and] user of the mobile device is queried for configuration information related to the selected second communication interface"); Cole at [0067] ("[A] user may not want to use a 3G network for fast connection because the use may incur added costs per connection."); Roman at Abstract (titled "Defining and implementing policies on managed object-enabled mobile devices," describing "The system is configured to manage policies, including decision policies and active policies, on mobile devices. The system includes a device policy repository, a policy decision point, a decision policy enforcer, and an active policy enforcer. The system includes a server-side process configured to allow creation, modification and transmission of defined policies to the mobile client device, and a client-side process executed on the mobile

client device"); Freund at Abstract (titled "System and methodology for managing internet access on a per application basis for client computers connected to the internet," describing "methods for monitoring access to an open network, such as a WAN or the Internet, … [w]ith this information, the system can determine if a particular process in question should have access to the Internet and what kind of access"); Freund at 11:21-28 ("Further, per application monitoring simplifies the task of tracking bandwidth utilization for a network, including providing detailed review on how the Internet access is being used. This greatly eases planning of hardware and connection requirements. Inadvertent disruptions of the network by individual users, such as bandwidth hording by a user using RealAudio for listening to a Web audio 'broadcast,' can be averted."), 27:9-13 ("This allows an administrator, for instance, to Specify that a rule blocking a RealAudio application remains in force during working hours on weekdays-that is, at times when network traffic is already congested"); Montemurro at [0003] ("Selection among the different radio access technologies may be driven by the different properties of the technologies such as bandwidth, range, cost, and power consumption, among other considerations."); Van Megen at 1:6-23 ("Unfortunately, the default network connection may not be the best use of available network resources or may not be in the best interest of the user at the particular time. For example, there may be widely different data transfer rates between available networks and the default selection of a lower bandwidth connection may unduly increase download time or tie up processor capacity. Further, different connection options may have different usage fees and the default network connection may not be the best value to the user at the time."), 2:30-36 ("Because the cost to transfer data over Wi-Fi connection is generally negligible compared to the cost per data unit (e.g., per megabyte (MB)) transferred over a GPRS connection, it may be desirable to use a Wi-Fi interface whenever possible. The same preference may be true with respect to the available

bandwidth, which in general is much larger on a Wi-Fi net work compared to a GPRS connection."), 5:16-26 (noting that binding an application to WLAN prevents "unwanted costs for the user" which would be incurred if the application operated over "a more expensive network connection"); Maes at 1:32-39 ("[A]n access provider may offer a variety of different billing models to customers. Access providers may charge customers based on data traffic, based on services used (which can include access of content), or a combination of data traffic and service usage. With each of these models, the access provider may use a variety of different rating schemes. The rating schemes may be per usage, per levels of usage, per subscription, or combination of these schemes."); Orr at 1:15-16 ("Multimedia content and other data is typically delivered over a communication network to devices"), and 3:41-55 ("The services 114 provide service to the applications. For example, a media streaming service operates to obtain streaming content to satisfy a request from one or more applications. File delivery is another service that may be requested by an application. The services communicate with a device abstraction interface 112 to obtain content to perform the requested service. The device abstraction interface 112 operates to provide an interface between the services 114 and a protocol stack 110. The device abstraction interface 112 receives requests from the services 114 to obtain content from the protocol stack 110. When the content is received, to the device abstraction inter face 112 passes the content to the requesting service. The protocol stack 110 operates to obtain and store content from a network resource."); Rakoshitz at 1:15-21 (titled "Traffic monitoring tool for bandwidth management" describes a "technique . . . for monitoring and allocating bandwidth . . . on a wide area network of computers . . . but it would be recognized that the present invention has a much broader range of applicability including local area networks") at 3:35-37 ("the present invention implements its traffic management technique using a simple and easy to use 'rule' based technique"), at 9:18-22

("Directory services 224 and GUI 201 couple to an application-programming interface ("API") 223. The API is coupled to a traffic management or bandwidth management tool 208 with at least three modules, including a policy engine module 231"), at 14:61-67 ("Streaming multimedia applications, Such as Real Audio/Video and Vxtreme, can hog a lot of bandwidth but are also delay and bandwidth Sensitive. If they are not critical, they are controlled best by Setting a high priority and a policy to limit admission of Sessions So that bandwidth use is capped but admitted Sessions have a reasonable quality"); Hayward at 1:8-10 ("[t]his invention relates to media players for playing media files, such as audio and video files, and more particularly to embedded or wrapped media players"), at 3:6-7 ("Computer system network may be a local area network (LAN) or a wide area network (WAN) for example"), at 3:25-27 ("Client may also be a wireless device, such as a hand held unit (e.g., cellular telephone) that connects to and communicates through the Internet …").

In particular, a POSITA would have been motivated to define policies that manage, limit, and/or track network access and usage—especially when communicating over a WWAN or roaming—to reduce network congestion and reduce costly data usage associated with data-limited carrier service plans. *See, e.g.*, Vadde at [0001] ("The cost of mobile operator data plans is often based on usage. Each data plan has data usage limits, but users have difficulty determining when the data usage limits have been reached or are about to be reached with existing systems. As a result, users can incur excess data charges. Further, with existing systems, users are unable to determine the relative costs incurred by different applications executing on a mobile telephone"), at [0009] ("Further, aspects of the disclosure enable users 104 to save money on their monthly network operator bill (e.g., wireless bill)"); Cassett at [0005] ("As the functionality and the bandwidth requirement of wireless devices has grown far beyond the requirements of a cellular

telephone, the need to manage the bandwidth, maintenance and service of the wireless network has become critical to maintaining quality of service to the user and to maintain and increase the profitability of the network carrier. Accordingly, it would be advantageous to provide apparatus and methods for providing consumer usage pattern reports for a wireless device"); Montemurro at [0003]-[0004] ("Selection among the different radio access technologies may be driven by the different properties of the technologies such as bandwidth, range, cost, and power consumption, among other considerations…There are costs associated with application access from these different networks."); Rao at [0003] (teaching that "[i]t is desirable to provide application-aware, client-specific prioritization of packet traffic" to avoid situations where "a network packet generated or received for an application running in the background" is "processed ahead of a network packet generated or received for the application running in the foreground" "and currently in active use by the user"); *see also* Exs. A-01 through D-14; Exs. A-A through D-D.

As an example, one of skill in the art would have been motivated to combine the teachings of Android and references such as Cole, Freund, Rao, Pecus, Roman, Cassett and/or Heit such that Android's network connectivity policies could include functionality such as application-specific data limits, rules governing network traffic during times of congestion, and/or other traffic control policies. Android OS could already restrict data based on certain network-related conditions, such as during times of roaming, based on the network connection technology (e.g., 2G/3G), or when applications were attempting to access the network in the background. A POSITA would have been motivated to make such a combination to provide additional flexibility and control over a mobile device's network access. Such additional features could have been used to prioritize application network access, control overall data usage, and/or extend battery life.

One of skill in the art would also have been motivated to combine the different publications and patents that were authored by employees of a given company or assigned to the same assignee and/or related to the same subject matter. Additionally, one of skill in the art would have been motivated to combine different references that were authored, developed, or invented by the same individual(s) related to the same subject matter. The common inventor/author/architect of the references demonstrate that they relate to continued work in a common field of effort and continued related developments in that field. One of skill in the art would, therefore, combine the references related to each individual. Additionally, based on the teachings of the references and/or the knowledge of one of ordinary skill, one of skill in the art would have been motivated to combine different references from the same company. For example, a POSITA would have been motivated to combine at least Araujo, Vadde, and Van Megen, all of which are currently assigned to the same company (e.g., Microsoft). And, one of skill in the art would have been motivated to combine prior art systems or products (e.g., Blackberry OS) with any related or applicable patent or non-patent documentation or literature relating to that system or owned by the same entity (e.g., Heit), including for the reason that these materials are related. Similarly, one of skill in the art would have been motivated to combine prior art systems or products (e.g., Windows Mobile Devices) with any related or applicable patent or non-patent documentation or literature relating to that system or owned by the same entity (e.g., Araujo, Vadde, and Van Megen), including for the reason that these materials are related.

Further, below are additional motivations to combine prior art for particular claim limitations. The following discussions of specific claim limitations are merely examples and are not limiting. For example, where a POSITA would have been motivated to combine references which together render obvious limitations from the independent claims, a POSITA would have

also been motivated to combine said references in such a way as to render obvious various asserted dependent claims. The motivations identified with respect to any one Asserted Patent apply with equal force to any of the other Asserted Patents by virtue of their relationship and similarities.

a. '110 patent

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach a first service policy associated with the first wireless network, the first service policy configured to at least assist in reducing data usage associated with a first service activity over the first wireless network, the first service activity being less than all service activities available to the wireless device, the first service policy for enabling control of the first service activity on the first wireless network that is different from how the first service activity is controlled on the second wireless network, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses a first service policy associated with the first wireless network, the first service policy configured to at least assist in reducing data usage associated with a first service activity over the first wireless network, the first service activity being less than all service activities available to the wireless device, the first service policy for enabling control of the first service activity on the first wireless network that is different from how the first service activity is controlled on the second wireless network. For example, several prior art references and systems, including at least Montemurro, Rao, Cole, Maes, Akhtar, and Ramesh disclose this limitation. *See* Exs. A-01; A-02; A-03; A-04; A-05; A-06; A-07; A-11, A-12, A-13, A-14; *see also* A-A. It would have been obvious to a person skilled in the art to incorporate such functionality, components, and/or features. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that service policies, including different variations of

certain service policies, were routine design choices available for mobile systems as of the critical date. Moreover, differential traffic control was well known as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include a first service policy associated with the first wireless network, the first service policy configured to at least assist in reducing data usage associated with a first service activity over the first wireless network, the first service activity being less than all service activities available to the wireless device, the first service policy for enabling control of the first service activity on the first wireless network that is different from how the first service activity is controlled on the second wireless network. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach obtain, through the user interface, a user input specifying at least an aspect of the first service policy, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses obtain, through the user interface, a user input specifying at least an aspect of the first service policy. For example, several prior art references and systems, including at least Montemurro, Freund, Caldwell, Bocking, Virdi, Maes, Orr, and Rao, disclose one or more processors. Exs. A-01; A-02; A-03; A-04; A-05; A-06; A-07; A-11, A-12, A-13, A-14; *see also* A-A. It would have been obvious to a person skilled in the art to incorporate such functionality, components, and/or features. For example, a POSITA would understand that each of these references generally relate to network

data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that the inclusion of user interfaces for inputs was a routine design choice, commonly implemented in mobile devices as of the critical date. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include obtain, through the user interface, a user input specifying at least an aspect of the first service policy. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach identify an intended, attempted, or successful data communication over the first wireless network, the intended, attempted, or successful data communication over the first wireless network being associated with the first service activity, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses identify an intended, attempted, or successful data communication over the first wireless network, the intended, attempted, or successful data communication over the first wireless network being associated with the first service activity. For example, several prior art references and systems, including at least Jobs, Pecus, Akhtar, Wood, and Rao disclose this limitation. Exs. A-01; A-02; A-03; A-04; A-05; A-06; A-07; A-11, A-12, A-13, A-14; *see also* A-A. It would have been obvious to a person skilled in the art to incorporate such functionality, components, and/or features. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus

constitute analogous art within the same field of endeavor. In addition, a POSITA would be motivated to incorporate such functionality in order to improve device performance and efficiency, and reduce costs associated with data usage. A POSITA would have also understood and been aware of motivations to conserve system resources, reduce network congestion, and cut cost by limiting data usage and/or system resources. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include identify an intended, attempted, or successful data communication over the first wireless network, the intended, attempted, or successful data communication over the first wireless network being associated with the first service activity. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate one or more of the dependent claims, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art discussed in Exhibit A-A. For example, Cole, Jobs, Jobs-2, Rao, Pecus, Montemurro, disclose one or more of the asserted dependent claim limitations. *See* Ex. A-A. It would have been obvious to a person skilled in the art to incorporate such functionality, components, and/or features. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would be motivated to incorporate such functionality in order to improve device performance and efficiency, and reduce costs associated with data

usage. A POSITA would also have been motivated to combine any of these references with any of the primary references for the reasons discussed in Section IV.B.2. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include the features described in Exhibit A-A. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

b. '811 patent

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach a control policy associated with a first application on the wireless device, the first application at least enabling the wireless device to access at least a first data service over the first wireless network, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses a control policy associated with a first application on the wireless device, the first application at least enabling the wireless device to access at least a first data service over the first wireless network. For example, several prior art references and systems, including at least Rao, Jobs, Jobs-2, Montemurro, Cole, Maes, Akhtar, Ramesh, Caldwell, Wood, Virdi, Cassett, disclose this limitation. *See* Exs. B-01; B-02; B-03; B-04; B-05; B-06; B-07; B-11; B-12; B-13; B-14; *see also* B-B. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that control policies, including control policies enabling access over a network, were routine design choices available for mobile systems as of the critical date. Moreover, control policies and differential traffic control was well known

as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include a control policy associated with a first application on the wireless device, the first application at least enabling the wireless device to access at least a first data service over the first wireless network. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach determine at least an aspect of the control policy based on the user input, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses determine at least an aspect of the control policy based on the user input. For example, several prior art references and systems, including at least Rao, Montemurro, Freund, Cole, Caldwell, Wood, Panpaliya, disclose this limitation. *See* Exs. B-01; B-02; B-03; B-04; B-05; B-06; B-07; B-11; B-12; B-13; B-14; *see also* B-B. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that control policies, including control policies enabling access over a network, were routine design choices available for mobile systems as of the critical date. Moreover, control policies and differential traffic control was well known as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include

determine at least an aspect of the control policy based on the user input. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach determine the at least an aspect of the control policy for at least assisting in restricting or preventing a first access to the first wireless network by the first application when the first application is executing, the at least an aspect of the control policy enabling a first control of the first access to the first wireless network by the first application when the first application is executing that differs from a second control of a second access to the first wireless network by a second application on the wireless device, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses the at least an aspect of the control policy for at least assisting in restricting or preventing a first access to the first wireless network by the first application when the first application is executing, the at least an aspect of the control policy enabling a first control of the first access to the first wireless network by the first application when the first application is executing that differs from a second control of a second access to the first wireless network by a second application on the wireless device. For example, several prior art references and systems, including at least Rao, Montemurro, Freund, Cole, Caldwell, Wood, Panpaliya, and Pecus, disclose this limitation. *See* Exs. B-01; B-02; B-03; B-04; B-05; B-06; B-07; B-11; B-12; B-13; B-14; *see also* B-B. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same

field of endeavor. In addition, a POSITA would understand that control policies, including control policies differentiating between networks to determine access, were routine design choices available for mobile systems as of the critical date. Moreover, control policies and differential traffic control was well known as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include determine the at least an aspect of the control policy for at least assisting in restricting or preventing a first access to the first wireless network by the first application when the first application is executing, the at least an aspect of the control policy enabling a first control of the first access to the first wireless network by the first application when the first application is executing that differs from a second control of a second access to the first wireless network by a second application on the wireless device. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach apply the control policy, thereby at least assisting in restricting or preventing the first access to the first wireless network by the first application when the first application is executing, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses apply the control policy, thereby at least assisting in restricting or preventing the first access to the first wireless network by the first application when the first application is executing. For example, several prior art references and systems, including at least Rao, Cole, Pecus, Jobs-2, and Wood disclose this limitation. *See* Exs. B-01; B-02; B-03; B-04; B-

05; B-06; B-07; B-11; B-12; B-13; B-14; *see also* B-B. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that control policies, including control policies differentiating between networks to determine access, were routine design choices available for mobile systems as of the critical date. Moreover, control policies and differential traffic control was well known as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include apply the control policy, thereby at least assisting in restricting or preventing the first access to the first wireless network by the first application when the first application is executing. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate one or more of the dependent claims, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art discussed in Exhibit B-B. For example, Panpaliya, Virdi, Green, Montemurro, Akhtar, Weill, Maes, Rao, Pecus, Jajoo, Jobs, Jobs-2, Caldwell, Maes, Cassett, Van Megen, and Freund disclose one or more of the asserted dependent claim limitations. *See* Ex. B-B. It would have been obvious to a person skilled in the art to incorporate such functionality, components, and/or features. For example, a POSITA would understand that each of these references generally relate to network data saving features and

network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would be motivated to incorporate such functionality in order to improve device performance and efficiency, and reduce costs associated with data usage. A POSITA would also have been motivated to combine any of these references with any of the primary references for the reasons discussed in Section IV.B.2. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include the features described in Exhibit B-B. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

c. '359 patent

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach a wireless wide area network (WWAN) modem to receive and transmit Internet data between the device and at least one WWAN when configured for and connected to the at least one WWAN, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses a wireless wide area network (WWAN) modem to receive and transmit Internet data between the device and at least one WWAN when configured for and connected to the at least one WWAN. For example, several prior art references and systems, including at least Cassett, Virdi, Van Megen, Caldwell, and Cole disclose this limitation. *See* Exs. C-01; C-02; C-03; C-04; C-05; C-06; C-08; C-11; C-12; C-13; C-14; *see also* C-C. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that

WWAN networks and modems were routine design choices available for mobile systems as of the critical date. Moreover, WWAN networks were well known as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include a wireless wide area network (WWAN) modem to receive and transmit Internet data between the device and at least one WWAN when configured for and connected to the at least one WWAN. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach a wireless local area network (WLAN) modem to receive and transmit Internet data between the device and at least one WLAN when configured for and connected to the at least one WLAN, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses a wireless local area network (WLAN) modem to receive and transmit Internet data between the device and at least one WLAN when configured for and connected to the at least one WLAN. For example, several prior art references and systems, including at least Cassett, Virdi, Van Megen, Caldwell, and Cole disclose this limitation. *See* Exs. C-01; C-02; C-03; C-04; C-05; C-06; C-08; C-11; C-12; C-13; C-14; *see also* C-C. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that WLAN networks and modems were routine design choices available for mobile systems as of the critical date.

Moreover, WLAN networks were well known as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include a wireless local area network (WLAN) modem to receive and transmit Internet data between the device and at least one WLAN when configured for and connected to the at least one WLAN. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach one or more processors configured to apply a stored WWAN differential traffic control policy to Internet data service provided using the WWAN modem and the at least one WWAN, and indicate to a particular application, via an application program interface (API), one or more network access conditions based on the applied WWAN differential traffic control policy, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses one or more processors configured to apply a stored WWAN differential traffic control policy to Internet data service provided using the WWAN modem and the at least one WWAN, and indicate to a particular application, via an application program interface (API), one or more network access conditions based on the applied WWAN differential traffic control policy. For example, several prior art references and systems, including at least Rao, Jobs, Jobs-2, Montemurro, Freund, Cole, Maes, Ramesh, Caldwell, Wood, Bocking, Weill, Virdi, Cassett, Pecus, Jajoo, Van Megen, disclose this limitation. *See* Exs. C-01; C-02; C-03; C-04; C-05; C-06; C-08; C-11; C-12; C-13; C-14; *see also* C-C. For example, a POSITA would

understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that WLAN networks and modems were routine design choices available for mobile systems as of the critical date. Moreover, WLAN networks were well known as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include a wireless local area network (WLAN) modem to receive and transmit Internet data between the device and at least one WLAN when configured for and connected to the at least one WLAN. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach wherein the one or more network access conditions includes a network access condition that indicates the unavailability to the particular application of an Internet data service that is currently available via the WWAN modem to a different application, but that is indicated as unavailable to the particular application, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses wherein the one or more network access conditions includes a network access condition that indicates the unavailability to the particular application of an Internet data service that is currently available via the WWAN modem to a different application, but that is indicated as unavailable to the particular application. For example, several prior art references and systems, including at least Maes, Freund, Wood,

Pecus, Jobs-2 disclose this limitation. *See* Exs. Exs. C-01; C-02; C-03; C-04; C-05; C-06; C-08; C-11; C-12; C-13; C-14; *see also* C-C. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that control policies and network control policies, as well as network blocking, were routine design choices available for mobile systems as of the critical date. Moreover, control policies and network control policies, as well as network blocking, were well known as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include wherein the one or more network access conditions includes a network access condition that indicates the unavailability to the particular application of an Internet data service that is currently available via the WWAN modem to a different application, but that is indicated as unavailable to the particular application. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate one or more of the dependent claims, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art discussed in Exhibit C-C. For example, Rao, Pecus, Akhtar, Weill, Jajoo, Montemurro, Cole, Cassett, Jobs, Jobs-2 disclose one or more of the asserted dependent claim limitations. *See* Ex. C-C. It would have been obvious to a person skilled in the art to incorporate such functionality, components, and/or features. For

example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would be motivated to incorporate such functionality in order to improve device performance and efficiency, and reduce costs associated with data usage. A POSITA would also have been motivated to combine any of these references with any of the primary references for the reasons discussed in Section IV.B.2. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include the features described in Exhibit C-C. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

d. '918 patent

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach a second API containing at least one second call accessible to each of the plurality of device applications, the second API callable by each of the plurality of device applications to make a data transfer request for a media object associated with a network resource identifier supplied by the calling device application, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses a second API containing at least one second call accessible to each of the plurality of device applications, the second API callable by each of the plurality of device applications to make a data transfer request for a media object associated with a network resource identifier supplied by the calling device application. For example, several prior art references and systems, including at least Montemurro, Rao, Virdi, Panpaliya, Ramesh, Freund, Hayward, Hendrickson, Lavain, Riggs, Middleton, Abrol disclose this

limitation. *See* Exs. D-01; D-02; D-03; D-04; D-05; D-09; D-10; D-11; D-12; D-13; D-14; *see also* D-D. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that APIs, including use of APIs to manage media objects, were routine design choices available for mobile systems as of the critical date. Moreover, APIs, including use of APIs to manage media objects, were well known as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include a second API containing at least one second call accessible to each of the plurality of device applications, the second API callable by each of the plurality of device applications to make a data transfer request for a media object associated with a network resource identifier supplied by the calling device application. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach a media service manager prompted by the second call, to manage network data transfers for the media object by interfacing with the network stack to retrieve the media object associated with the network resource identifier via the wireless modem and the wireless network, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses a media service manager prompted by the second call, to manage network data transfers for the media object by interfacing with the network stack to retrieve the

media object associated with the network resource identifier via the wireless modem and the wireless network. For example, several prior art references and systems, including at least Montemurro, Rao, Virdi, Panpaliya, Ramesh, Freund, Hayward, Hendrickson, Riggs, Middleton, Orr, Cassett disclose this limitation. *See* Exs. D-01; D-02; D-03; D-04; D-05; D-09; D-10; D-11; D-12; D-13; D-14; *see also* D-D. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that media managers were routine design choices available for mobile systems as of the critical date. Moreover, media managers were well known as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include a media service manager prompted by the second call, to manage network data transfers for the media object by interfacing with the network stack to retrieve the media object associated with the network resource identifier via the wireless modem and the wireless network. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

To the extent that any primary reference is deemed not to anticipate a claim for failing to teach "one or more service classification and measurement agents to associate wireless network data usage for the media object network data transfers with the device application . . . and to reconcile wireless network data usage for each of the plurality of device applications to track an aggregate wireless network data usage attributable to each of the plurality of device applications .

. .", it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art that discloses "one or more service classification and measurement agents to associate wireless network data usage for the media object network data transfers with the device application . . . and to reconcile wireless network data usage for each of the plurality of device applications to track an aggregate wireless network data usage attributable to each of the plurality of device applications . . . ." For example, several prior art references and systems, including at least Montemurro, Rao, Roman, Van Megen, Pointer, Virdi, Panpaliya, Ramesh, Freund, Hayward, Hendrickson, Riggs, Middleton, Orr, Cassett, Pecus disclose this limitation. *See* Exs. Exs. D-01; D-02; D-03; D-04; D-05; D-09; D-10; D-11; D-12; D-13; D-14; *see also* D-D. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would understand that tracking and aggregating data usage, including through the use of agents, were routine design choices available for mobile systems as of the critical date. Moreover, tracking and aggregating data usage, including through the use of agents, were well known as of the critical date and commonly used to connect mobile devices to the internet. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include "one or more service classification and measurement agents to associate wireless network data usage for the media object network data transfers with the device application . . . and to reconcile wireless network data usage for each of the plurality of device applications to track an aggregate wireless network data usage attributable to each of the plurality of device applications . . . ." A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the

POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate one or more of the dependent claims, it would have been obvious to a POSITA at the time of the invention to combine the primary reference with any of the prior art discussed in Exhibit D-D. For example, Montemurro, Rao, Roman, Van Megen, Pointer, Virdi, Panpaliya, Ramesh, Freund, Hayward, Hendrickson, Riggs, Middleton, Orr, Cassett, Pecus disclose one or more of the asserted dependent claim limitations. *See* Ex. D-D. It would have been obvious to a person skilled in the art to incorporate such functionality, components, and/or features. For example, a POSITA would understand that each of these references generally relate to network data saving features and network connectivity management functions, and thus constitute analogous art within the same field of endeavor. In addition, a POSITA would be motivated to incorporate such functionality in order to improve device performance and efficiency, and reduce costs associated with data usage. A POSITA would also have been motivated to combine any of these references with any of the primary references for the reasons discussed in Section IV.B.2. Thus, design and market forces would have motivated a POSITA to modify any of the primary references to include the features described in Exhibit D-D. A POSITA would also have had a reasonable expectation of success in making such modifications to any primary reference. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

3. Lack of Secondary Indicia of Nonobviousness

Samsung is not aware of any evidence that would tend to establish any secondary considerations of non-obviousness. This lack of evidence further renders the Asserted Claims

obvious. Proving any such secondary considerations is Headwater's burden. *See, e.g., ZUP, LLC v. Nach Mfg., Inc.*, 896 F.3d 1365, 1373 (Fed. Cir. 2018) ("[A] patentee bears the burden of production with respect to evidence of secondary considerations of nonobviousness."). Accordingly, Samsung reserves all rights regarding its full contention in this respect until after Headwater completes its final and binding disclosure of any such evidence and contentions. In the meantime, Samsung note the complete lack of any such evidence in the record.

Headwater has disclosed no evidence of, and Samsung knows of no viable evidence to suggest:

- **The alleged invention's commercial success**. Indeed, no products are known to practice the Asserted Claims. To the extent Headwater has made unsupported allegations that "ItsOn software may incorporate or reflect the claims of the Asserted Patents," Headwater has first failed to make any adequate disclosure of which specific products allegedly embody any claims of any Asserted Patents; second, has failed to produce any documents, materials, or disclosures in support of its vague, baseless contention; and third, failed to provide any evidence that any such specifically embodying product was commercially successful. To the extent Headwater asserts that Samsung's products practice the Asserted Patents, Samsung denies that assertion and incorporates its responses to date and any future contentions, expert reports, and testimony. Further, Samsung knows of no nexus between any commercial success and the Asserted Claims. *See, e.g., Windsurfing Int'l Inc. v. AMF* , 782 F.2d 995 (Fed. Cir. 1986) (considerations such as intervening, non-covered technological innovations, popularity of accessories, and advertising expense are all relevant to the nexus determination). If any commercial success is due to any of the concepts discussed in

the Asserted Patents, those concepts are also present in the prior art, as described above, and thus do not support any commercial success that is relevant to the question of obviousness. *See Tokai Corp. v. Easton Enters, Inc.* , 632 F.3d 1358, 1369–70 (Fed. Cir. 2011) ("If commercial success is due to an element in the prior art, no nexus exists."); *In re Huai-Hung Kao* , 639 F.3d 1057, 1068 (Fed. Cir. 2011) ("Where the offered secondary consideration actually results from something other than what is both claimed and *novel* in the claim, there is no nexus to the merits of the claimed invention."); *Ormco Corp. v. Align Tech., Inc.* , 463 F.3d 1299, 1312 (Fed. Cir. 2006) ("[I]f the feature that creates the commercial success was known in the prior art, the success is not pertinent.").

- **Alleged commercial success via licensing**. Headwater has presented no evidence of commercial success via a licensing program.
- **Long felt but unresolved needs**. Headwater has presented no evidence of any long felt and unresolved need.
- **No industry praise.** There is also no evidence of industry praise for the alleged invention of the Asserted Patents or any functionality that allegedly practices the Asserted Patents. To the extent any praise is related to any functionality that allegedly practices the Asserted Patents, that praise is not due to the allegedly novel features of the Asserted Patents, but instead only to features present in the prior art, which is not a sufficient nexus to be relevant to the question of industry praise for purposes of obviousness. *See Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 (Fed. Cir. 2008). Praise of Samsung's mobile phones or of certain Google Android features is not praise of the Asserted Patents.

- **Unexpected results**: No evidence of any such unexpected results is known. As discussed above, the concepts contained in the Asserted Claims were already combined in the same manner as the asserted. These prior art systems, as described in the above-referenced exhibits, disclosed the same combination of elements, and the same result of that combination, that is recited in the claim. Thus, there were no unexpected results that arose from combining the well-known elements in the Asserted Claims.
- **The failure of others**. No evidence of any such failure is known.
- **Skepticism by experts**. No experts or person of skill expressed skepticism about implementing the alleged inventions.
- **Teaching away by others**. No evidence of any such teaching is known.
- **Recognition of a problem**. As discussed above, the industry recognized the problem and had already discussed multiple approaches that implemented the Asserted Claims to solve that problem.
- **Copying of the alleged invention by competitors**. No evidence of any such copying is known. *See Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1366 (Fed. Cir. 2001) (allegedly copied feature must be an embodiment of the patented claims).

V. INVALIDITY UNDER 35 U.S.C. § 112

Headwater has not yet provided a claim construction for many of the terms and phrases that Samsung anticipates will be in dispute. Samsung, therefore, cannot provide a complete list of its § 112 defenses because Samsung does not know whether Headwater will proffer a construction for certain terms and phrases that is broader than, or inconsistent with, the construction that would be supportable by the disclosure set forth in the specification.

Nevertheless, Samsung contends that, at least under Headwater's actual and/or apparent application of the claims, the Asserted Claims are invalid based on inadequate written description and/or a lack of enablement under 35 U.S.C. § 112 ¶ 1, and/or based on indefiniteness under 35 U.S.C. § 112 ¶ 2.

Samsung's aforementioned identification of prior art that anticipates and/or renders obvious particular claim elements, including the attached claim charts, should not be deemed as an admission that any claim element satisfies the requirements of 35 U.S.C. § 112. While Samsung asserts below that a claim is invalid under 35 U.S.C. § 112 (such as because of a failure to particularly point out and distinctly claim the alleged invention, failure to provide written description support in the specification, and/or failure to enable one of ordinary skill in the art to make and use the alleged invention), Samsung has nonetheless provided prior art disclosures that anticipate or render obvious the claim on the assumption that Headwater will contend those claims are definite, are supported by an adequate written description, and are adequately enabled.

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

Certain claims in the Asserted Patents are invalid for lack of written description. Section 112 requires that a patent specification "contain a written description . . . of the manner and process of making and using [the invention] 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." 35 U.S.C. § 112 ¶ 1. A patent's written description "must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed." *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). The disclosure must "convey to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Id.* The level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and

predictability of the relevant technology, but a "mere wish or plan" for obtaining the alleged invention does not satisfy the written description requirement. *Novozymes A/S v. DuPont Nutrition Biosciences APS*, 723 F.3d 1336, 1344 (Fed. Cir. 2013). Put another way, "a description that merely renders the invention obvious does not satisfy the requirement." *Ariad*, 598 F.3d at 1351. Instead, "all the limitations must appear in the specification." *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). Samsung contends that, at least under Headwater's actual and/or apparent application of the claims, the specifications of at least one or more of the Asserted Patents do not include a sufficient written description supporting the claims. Moreover, Samsung contends that Headwater's actual and/or apparent application of the Asserted Claims covers a broader scope than is justified and/or supported by the written description provided in the specifications of at least one or more of the Asserted Patents. *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1159 (Fed. Cir. 1998); *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1346 (Fed. Cir. 2005); *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368 (Fed. Cir. 2009).

Section 112 likewise requires that the specification "enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the" alleged invention. 35 U.S.C. § 112 ¶ 1. A claim is not enabled if, "at the effective filing date of the patent, one of ordinary skill in the art could not practice their full scope without undue experimentation." *Wyeth and Cordis Corp. v. Abbott Labs.*, 720 F.3d 1380, 1384 (Fed. Cir. 2013). "This important doctrine prevents both inadequate disclosure of an invention and overbroad claiming that might otherwise attempt to cover more than was actually invented." *MagSil Corp. v. Hitachi Global Storage Techs., Inc.*, 687 F.3d 1377, 1381 (Fed. Cir. 2012). Samsung contends that, at least under Headwater's actual and/or apparent application of the claims, the specifications of at least one or

more of the Asserted Patents do not enable any person skilled in the relevant art to make and use the alleged inventions of the Asserted Claims without undue experimentation.

Furthermore, under Headwater's actual and/or apparent application of the claims, the specifications of at least one or more of the Asserted Patents do not enable the broad scope of the Asserted Claims as Headwater asserts. Samsung contends that Headwater's actual and/or apparent application of the Asserted Claims covers a broader scope than is justified, and certainly broader than is enabled in the specifications. As explained below, the specifications of at least one or more of the Asserted Patents have not enabled a person of ordinary skill in the art at the time of the alleged invention to perform the full scope of all Asserted Claims.

Each of the asserted claims below are invalid because, at least to the extent Headwater contends any of the following limitations should be construed to encompass Samsung's accused instrumentalities, the specifications fail to provide written description and/or an enabling disclosure of at least the following limitations:

1. '110 patent

- **Claims 1, 3, 4, 9, 12, 14-23, 26, 27:** "service policy"
- **Claims 1-12, 14-16, 19-20, 22, 25-30:** "service activity"
- **Claim 1, 26, 27:** "a first service policy associated with the first wireless network, the first service policy configured to at least assist in reducing data usage associated with a first service activity over the first wireless network, the first service activity being less than all service activities available to the wireless device, the first service policy for enabling control of the first service activity on the first wireless network that is different from how the first service activity is controlled on the second wireless network"

- **Claim 1, 3, 4, 26, 27:** "identify an intended, attempted, or successful data communication over the first wireless network, the intended, attempted, or successful data communication over the first wireless network being associated with the first service activity"
- **Claims 12, 13:** "policy control agent" and "low-level policy agents"
- **Claim 15:** "service usage pattern"
- **Claim 20:** "restrict or quarantine communications over the first wireless network or over the second wireless network unless the user response comprises an acknowledgment of the particular condition associated with the first service activity"

2. '811 patent

- **Claim 1, 6- 13, 18-25:** "control policy"
- **Claim 1, 2, 3, 4, 8, 9:** "restricting or preventing"
- **Claim 1:** "determine at least an aspect of the control policy based on the user input, the at least an aspect of the control policy for at least assisting in restricting or preventing a first access to the first wireless network by the first application when the first application is executing, the at least an aspect of the control policy enabling a first control of the first access to the first wireless network by the first application when the first application is executing that differs from a second control of a second access to the first wireless network by a second application on the wireless device"
- **Claim 1**: "apply the control policy, thereby at least assisting in restricting or preventing the first access to the first wireless network by the first application when the first application is executing"
- **Claim 3, 4, 11**: "background"

- **Claim 10:** "apply the control policy comprises use an application programming interface to communicate with a software component that at least assists in controlling an e-mail transfer option, a media content resolution, or a compression level"
- **Claim 14, 15, 17:** "to restrict, block, throttle, delay, quarantine, or shape at least a portion of traffic over the first wireless network associated with the first application"
- **Claim 16:** "an indication of the threshold or information associated with the threshold"
- **Claim 18:** "secure control link" and "encryption protocol"
- **Claim 22:** "a user preference comprising a directive to allow access"
- **Claim 24, 25:** "forwarding service"

3. '359 patent

- **Claims 1, 3, 4, 5, 6, 7, 8, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28:** "a stored WWAN differential traffic control policy" and "differential traffic control policy" and "traffic control policy"
- **Claim 1:** "indicate to a particular application, via an application program interface (API), one or more network access conditions based on the applied WWAN differential traffic control policy,"
- **Claim 1:** "wherein the one or more network access conditions includes a network access condition that indicates the unavailability to the particular application of an Internet data service that is currently available via the WWAN modem to a different application, but that is indicated as unavailable to the particular application"
- **Claim 2:** "wherein the API indicates the unavailability to the particular application of an Internet data service that is currently available by emulating network messaging"

- **Claim 3:** "when a user of the device is not directly interacting with the particular application or perceiving any benefit from the particular application"
- **Claim 6, 7:** "multimode profile"
- **Claim 14:** "wherein the API informs the particular application of one or more network traffic controls that the application is expected to implement"
- **Claim 17, 18, 19, 20:** "configured to dynamically change the application of the stored WWAN differential traffic control policy based on …"
- **Claim 28:** "apply the stored WWAN differential traffic control policy to selectively block network access by the particular application by intercepting open, connect, and/or write requests by the particular application to a network stack"
- **Claim 29:** "by blocking the request from passing to a network stack and returning to the particular application a message indicating the network request was not successful"

4. '918 patent

- **Claim 1, 6, 9, 10, 11, 12, 14, 15, 17, 19**: "media service manager"
- **Claim 1, 14:** "a second API containing at least one second call accessible to each of the plurality of device applications, the second API callable by each of the plurality of device applications to make a data transfer request for a media object associated with a network resource identifier supplied by the calling device application"
- **Claim 1, 14:** "a media service manager prompted by the second call, to manage network data transfers for the media object by interfacing with the network stack to retrieve the media object associated with the network resource identifier via the wireless modem and the wireless network; and"

- **Claim 1:** "one or more service classification and measurement agents to associate wireless network data usage for the media object network data transfers with the device application that requests the data transfer for the media object, to associate wireless network data usage for respective data packet flows opened and used via the first network stack API with the device application opening such respective data packet flow, and to reconcile wireless network data usage for each of the plurality of device applications to track an aggregate wireless network data usage attributable to each of the plurality of device applications via both the first network stack API and the second API"
- **Claim 1, 5, 7, 11, 13**: "service classification and measurement agents"
- **Claim 5:** "wherein the one or more service classification and measurement agents includes a requesting application storing function within the media services manager."
- **Claim 6, 15, 16, 17, 19:** "service classification agent"
- **Claim 7, 18:** "usage and classification database"
- **Claim 11:** "a requesting application storage agent"
- **Claim 11:** "a network data flow storage agent"
- **Claim 11:** "an association agent"
- **Claim 14:** "operating a media service manager prompted by the second call, the media service manager managing network data transfers for the media object by interfacing with the network stack to retrieve the media object associated with the network resource identifier via the wireless modem and the wireless network"
- **Claim 14:** "associating wireless network data usage for the media object network data transfers with the device application that requests the data transfer for the media object, associating wireless network data usage for respective data packet flows opened and used

via the first network stack API with the device application opening such respective data packet flow, and reconciling wireless network data usage for each of the plurality of device applications to track an aggregate wireless network data usage attributable to each of the plurality of device applications via both the first network stackAPI and the second APL"

- **Claim 15, 19:** "a second API containing at least one second call to allow device applications to make a data transfer request for a media object associated with a network resource identifier supplied by the device application, wherein the data transfer request comprises a network resource identifier that identifies a source of the data to be transferred, a proxy to the source of the data to be transferred, or the media object to be transferred in particular, wherein the network resource identifier comprises one or more of an Internet Protocol address a Uniform Resource Locator, a remote file name/address, a stream name, and an object name"
- **Claim 15, 19:** "a service classification agent to associate wireless network data usage for the media object network data transfers with the device application that requests the data transfer for the media object, wherein to associate data usage for the media object network data transfers with the device application that makes the data transfer request for the media object comprises to identify and store at least one of an application name, an application identifier, or a process identifier for the application that makes the data transfer request, each stored entry further comprising information about the corresponding network resource identifier for the data transfer request"
- **Claim 4, 15:** "each stored entry further comprising information about the corresponding network resource identifier for the data transfer request".

B. Indefiniteness Under 35 U.S.C. § 112 ¶ 2

35 U.S.C. § 112, ¶ 2 requires that a patent claim "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, ¶ 2. Claim terms that fail to inform those skilled in the art "with reasonable certainty . . . about the scope of the invention" fail the definiteness requirement of 35 U.S.C. § 112, ¶ 2. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). Samsung contends that, at least under Headwater's actual and/or apparent application of the claims, the Asserted Claims of the Asserted Patents fail to distinctly claim what the inventors regard as their alleged invention.

Each of the asserted claims are invalid as indefinite under 35 U.S.C. § 112 because they fail to particularly point out and distinctly claim the subject matter which the applicant regards as his invention. In particular, the following limitations, read in light of the intrinsic evidence, fail to inform those skilled in the art with reasonable certainty about the scope of the claimed inventions:

1. '110 patent

- **Claims 1, 26, 27:** "at least assist in reducing data usage. . ."
- **Claims 1, 26, 27:** "that is different from how the first service activity is controlled"
- **Claims 1, 26, 27:** "specifying at least an aspect of the first service policy"
- **Claims 1, 3, 4, 26, 27:** "identify an intended, attempted, or successful data communication over the first wireless network, the intended, attempted, or successful data communication over the first wireless network being associated with the first service activity"
- **Claim 4:** "configured to assist in reducing data usage"
- **Claim 15:** "service usage pattern"

2. ’811 patent

- **Claim 1:** “the first application at least enabling the wireless device to access at least a first data service over the first wireless network”
- **Claim 1:** “determine at least an aspect of the control policy based on the user input”
- **Claim 1**: “the at least an aspect of the control policy for at least assisting in restricting or preventing a first access to the first wireless network by the first application when the first application is executing”
- **Claim 1:** “that differs from a second control of a second access to the first wireless network”
- **Claim 1:** “thereby at least assisting in restricting or preventing the first access to the first wireless network by the first application when the first application is executing”
- **Claim 11:** “a software component that at least assists in controlling a background access”
- **Claim 19:** “wherein the control policy at least assists in controlling the second access to the first wireless network by the second application on the wireless device,”
- **Claim 19:** “wherein the at least an aspect of the control policy is a first aspect of the control policy”
- **Claim 19:** “the at least a second aspect of the control policy for at least assisting in controlling the second access to the first wireless network by the second application on the wireless device”
- **Claim 21:** “wherein the at least an aspect of the control policy is further based on a characteristic of the first wireless network or the second wireless network”

- **Claim 24:** "wherein the at least an aspect of the control policy at least assists in determining whether the forwarding service is available to one or more of the one of more other devices"
- **Claim 25:** "determine the at least an aspect of the control policy based on a characteristic of the second wireless network"

3. '359 patent

- **Claim 1:** "a stored WWAN differential traffic control policy"
- **Claim 1:** "indicate to a particular application, via an application program interface (API), one or more network access conditions based on the applied WWAN differential traffic control policy"
- **Claim 1, 27:** "applied WWAN differential traffic control policy"
- **Claims 3, 4, 5, 6, 21, 22:** "the differential traffic control policy"
- **Claim 3**: "or perceiving any benefit from the particular application"
- **Claims 17, 18, 19, 20, 23, 24, 28:** "the stored WWAN differential traffic control policy"
- **Claim 25:** "the WWAN differential traffic control policy"
- **Claim 25:** "the first differential traffic control policy"
- **Claim 25: "**the second differential traffic control policy"
- **Claims 7, 8:** "a traffic control policy"

4. '918 patent

- **Claims 1, 5, 7, 11, 13**: "one or more service classification and measurement agents"
- **Claims 1, 14:** "the calling device application"

- **Claim 14:** "reconciling wireless network data usage for each of the plurality of device applications to track an aggregate wireless network data usage attributable to each of the plurality of device applications via both the first network stack API and the second API"

Samsung's investigation of grounds of invalidity based upon indefiniteness is ongoing, and Samsung reserves the right to supplement these Contentions.

VI. INVALIDITY UNDER 35 U.S.C. § 101

Samsung contends that all claims of the Asserted Patents are invalid under 35 U.S.C. § 101 because the claims are not directed to patent-eligible subject matter. Samsung's contentions that the Asserted Claims are invalid under 35 U.S.C. § 101 do not constitute, and should not be interpreted as, admissions regarding the construction or scope of the claims of the Asserted Patents, or that any of the claims of the Asserted Patents are not anticipated or rendered obvious by prior art.

35 U.S.C. § 101 provides that "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor[.]" Because abstract ideas form the "basic tools of scientific and technological work," they are unpatentable subject matter under 35 U.S.C. § 101. *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014). The Supreme Court provided a two-part test for assessing patent eligibility under Section 101. *See generally id.*

Under the first step of *Alice* ("Step One"), a court must decide whether the claims are directed to ineligible subject matter, such as an abstract idea. *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1326 (Fed. Cir. 2017); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015). To do so, a court examines the claims to determine whether their "character as a whole," or their "focus," is an abstract idea. *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). This examination entails "identify[ing] and defin[ing]

whatever fundamental concept appears wrapped up" in the claims. *Accenture Glob. Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1341 (Fed. Cir. 2013) (internal quotation marks and citations omitted). Once ascertained, the court then determines whether that character is "directed to excluded subject matter," such as an abstract idea. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (internal citation omitted). This inquiry often asks whether the claims' character is directed to "a specific means or method" for improving technology or whether it is simply directed to an abstract end-result. *RecogniCorp*, 855 F.3d at 1326. If the claims are not directed to an abstract idea, the inquiry ends. *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1349 (Fed. Cir. 2017). To resolve this question, "it is often helpful to ask whether the claims are directed to 'an improvement in the functioning of a computer,' or merely 'adding conventional computer components to well-known business practices.'" *Affinity Labs. of Texas, LLC v. Amazon.com Inc.*, 838 F.3d 1266, 1270 (Fed. Cir. 2016) (quoting *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1338 (Fed. Cir. 2016)). "Generalized steps to be performed on a computer using conventional computer activity are abstract[.]" *RecogniCorp*, 855 F.3d at 1326 (internal quotation marks omitted). And "[c]laims directed to generalized steps to be performed on a computer using conventional computer activity are not patent eligible." *Affinity Labs.*, 838 F.3d at 1270 (citing *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1348-49 (Fed. Cir. 2015)).

If the claims, as here, are directed to one or more abstract ideas, then the court advances to the second step of *Alice* ("Step Two"), where the claim elements must be scrutinized "both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Enfish*, 822 F.3d at 1354 (*quoting Alice*, 573 U.S. at 217). At Step Two, the court searches for an "'inventive concept' sufficient to 'transform the nature of the claim into a patent-eligible application.'" *RecogniCorp*,

855 F.3d at 1327 (quoting *Alice*, 573 U.S. at 217). To save a patent at Step Two, an inventive concept must be evident in the claims. *See Alice*, 573 U.S. at 221; *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1149 (Fed. Cir. 2016). The "inventive concept" must also "involve more than performance of well-understood, routine, and conventional activities previously known to the industry." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 73 (2012); *Certain Elec. Devices*, 2020 WL 6441422 at *4. The Federal Circuit's "precedent is clear that merely adding computer functionality to increase the speed or efficiency of the process does not confer patent eligibility on an otherwise abstract idea." *Ericsson Inc. v. TCL Commc'n Tech. Holdings Ltd.*, 955 F.3d 1317, 1330 (Fed. Cir. 2020) (citing *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1370 (Fed. Cir. 2015)). In addition, limitations that simply restrict the invention to a single field of use or merely add "token post-solution" requirements also fail to impart patentability. *Bilski v. Kappos*, 561 U.S. 593, 612 (2010).

All Asserted Claims are invalid under 35 U.S.C. § 101 because they fail to claim patent-eligible subject matter, including the following claims:

- Claims 1-30 of the '110 patent;
- Claims 1-30 of the '811 patent;
- Claims 1-29 of the '359 patent;
- Claims 1-19 of the '918 patent;

A. Alice Step One: The Asserted Claims Embody Abstract Concepts

At Step One, the court must "identify and define whatever fundamental concept appears wrapped up in the claim." *Accenture Glob. Servs.*, 728 F.3d at 1341.

All independent claims of the ’110, ’811, and ’359 Patents are substantially similar, each relating to policies for controlling or limiting access to certain types of networks for mobile phones. At the most basic level, the Asserted Claims of the ’110, ’811, and ’359 Patents are linked to the same abstract idea of managing information flow and resource allocation, including by simply setting and applying rules, which is a long prevalent human activity. As to the ’918 Patent, all independent claims are related to a similar generic, well-known concept of tracking and categorizing data, including on the basis of network type, in mobile phones. Because the Asserted Claims fail to offer anything more than using generic pre-existing computer functionality to carry out the abstract idea of prioritizing information flow and resource allocation, the Asserted Claims are abstract at Step One. *See, e.g.*, ’976 pat. at 2:66-3:8 (“[T]hese implementations, or any other form that the invention may take, may be referred to as ***techniques***. . . . Unless stated otherwise, a component such as a processor or a memory described as being configured to perform a task may be implemented as a ***general component*** that is temporarily configured to perform the task…”).

B. Alice Step Two: The Asserted Claims Do Not Recite an Inventive Concept

For a claim to be patent eligible under *Alice* Step Two, “an inventive concept must be evident in the claims,” *RecogniCorp*, 855 F.3d at 1327, and it must provide “significantly more” than the abstract idea itself, *BSG Tech LLC v. Buyseasons, Inc.*, 899 F.3d 1281, 1289-90 (Fed. Cir. 2018). In performing this analysis, a court must scrutinize the claim elements “both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Enfish*, 822 F.3d at 1354 (quoting *Alice*, 573 U.S. at 217). Elements that are “well-understood, routine, conventional,” or “purely functional” cannot confer patent-eligibility. *Alice*, 573 U.S. at 225-26 (citation omitted). Admittedly, the claims relate to the same “general communication device” described in generic terms in the specification and the claimed process carried out on a generic processor is performed

using well-known standards. Thus, there is no particularized solution to any problem, and nothing that can pass Step 2 of *Alice*.

The Asserted Claims recite only conventional, well known components and functionalities, and do not recite any purportedly novel arrangement of those components. As set forth in Exhibits A-01 through D-14, Exhibits A-A through D-D, and/or through AAPA, individually and/or collectively, these features were well known, routine, and/or conventional, and known in the prior art as set forth herein.

VII. Document Production

Pursuant to Patent Rule 3-4, Samsung is concurrently producing the prior art identified in these Invalidity Contentions, but Samsung is not required to produce the prior art in the file histories of the Asserted Patents.

In addition, based on investigations to date, Samsung is concurrently producing and/or making available for inspection source code, specifications, schematics, flow charts, artwork, formulas, or other documentation sufficient to show the operation of any aspects or elements of the Accused Instrumentalities identified by Headwater in its P.R. 3-1(c) chart.

Samsung reserves the right to supplement these productions with additional documentation, in accordance with the Federal Rules of Civil Procedure, the Local Rules, the Court's orders and other applicable rules and statutes.

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Respectfully submitted,

By: */s/ Sara C. Fish*

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing was served on counsel of record for Plaintiff via electronic mail on July 17, 2024.

/s/ Sara C. Fish
Sara C. Fish