

I. INTRODUCTION

Pursuant to P.R. 3-3 and 3-4 and the Docket Control Order in this case, Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (“Samsung”) hereby provides the following Invalidity Contentions (“Contentions”) to SnapAid Ltd. (“SnapAid”) for asserted U.S. Patent Nos. 10,009,537 (the “’537 Patent”), 9,338,348 (the “’348 Patent”), 9,661,226 (the “’226 Patent”), 12,250,452 (the “’452 Patent”), 11,671,702 (the “’702 Patent”), 11,252,325 (the “’325 Patent”), 10,944,901 (the “’901 Patent”), and 10,659,682 (the “’682 Patent”) (collectively, the “Asserted Patents”). Samsung reserves the right to supplement or modify these Contentions, consistent with the Order.

Discovery is ongoing, and accordingly, Samsung reserves the right to revise or supplement these Contentions in light of party and third-party discovery. Samsung’s Contentions are based in whole or in part on its present understanding of SnapAid’s contentions concerning the scope and construction of the claims in SnapAid’s Infringement Contentions and Samsung’s own understanding of the scope and construction of those claims. Samsung has conducted the invalidity analysis herein without having proposed claim terms for construction and before disclosure of SnapAid’s apparent interpretation of the Asserted Claims of the Asserted Patents. SnapAid’s Infringement Contentions are deficient at least insofar as they fail to articulate how any single accused product or the use or manufacture of any single accused product infringes any claim, and Samsung reserves the right to further amend its Contentions in response to any further supplementation or amendment of SnapAid’s Infringement Contentions or in response to SnapAid’s proposed claim constructions. Samsung takes no position on any matter of claim construction in these Contentions. Any statement herein describing or tending to describe any claim element is provided solely for the purpose of understanding the relevant prior art. Samsung

further reserves the right to amend these Contentions based on any claim construction order by the Court.

Samsung further reserves the right to interpret these terms differently over the course of the litigation, and does not adopt any interpretations impliedly or expressly put forth in these Contentions. Accordingly, Samsung's Contentions, including the attached claim charts, may reflect alternative positions as to claim construction and scope. Nothing in this document or the attached claim charts, however, should be construed as an admission that Samsung agrees with SnapAid's contentions or that any claim, whether asserted or not, of the Asserted Patents is valid, enforceable, or infringed.

Samsung reserves the right to further amend these disclosures should SnapAid later provide any information that it failed to provide in its infringement contention disclosures or should SnapAid further amend its infringement contention disclosures in any way. Moreover, Samsung reserves the right to revise its ultimate Contentions concerning the invalidity of the Asserted Claims, which may change in response to the Court's construction of the Asserted Claims, additional information obtained during the discovery period, any findings as to the priority date of the Asserted Claims, and/or positions that Samsung or any expert witnesses may take concerning claim construction, infringement, and/or invalidity issues. Samsung hereby provides disclosures and related documents pertaining only to the Asserted Claims as identified by SnapAid in its Preliminary Infringement Contentions. Samsung reserves the right to modify, amend, or supplement these Contentions to address any additional claims that the Court may allow SnapAid to later assert.

Samsung further intends to rely upon inventor admissions concerning the scope of the Asserted Claims, and prior art relevant to the Asserted Claims, found in: the Asserted Patents, the

patent prosecution histories for the Asserted Patents, and related patents and/or patent applications; any deposition testimony of any inventor of the Asserted Patents; any previous trial testimony of any inventor of the Asserted Patents; and any papers filed or any evidence produced or submitted by SnapAid or its affiliates in connection with this litigation, or any previous litigation, related to any of the Asserted Patents. In particular, Samsung reserves the right to contend that the Asserted Claims are invalid in view of admitted prior art, or under pre-AIA 35 U.S.C. § 102(f) in the event Samsung obtains evidence that inventors named in the Asserted Patents did not invent (either alone or in conjunction with others) the subject matter claimed in the Asserted Patents. Should Samsung obtain such evidence, it will provide the name of the person(s) from whom and the circumstances under which the claimed invention or any part thereof was derived.

Prior art not included in these Contentions, whether known or not known to Samsung may become relevant. Samsung is currently unaware of the extent, if any, to which SnapAid will contend that limitations of the Asserted Claims are not disclosed in the prior art identified by Samsung. Samsung reserves the right to identify additional references that would render obvious the allegedly missing limitation(s) of the disclosed device or method. Discovery is ongoing, and Samsung has not yet completed its search for and analysis of relevant prior art. Thus, Samsung reserves the right to revise, amend, and/or supplement the information provided herein, including identifying, charting, and relying on additional references, should Samsung's further search and analysis yield additional information or references, consistent with the Order and the Federal Rules of Civil Procedure.

Prior art patents or publications included in these Contentions may be related (e.g., as a divisional, continuation, continuation-in-part, parent, child, or other relation or claim of priority) 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. Accordingly, Samsung reserves the right to modify, amend, and/or supplement these Contentions with these related patents or publications, as well as other prior art references, upon further investigation.

Additionally, because third-party discovery is not yet complete, Samsung reserves the right to present additional items of prior art under 35 U.S.C. §§ 102(a), (b), (e), and/or (g), and/or § 103 located during the course of such discovery or further investigation, and to assert contentions of invalidity under 35 U.S.C. §§ 102(c), (d), or (f) to the extent that such discovery or investigation yields information forming the basis for such contentions of invalidity. For example, Samsung may issue subpoenas in the course of discovery to third parties believed to have knowledge, documentation, and/or corroborating evidence concerning some of the prior art listed below and/or additional prior art. Samsung has also yet to receive documents or testimony in response to the subpoenas issued to date. These third parties may include, without limitation, the authors, inventors, developers, designers, or assignees of the references and systems listed in these disclosures.

In those instances where Samsung asserts that the claims are invalid under 35 U.S.C. § 112 (e.g., no written description, not enabled, and/or indefinite), Samsung has applied the prior art, in part, in accordance with Samsung's assumptions that SnapAid: (1) contends those claims are definite; (2) finds written description support for those claims; and (3) contends that those claims are enabled. However, Samsung's prior art and Invalidity Contentions do not necessarily represent Samsung's agreement or view as to the meaning, definiteness, written description support for, or

enablement of any claim contained therein. In fact, Samsung notes numerous grounds for invalidity on such bases below.

II. BACKGROUND

A. The Asserted Claims

SnapAid is asserting the following claims of the Asserted Patents:

Patent	Asserted Claims
'537 Patent	1, 2, 4–12, 14–20 (“Asserted ’537 Patent Claims”)
'348 Patent	1–11, 13, 15–17 (“Asserted ’348 Patent Claims”)
'226 Patent	1–16, 18–20 (“Asserted ’226 Patent Claims”)
'452 Patent	1–12 (“Asserted ’452 Patent Claims”)
'702 Patent	1, 3–20 (“Asserted ’702 Patent Claims”)
'325 Patent	1, 3–20 (“Asserted ’325 Patent Claims”)
'901 Patent	1–11, 13–20 (“Asserted ’901 Patent Claims”)
'682 Patent	1–20 (“Asserted ’682 Patent Claims”)

B. Priority Dates of the Asserted Claims

The ’537 Patent

Samsung contends that no Asserted Claim of the ’537 Patent is entitled to a priority date earlier than October 22, 2013, though Samsung does not concede that the ’537 Patent is necessarily even entitled to that priority date.

The ’348 Patent

Samsung contends that no Asserted Claim of the ’348 Patent is entitled to a priority date earlier than October 22, 2013, though Samsung does not concede that the ’348 Patent is necessarily even entitled to that priority date.

The ’226 Patent

Samsung contends that no Asserted Claim of the '226 Patent is entitled to a priority date earlier than October 22, 2013, though Samsung does not concede that the '226 Patent is necessarily even entitled to that priority date.

The '452 Patent

Samsung contends that no Asserted Claim of the '452 Patent is entitled to a priority date earlier than October 22, 2013, though Samsung does not concede that the '452 Patent is necessarily even entitled to that priority date.

The '702 Patent

Samsung contends that no Asserted Claim of the '702 Patent is entitled to a priority date earlier than October 22, 2013, though Samsung does not concede that the '702 Patent is necessarily even entitled to that priority date.

The '325 Patent

Samsung contends that no Asserted Claim of the '325 Patent is entitled to a priority date earlier than October 22, 2013, though Samsung does not concede that the '325 Patent is necessarily even entitled to that priority date.

The '901 Patent

Samsung contends that no Asserted Claim of the '901 Patent is entitled to a priority date earlier than October 22, 2013, though Samsung does not concede that the '901 Patent is necessarily even entitled to that priority date.

The '682 Patent

Samsung contends that no Asserted Claim of the '682 Patent is entitled to a priority date earlier than October 22, 2013, though Samsung does not concede that the '682 Patent is necessarily even entitled to that priority date.

III. INVALIDITY CONTENTIONS FOR THE '537 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the “References Cited” on the face of the '537 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Samsung may rely upon that prior art, including the “References Cited” on the face of the '537 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Samsung reserves the right to rely upon additional prior art, information, and/or knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

The claim charts attached in Appendix A as Exhibits 537-Alhadeh through 537-Wu identify where each limitation of the Asserted Claims of the '537 Patent is found in the prior art.

C. Identification of the Prior Art

Based on SnapAid’s Preliminary Infringement Contentions, Samsung identifies prior art below and in Appendix A as Exhibits 537-Alhadeh through 537-Wu, which contain charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits 537-Alhadeh through 537-Wu and below, Samsung has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Samsung notes that it has applied the prior art in accordance with SnapAid’s improper

assertions of infringement and improper applications of the claims. Samsung does not agree with SnapAid’s application of the claims and denies infringement.

Samsung further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Samsung reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Samsung has also identified exemplary obviousness combinations further below.

'537 Patent Prior Art Patents / Patent Applications				
Ex. No.	Patent / Publication No.	Country of Origin	Filing Date	Date of Issue / Publication
Ex. 537-Alhadeh	U.S. Patent No. 8,009,198 (“Alhadeh”)	U.S.	Apr. 22, 2004	Aug. 30, 2011
Ex. 537-Anon	U.S. Patent No. 8,508,622 (“Anon”)	U.S.	Jan. 18, 2011	Aug. 13, 2013
Ex. 537-Chen	U.S. Patent No. 6,810,083 (“Chen”)	U.S.	Nov. 16, 2001	Oct. 26, 2004
Ex. 537-Cooper	U.S. Patent No. 7,286,177 (“Cooper”)	U.S.	Dec. 19, 2001	Oct. 23, 2007
Ex. 537-Fukuda	U.S. Patent Pub. No. 2010/0177207 A1 (“Fukuda”)	U.S.	Jan. 11, 2010	July 15, 2010
Ex. 537-Gao	U.S. Patent Pub. No. 2008/0267521 A1 (“Gao”)	U.S.	June 28, 2007	Oct. 30, 2008
Ex. 537-Ishiwata	U.S. Patent Pub. No. 2008/0013851 A1 (“Ishiwata”)	U.S.	July 3, 2007	Jan. 17, 2008
Ex. 537-Iwamoto	U.S. Patent No. 5,005,086 (“Iwamoto”)	U.S.	Mar. 2, 1989	Apr. 2, 1991
Ex. 537-Iwane	U.S. Patent No. 7,660,519 (“Iwane”)	U.S.	Aug. 28, 2006	Feb. 9, 2010
Ex. 537-Jasinski	U.S. Patent Pub. No. 2012/0201427 A1 (“Jasinski”)	U.S.	Feb. 4, 2011	Aug. 9, 2012
Ex. 537-Kim397	U.S. Patent Pub. No. 2006/0260397 A1 (“Kim397”)	U.S.	May 12, 2006	Nov. 23, 2006

Ex. 537-Kim882	U.S. Patent Pub. No. 2011/0187882 A1 (“Kim882”)	U.S.	Sept. 10, 2010	Aug. 4, 2011
Ex. 537-Lv	U.S. Patent Pub. No. 2013/0286161 A1 (“Lv”)	U.S.	Apr. 25, 2012	Oct. 31, 2013
Ex. 537-Meguro	U.S. Patent Pub. No. 2009/0251549 A1 (“Meguro”)	U.S.	Aug. 23, 2007	Oct. 8, 2009
Ex. 537-Mori	U.S. Patent Pub. No. 2011/0080494 A1 (“Mori”)	U.S.	Sept. 30, 2010	Apr. 7, 2011
Ex. 537-Nepomniachtchi	U.S. Patent Pub. No. 2013/0085935 A1 (“Nepomniachtchi”)	U.S.	May 1, 2012	Apr. 4, 2013
Ex. 537-Parulski177	U.S. Patent No. 6,539,177 (“Parulski177”)	U.S.	July 17, 2001	Mar. 25, 2003
Ex. 537-Phillips	U.S. Patent Pub. No. 2005/0226490 A1 (“Phillips”)	U.S.	Mar. 30, 2005	Oct. 13, 2005
Ex. 537-Ramesh	U.S. Patent Pub. No. 2009/0296989 A1 (“Ramesh”)	U.S.	May 28, 2009	Feb. 28, 2006
Ex. 537-Robins	U.S. Patent Pub. No. 2003/0193604 A1 (“Robins”)	U.S.	Apr. 11, 2002	Oct. 16, 2003
Ex. 537-Shah	U.S. Patent Pub. No. 2011/0205383 A1 (“Shah”)	U.S.	Feb. 24, 2010	Aug. 25, 2011
Ex. 537-Staudacher238	U.S. Patent No. 9,282,238 (“Staudacher238”)	U.S.	Oct. 29, 2010	Mar. 8, 2016
Ex. 537-Takeuchi	U.S. Patent Pub. No. 2010/0149361 A1 (“Takeuchi”)	U.S.	Oct. 14, 2009	June 17, 2010
Ex. 537-Walker	U.S. Patent Pub. No. 2008/0192129 A1 (“Walker”)	U.S.	Dec. 23, 2004	Aug. 14, 2008
Ex. 537-Wu	U.S. Patent No. 9,036,069 (“Wu”)	U.S.	Sept. 12, 2012	May 19, 2015

'537 Patent Prior Art Products/Systems		
Ex. No.	System/Product	Public Disclosure Date
Ex. 537-Canon EOS-1DX	Canon EOS-1DX Digital Camera	March 2012

Ex. 537-Kodak Z990	Kodak Easyshare Max Z990 Digital Camera	May 2011
Ex. 537-Nikon D7000	Nikon D7000 Digital Camera	October 2010
Ex. 537-Nikon S630	Nikon Coolpix S630 Digital Camera	February 2009
Ex. 537-Samsung WB700	Samsung WB700 Digital Camera	December 2010

'537 Patent Additional Prior Art/Background Art
U.S. Patent Pub. No. 2010/0246939 A1 (“Aisaka”)
U.S. Patent Pub. No. 2010/0214216 A1 (“Nasiri”)
U.S. Patent Pub. No. 2012/0105662 A1 (“Staudacher”)
T. Liu, Image Quality Assessment Using Multi-Method Fusion (“Liu”)
U.S. Patent No. 8,264,553 (“Joshi”)
U.S. Patent Pub. No. 2007/0283269 A1 (“Obrador”)
U.S. Patent Pub. No. 2011/0150447 A1 (“Li”)
U.S. Patent Pub. No. 2012/0133746 A1 (“Bigioi”)
U.S. Patent Pub. No. 2013/0076856 A1 (“Wakabayashi”)
U.S. Patent No. 5,831,670 (“Suzuki”)
Garcia-Molina, H., Database Systems: The Complete Book (2d ed. 2009) (“Garcia-Molina”)
U.S. Patent No. 8,682,097 (“Steinberg”)
U.S. Patent Pub. No. 2002/0110286 A1 (“Cheatle”)
U.S. Patent Pub. No. 2011/0222724 A1 (“Yang”)
U.S. Patent Pub. No. 2004/0012682 A1 (“Kosaka”)

Discovery is ongoing, and Samsung reserves the right to amend its identification of prior art herein based on additional investigation and third-party discovery.

D. Anticipation

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’537 Patent are anticipated, either expressly or inherently as understood by a person having ordinary

skill in the art, by primary references as set forth below and in the attached claim charts. The prior art references or systems listed herein and in the accompanying claim charts may disclose the elements of the Asserted Claims explicitly and/or inherently. To the extent SnapAid asserts that any of the prior art references charted in the attached exhibits fail to explicitly or inherently disclose any element of the Asserted Claims, Samsung contends it would have been obvious to modify such reference to include the allegedly missing element, in view of the knowledge of one of ordinary skill in the art, the admitted prior art of the Asserted Patents, and/or in combination with any of the other prior art references identified in the Exhibits for that respective patent.

E. Obviousness

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’537 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Samsung contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted ’537 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Samsung’s anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

One of the Following Primary References	In Combination with One or More of the Following References
Alhadeif	Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips,

	Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Anon	Alhadeh, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Canon EOS-1DX	Alhadeh, Anon, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Chen	Alhadeh, Anon, Canon EOS-1DX, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Cooper	Alhadeh, Anon, Canon EOS-1DX, Chen, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Fukuda	Alhadeh, Anon, Canon EOS-1DX, Chen, Cooper, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Gao	Alhadeh, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Ishiwata,

	Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Ishiwata	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Iwamoto	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Iwane	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Jasinski	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Kim397	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Kim882	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata,

	Iwamoto, Iwane, Jasinski, Kim397, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Kodak Z990	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Lv	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Meguro	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Mori	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Nepomniachtchi	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Nikon D7000	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397,

	Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Nikon S630	Alhadeh, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Parulski177	Alhadeh, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Phillips	Alhadeh, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Ramesh	Alhadeh, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Robins	Alhadeh, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker, Wu
Samsung WB700	Alhadeh, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro,

	Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Shah, Staudacher238, Takeuchi, Walker, Wu
Shah	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Staudacher238, Takeuchi, Walker, Wu
Staudacher238	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Takeuchi, Walker, Wu
Takeuchi	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Walker, Wu
Walker	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Wu
Wu	Alhadeef, Anon, Canon EOS-1DX, Chen, Cooper, Fukuda, Gao, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Lv, Meguro, Mori, Nepomniachtchi, Nikon D7000, Nikon S630, Parulski177, Phillips, Ramesh, Robins, Samsung WB700, Shah, Staudacher238, Takeuchi, Walker

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have

understood that each of these references are in the same field of endeavor, namely real time assessment of picture quality. *See, e.g.*, Iwamoto at Abstract, 7:65–8:16, 8:45–61, 3:35–57, 9:12–30, 7:41–43; Ex. 537-Kodak Z990; Takeuchi at ¶¶ 176, 0166, 0147, 7, Abstract; Kim397 at ¶¶ 0033–35, 0025–26, Abstract, ¶¶ 26, 14; Mori at ¶¶ 10, 35, 0055, 95, Claim 1; Shah at ¶¶ 0034, 0055, ¶¶ 0072–74, 0072–73, 0071–72; Staudacher238 at 3:60–4:8, 4:25–34, 5:56–6:12, 1:48–57, 6:56–7:4; Ramesh at ¶¶ 0024, 0025; Iwane at 4:4–13, 1:53–2:3, 2:4–21, 13:17–31, 1:30–42; Alhadeif at 14:16–30, 15:49–62, 1:49–59, 3:37–48, 14:49–63; Cooper at 1:49–59, 5:29–42, 4:24–37, 4:27–37, 4:31–37; Lv at ¶¶ 0046, 0083, 0042, 0027, 0061; Ex. 537-Samsung WB700; Ex. 537-Canon EOS-1DX; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Nepomniachtchi at ¶¶ 296, 100, 131, 116, Abstract; Chen at Abstract, 1:25–50, 4:6–20, 4:4–20, 4:21–51, 1:16–23; Kim882 at ¶ 0051, ¶¶ 0103–04, 0089–91, 0089–90, 0052–53; Gao at ¶¶ 4, 57, 25, 34, 48; Robins at ¶¶ 0048, 0023, 0042, 0052, 0049; Fukuda at ¶¶ 0141–42, 0126–27, 0065–66, 0062–63, ¶ 0066; Meguro at ¶¶ 21, 6, 0029, 58, 0032; Ex. 537-Nikon S630; Phillips at ¶¶ 0012, 0080, 0091, 0010, ¶¶ 0091–93; Ex. 537-Nikon D7000; Anon at 1:59–2:8, Abstract, 10:8–25, 5:26–51, 7:55–63; Jasinski at ¶¶ 3, 131, 0088, Claim 25; Ishiwata at ¶¶ 52, 71, 49, 86, ¶¶ 0077–79; Parulski177 at Abstract, 30:50–31:7, 28:31–57, 32:47–33:3, 29:56–67, 28:31–52; Walker at ¶¶ 481, 0328, 26, 257, 316.

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, picture quality. *See, e.g.*, Iwamoto at 7:65–8:16, 3:35–57, 7:41–43, 5:51–67, 7:41–58; Ex. 537-Kodak Z990; Takeuchi at ¶¶ 176, 0282, 121, Abstract, ¶¶ 0130–31; Kim397 at ¶¶ 0025–26, 0026–27, ¶¶ 26, 5, 28; Mori at ¶¶ 10, 25, Claim 1, Abstract, ¶¶ 0073–74; Shah at ¶¶ 0034, 0055, 0033, ¶¶ 0072–74; Staudacher238 at 3:60–4:8, 2:7–33, 2:11–33, 2:56–3:2, Claim 1; Ramesh at ¶¶ 0024, 0025, 0007, 0033; Iwane at 4:4–13, 1:30–42, Abstract,

4:48–5:5, 5:35–51; Alhadef at 14:16–30, 14:49–63, 7:3–13, 15:7–22, 14:51–63; Cooper at 1:49–59, 5:29–42, 2:63–3:5, 1:26–30, 4:24–37; Lv at ¶¶ 0046, 0083, 0042, 0045, 0032; Ex. 537-Samsung WB700; Ex. 537-Canon EOS-1DX; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Nepomniachtchi at ¶¶ 296, 100, 184, 131; Chen at 1:25–50, 4:6–20, 4:4–20, 3:52–4:3, 1:16–23; Kim882 at ¶¶ 0051, 0052, 0006, Abstract, ¶¶ 0052–53; Gao at ¶¶ 4, 57, 34, 25, Abstract; Robins at ¶¶ 0048, 0042, 0049, 0052, 0028; Fukuda at ¶¶ 0141–42, 0065–66, 0164–65, 0055–56, ¶ 0066; Meguro at ¶¶ 21, 6, 8, Abstract; Ex. 537-Nikon S630; Phillips at ¶¶ 0012, 0094, 0032, 0091, ¶¶ 0091–93; Ex. 537-Nikon D7000; Anon at 1:59–2:8, Abstract, 5:26–51, 2:64–3:14, 2:9–15; Jasinski at ¶ 3, Claim 25, ¶¶ 0018–21, 0031–32; Ishiwata at ¶¶ 52, 46, 53, 49, 64; Parulski177 at 28:31–57, 32:47–33:3, 28:31–52, 28:16–30, 30:50–31:7; Walker at ¶¶ 481, 0328, 26, 316, 30.

Further, the Asserted Claims of the '537 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—*i.e.*, the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe “[a] method for estimating quality of a digital image frame having pixels, where image is taken from a video stream comprising multiple images, each image frame comprises an image of the scene; where video stream was taken by a digital camera.” *See, e.g.*, Iwamoto at 1:7–9, 1:32–48, 1:49–65, 4:31–45, 4:46–58, 5:14–16, 6:1–18; Ex. 537-Kodak Z990 at 1[pre]; Takeuchi at Abstract, ¶¶ 0002, 7, 8, 9, 0077, 0087, 0091, 117, 121, 0124, 0125, 0141, 0142, 0143, 0146, 0147, 0148, 0149, 296, 297, Claim 12, ¶¶ 0139–40, 0144–45; Kim397 at ¶¶ 5, 28, 7, 24, 6, ¶¶ 0025–26, Abstract; Mori at Abstract, ¶¶ 10, 12, 25, 26, 27, 28, 30; Shah at Abstract, ¶¶ 0001, 0031, 0038, 0039, 0044, 0047, 0056; Staudacher238 at 1:26–47, 1:48–57, 2:1–6, 3:60–4:8, 2:7–33, 4:9–24; Ramesh at Abstract, ¶¶ 0004, 0005, 0021, 0024, 0025, 0028, Claim 1; Iwane at 3:40–50, 4:4–13, 4:39–45, 4:48–5:5,

5:8–23, 5:35–51, 8:27–39, 8:40–53, 8:54–59; Alhadeef at 1:27–28, 1:34–45, 3:53–64, 3:65–4:3, 4:4–9, 4:36–40, 4:45–51, 7:44–52, 14:27–30, 14:46–48; Cooper at 1:5–7, 1:26–30, 1:33–37, 1:49–59, 2:26–33, 2:52–59, 2:63–3:5, 3:6–12; Lv at Abstract, ¶¶ 0006, 0019, 0026, 0031, 0034, 0035, 0042, 0044, 0045; Ex. 537-Samsung WB700 at 1[pre]; Ex. 537-Canon EOS-1DX at 1[pre]; Wu at Abstract, 1:18–20, 2:27–42, 2:56–3:5, 3:22–32, 4:25–42, 4:43–58, 4:66–5:16; Nepomniachtchi at ¶¶ 176, 177, 178, 189, 198, 199, 188, 297, 298; Chen at 1:9–13, 1:16–23, 1:25–50, 1:54–57, 3:35–51, 3:52–4:3, 4:6–20, Claim 25; Kim882 at ¶¶ 0002–03, ¶¶ 0006, 0016, 0042, 0048, 0050, 0094, 0095; Gao at ¶¶ 3, 4, 19, 25, 28, 36, 37, 48; Robins at ¶¶ 0017, 0018, 0020, 0021, 0033, 0034, 0037, Claim 15; Fukuda at ¶¶ 0002, 0004, 0061, 0065, 0123, 0127, ¶¶ 0055–56; Meguro at ¶¶ 21, 22, 24, 42, 50, 65, 66, 90; Ex. 537-Nikon S630 at 1[pre]; Phillips at Abstract, ¶¶ 0014, 0015, 0016, 0017, 0032, 0065, 0039; Ex. 537-Nikon D7000 at 1[pre]; Anon at Abstract, 2:64–3:14, 3:15–26, 3:53–4:3, 5:53–6:8, 8:15–31, 10:27–46, 1:14–17, 2:45–48, 10:8–25; Jasinski at ¶¶ 2, 3, 4, 7, 34, 91, 134; Ishiwata at ¶¶ 32, 44, 45, 46, 51, 52, 53, 117; Parulski177 at 5:50–63, 5:64–6:2, 6:2–22, 10:57–64, 11:33–39, 12:37–43, 12:44–57, 12:63–13:20; Walker at ¶¶ 233, 234, 270, 23, 25, 33, 183, 186.

The prior art references further describe “obtaining a first value (QI1) associated with the digital camera at the time of said image capture.” *See, e.g.*, Iwamoto at 4:31–45, 4:46–51, 4:66–5:4, 5:5–13, 6:1–18, 6:19–48, 7:65–8:16, 9:48–56; Ex. 537-Kodak Z990 at 1[a]; Takeuchi at ¶¶ 0118, 137, 138, 0140, 0141, 0142, 0143, 0146, 0147, 0148, 0149, 151, 8, 10, 129, 132, 0157, ¶¶ 0130–31, 0144–45; Kim397 at ¶¶ 5, 29, 33, 7, ¶¶ 0024–25, 0042–43; Mori at ¶¶ 25, 26, 27, 31, 32, 33, 34, 39, 40, 0055, 69, ¶¶ 0053–54; Shah at ¶¶ 0030, 0034, 0059, 0070, 0075, 0076, 0078, 0086, ¶¶ 0072–73; Staudacher238 at 1:26–47, 1:48–57, 2:56–3:2, 3:24–36, 3:60–4:8, 4:25–34, 5:56–6:12, 6:56–7:4; Ramesh at ¶¶ 0004, 0005, 0007, 0008, 0020, 0021, 0025, 0030; Iwane at 3:40–50,

4:4–13, 4:27–30, 5:35–51, 5:58–63, 5:64–6:8, 6:9–14, 4:39–45; Alhadeef at 13:56–61, 14:16–30, 14:46–48, 3:37–48, 3:49–64, 3:65–4:3, 4:4–12, 4:14–16, 7:44–57, 8:63, 8:64–9:3; Cooper at 1:26–30, 1:33–37, 1:49–59, 2:52–59, 2:63–3:5, 3:6–12, 3:54–67, 4:47–53; Lv at ¶¶ 0042, 0045, 0046, 0050, 0051, 0053, 0061, 0026; Ex. 537-Samsung WB700 at 1[a]; Ex. 537-Canon EOS-1DX at 1[a]; Wu at Abstract, 1:18–20, 2:27–37, 2:56–3:5, 4:9–11, 4:25–42, 9:55–10:3, 12:40–61; Nepomniachtchi at ¶¶ 95, 102, 110, 111, 187, 333, 174, 100; Chen at 3:52–60, 1:54–57, 1:58–2:3, 2:4–16, 3:60–4:3, 1:9–13, 1:25–50; Kim882 at ¶¶ 0047–48, ¶¶ 0050, 0051, 0052, 0090, 0103; Gao at ¶¶ 36, 37, 52, 5, 8, 9, 34, 35, 38; Robins at ¶¶ 0034, 0035, 0036, 0037, 0038, 0041, 0042, 0043, 0044, 0045, 0046, 0051, ¶¶ 0039–40; Fukuda at ¶¶ 0055–56, 0087–88, 0106–07, ¶¶ 0061, 0066, 0090; Meguro at ¶¶ 21, 23, 45, 47, 50, 51, 52, 53, 54, 55, 61, 72, 107, 108; Ex. 537-Nikon S630 at 1[a]; Phillips at ¶¶ 0065, 0138, 0139, 0142, 0008, 0009, 0010, ¶¶ 0063–64; Ex. 537-Nikon D7000 at 1[a]; Anon at Abstract, 2:64–3:14, 3:53–4:3, 4:24–33, 5:26–51, 6:16–30, 6:32–41, 6:42–50, 7:4–14, 7:15–29, 7:43–54, 8:15–31, 8:32–43, 3:15–26, 3:27–42, 5:53–6:8, 10:27–46; Jasinski at ¶¶ 83, 84, 88, 3, 73, 86, 69, 56; Ishiwata at ¶¶ 5, 32, 86, 105, 115, 13, 14, 22; Parulski177 at 32:34–46, 15:13–46, 15:47–53, 25:22–35, 28:16–30, 35:34–42, 30:50–31:7, 44:27–54; Walker at ¶¶ 151, 152, 153, 154, 183, 186, 290, 339.

The prior art references further describe “estimating a first weight (c1) associated with the first value.” *See, e.g.*, Iwamoto at 5:40–50, 6:52–66, 6:67–7:9, 3:27–34, 7:18, 7:44–58, 3:64–4:3, 7:59–64, 3:58–60, 7:41–43, 9:12–30, 9:31–47, 9:48–56; Ex. 537-Kodak Z990 at 1[b]; Takeuchi at ¶¶ 0251–52, 0257–58, ¶¶ 0253, 0254, 0255, 0256, 266, 267, 268, 269, 270; Kim397 at Abstract, ¶¶ 14, 15, 44, 5, ¶¶ 0036–37, 0038–39, 0009–10; Mori at ¶¶ 31, 32, 33, 51, 54, 55, 94, 95, 39, 40; Shah at ¶¶ 0033, 0034, 0035, 0101, 0102, ¶¶ 0072–74; Staudacher238 at 2:34–55, 4:25–34, 4:35–50, 4:51–5:5, 2:7–33, 2:56–3:2; Ramesh at ¶¶ 0030, 0041, 0006, 0033, 0034, 0039, 0040, Claims

10, 2; Iwane at 4:48–5:5; Alhadeef at 12:51–56, 9:28–39, 9:42–43, 12:45–50, 9:59–64, 10:12–14, 3:49–52; Cooper at 1:41–46, 2:63–3:5, 3:6–12, 3:31–42, 3:43–51, 4:3–16; Lv at ¶¶ 0032, 0045, 0046, 0047, 0048, 0075, 0076, 0036; Ex. 537-Samsung WB700 at 1[b]; Ex. 537-Canon EOS-1DX at 1[b]; Wu at 13:39–44, 14:4–21, 14:22–26, 15:40–48, 4:43–58, 4:59–65, 13:25–38, 7:60–8:20; Nepomniachtchi at ¶¶ 267, 268, 349, 356, 405, 407; Chen at 1:54–57, 1:58–2:3, 2:4–16, 2:17–39, 3:27–33, 3:52–4:3, 4:6–20, 7:57–8:7; Kim882 at ¶¶ 0051, 0059, 0062, 0069, 0077, 0100, 0101, 0109; Gao at ¶¶ 55, 56, 57, 25, 26, 37, 54; Robins at ¶¶ 0051, 0049, 0048, 0052, 0006, 0021, 0019, 0024, 0025; Fukuda at ¶¶ 0091, 0092, 0093, ¶¶ 0111–12, 0019–20, 0025–26; Meguro at ¶¶ 42, 43, 44, 45, 61, 67, 101, 102; Ex. 537-Nikon S630 at 1[b]; Phillips at ¶¶ 0023, 0026, 0030, 0032, 0115, 0116, 0117, 0118; Ex. 537-Nikon D7000 at 1[b]; Anon at 1:59–2:8, 3:53–4:3, 8:15–31, 8:32–43, 4:4–23, 4:56–5:25, 5:26–51, 9:26–34; Jasinski at ¶¶ 0031, 0114, 120, 121, 0122, 126, 128, 129, 130, 0028, ¶¶ 0029–30; Ishiwata at ¶¶ 84, 85, 86, 88, 90, 13, 14, 32; Parulski177 at 25:22–35; Walker at ¶¶ 292, 293, 321, 322, 325, 326, 0450, 0451, 0452, 168, 169, 170, 171, 319, 320, 388, 389, 390, ¶¶ 0448–49, 0379–80.

The prior art references further describe “analyzing the captured image for detecting or recognizing one or more objects in, or one or more characteristics of, the image.” *See, e.g.*, Iwamoto at 1:7–9, 1:32–48, 4:46–51, 4:59–65, 4:66–5:4, 5:5–16, 6:1–18; Ex. 537-Kodak Z990 at 1[c]; Takeuchi at ¶¶ 0113, 0115, 0122, 134, 116, 117, 0135, 0136, 0137, 0140, 141, 142, 146, 147, 0148, 0149, 0157, 0166, 0167, 0168, 292; Kim397 at ¶¶ 5, 7, 28, 35, ¶¶ 0025–26, 0032–33, 0042–43; Mori at ¶¶ 34, 72, 77, 78, 80, 81, 0100, 0101, 28, 31, 32, ¶¶ 0102–03; Shah at ¶¶ 0035, 0086, 0095, 0097, ¶¶ 0036–37, Claim 8; Staudacher238 at 2:1–6, 2:7–33, 4:9–24, 5:6–22, 5:23–42, 6:56–7:4, 2:34–55, Claim 1; Ramesh at Abstract, ¶¶ 0004, 0005, 0006, 0029, 0031, 0061, 0062; Iwane at 4:48–5:5, 5:64–6:8, 6:9–14, 6:15–29, 8:23–39, 8:40–53, 1:53–2:3, 2:4–21; Alhadeef at 2:36–49,

12:45–56, 12:57–65, 12:66–13:18, 13:19–25, 13:26–41, 13:42–47, 9:42–45, 4:28–31, 4:33–35, 7:53–62, 14:49–63; Cooper at 1:41–46, 2:63–3:5, 3:6–19, 3:20–30, 3:54–67, 1:49–59; Lv at ¶¶ 0042, 0043, 0045, 0046, 0032, 0035, 0036, 0051, 0028, 0079; Ex. 537-Samsung WB700 at 1[c]; Ex. 537-Canon EOS-1DX at 1[c]; Wu at Abstract, 2:27–42, 3:6–16, 4:25–42, 4:43–58, 5:53–61, 5:62–6:6, 6:7–19, 8:31–43, 8:44–63, 9:15–30, 13:25–38; Nepomniachtchi at ¶¶ 217, 241, 245, 247, 249, 251, 425, 426, 427, 428; Chen at 4:6–20, 4:21–51, 2:4–16, 7:57–8:7, 8:8–16, 8:17–39, 6:53–54, 8:52–61, 7:30–33, 9:50–51; Kim882 at ¶¶ 0051, 0061, 0062, 0063, 0064, 0067, 0068, ¶¶ 0059–60; Gao at ¶¶ 4, 8, 10, 21, 25, 26, 54, 5; Robins at ¶¶ 0042, 0045, 0046, 0048, 0049, 0006, 0007, 0020, 0021; Fukuda at ¶¶ 0106–07, 0109–10, 0141–42, 0023–24, ¶¶ 0108, 0125, 0128, 0136, 0143; Meguro at ¶¶ 22, 23, 42, 44, 45, 47, 57, 111; Ex. 537-Nikon S630 at 1[c]; Phillips at ¶¶ 0022, 0024, 0025, 0026, 0027, 0028, 0029, 0031, 0032, 0039, 0086, 0087, 0088, 0090, 0115, 0116, ¶¶ 0091–93; Ex. 537-Nikon D7000 at 1[c]; Anon at 3:53–4:3, 4:4–23, 8:15–31, 8:65–9:25, 9:35–55, 10:8–20, 6:42–50, 7:43–54, 1:41–49; Jasinski at ¶¶ 111, 112, 113, 114, 115, 117, 7, 16; Ishiwata at ¶¶ 59, 61, 62, 63, 64, 65, 46; Parulski177 at 17:18–33, 17:34–56, 18:20–24, 23:33–45, 24:64–25:13, 25:14–21, 25:22–35, 25:37–44, 25:60–26:10, 26:66–27:3, 27:14–24, 27:25–32; Walker at ¶¶ 275, 0279, 0280, 0281, 0284, 0285, 0286, 0287, 0288, 0289, 0290, 260, 262, ¶¶ 0277–78, 0282–83, 0437–39, 0440–41.

The prior art references further describe “obtaining a second value (QI2) associated with the analysis.” *See, e.g.*, Iwamoto at 5:5–13, 1:49–65, 5:40–50, 6:1–18, 6:19–51, 7:65–8:16, 8:17–28, 8:29–44; Ex. 537-Kodak Z990 at 1[d]; Takeuchi at ¶¶ 0113, 0115, 121, 0122, 134, 0135, 0136, 0137, 0141, 0142, 146, 147, 8, 13, 0148, 0149, 0157, 0166, 0167, 0168, ¶¶ 0139–40; Kim397 at Abstract, ¶¶ 14, 15, 33, ¶¶ 0035–36, 0037–39, 0042–43, Claim 8; Mori at ¶¶ 31, 32, 33, 51, 54, 55, 72, 76, 77, 78, 80, 81; Shah at ¶¶ 0035, 0080, 0082, 0086, 0094, 0095, ¶¶ 0036–37;

Staudacher238 at 2:1–6, 2:7–33, 2:34–55, 4:9–24, 4:25–34, 4:35–50, 5:6–22, 6:56–7:4; Ramesh at ¶¶ 0007, 0008, 0024, 0029, 0030, 0031, 0051, ¶¶ 0041–42; Iwane at 4:48–5:5, 5:8–23, 5:24–34, 8:27–39, 8:40–53, 8:54–59, 12:16–25, 12:26–41, 12:42–49, 13:54–67; Alhadeef at 12:45–56, 12:57–65, 12:66–13:18, 13:19–25, 13:26–41, 13:42–48, 13:49–61, 14:27–30, 14:46–53, 4:28–31, 4:33–40, 7:53–62, 7:63–8:14, 8:15–31, 12:17–19, 15:1–12; Cooper at 1:41–46, 3:6–19, 3:20–30, 4:54–5:2, 5:3–6, 1:38–39, 1:49–59; Lv at ¶¶ 0042, 0045, 0046, 0051, 0032, 0035, 0028, 0006; Ex. 537-Samsung WB700 at 1[d]; Ex. 537-Canon EOS-1DX at 1[d]; Wu at 2:27–37, 2:43–55, 7:60–8:20, 10:15–19, 10:20–35, 12:40–61, 13:4–24; Nepomniachtchi at ¶¶ 325, 342, 349, 399, 407, 409; Chen at 4:6–20, 4:21–51, 4:52–62, 7:53–56, 7:57–8:7; Kim882 at ¶¶ 0062, 0063, 0066, 0067, 0006, 0008, 0016, 0018; Gao at ¶¶ 10, 21, 54, 55, 37, 8, 25; Robins at ¶¶ 0042, 0045, 0046, 0048, 0049, 0051, 0006, 0007, 0008; Fukuda at ¶¶ 0106–07, 0019–20, 0021–22, ¶¶ 0128, 0143, 0093, 0028, Abstract; Meguro at ¶¶ 44, 45, 47, 72, 82, 83, 90, 93; Ex. 537-Nikon S630 at 1[d]; Phillips at ¶¶ 0022, 0023, 0029, 0030, 0031, 0032, 0024, 0026; Ex. 537-Nikon D7000 at 1[d]; Anon at 3:53–4:3, 4:4–23, 5:53–6:8, 6:42–50, 7:43–54, 10:8–20, 1:59–2:8, 2:45–48; Jasinski at ¶¶ 87, 93, 94, 99, 104, 122, 123; Ishiwata at ¶¶ 11, 46, 59, 60, 68, 84, 74, 75, 104; Parulski177 at 28:5–15, 28:16–30, 29:49–55, 30:9–20, 31:18–34, 34:59–64, 34:65–35:7; Walker at ¶¶ 24, 30, 277, 292, 293, 319, 320, 481.

The prior art references further describe “estimating a second weight (c2) associated with the third value.” *See, e.g.*, Iwamoto at 5:40–50, 6:52–66, 6:67–7:9, 7:10–16, 3:35–57, 7:40, 3:58–60, 7:41–43, 7:18, 7:44–58, 3:64–4:3, 7:59–64, 7:65–8:16, 9:48–56; Ex. 537-Kodak Z990 at 1[e]; Takeuchi at ¶¶ 132, 0134, 140, 0148, 251, 253, 254, 255, 259, 260, 261; Kim397 at ¶¶ 14, 15, 44, 9, Abstract; Mori at ¶¶ 32, 33, 34, 51, 54, 55, 0069, 0072, 81, ¶¶ 0070–71; Shah at ¶¶ 0035, 0069, 0070, 0075, 0076, 0040, 0086, 0094, 0095, ¶¶ 0071–72, 0073–74, 0097–98; Staudacher238 at

2:34–55, 4:25–34, 4:35–50, 4:51–5:5, 2:7–33, 2:56–3:2; Ramesh at ¶¶ 0030, 0041, 0062, 0039, 0040, 0032, 0033, 0034, ¶¶ 0037–38; Iwane at 4:48–5:5, 5:8–23, 13:54–67, 12:16–25, 12:57–13:3, 14:48–57, 1:43–52; Alhadeif at 12:51–56, 9:35–39, 12:4–12, 9:28–34, 14:16–30, 14:46–48, 8:30–31, 12:45–50, 12:59–65, 12:66–13:18, 13:19–25; Cooper at 1:41–46, 3:6–12, 3:31–37, 3:43–51, 3:54–67, 4:31–37, 4:54–5:2, 5:25–28; Lv at ¶¶ 0042, 0045, 0046, 0047, 0048, 0061, 0063; Ex. 537-Samsung WB700 at 1[e]; Ex. 537-Canon EOS-1DX at 1[e]; Wu at 13:39–44, 13:56–14:3, 14:4–21, 14:22–26, 5:53–61, 9:6–14, 15:24–29, Abstract, 2:27–42, 2:43–55; Nepomniachtchi at ¶¶ 191, 189, 171, 118, 297, 300, 409, 407; Chen at 1:58–2:3, 2:17–39, 7:57–8:7, 6:53–54, 8:52–61, 7:30–33, 1:9–13, 1:54–57, Claim 14; Kim882 at ¶¶ 0062, 0066, 0067, 0069, 0077, 0100, 0006, 0016, ¶¶ 0017–18; Gao at ¶¶ 55, 8, 9, 10, 53, 54, 25, 57, 58; Robins at ¶¶ 0048, 0049, 0051, 0042, 0045, 0046, 0006, 0007, 0028, 0005, 0024, 0025; Fukuda at ¶¶ 0091, 0092, 0093, 0114, 0148, 0175, ¶¶ 0111–12, 0139–40, 0149–50; Meguro at ¶¶ 6, 8, 9, 44, 45, 58, 59, 60, 61, 67, 90, 91, 100, 101, 102, 103, 104; Ex. 537-Nikon S630 at 1[e]; Phillips at ¶¶ 0023, 0026, 0030, 0032, 0090, 0094, 0029, ¶¶ 0033–34, 0091–93; Ex. 537-Nikon D7000 at 1[e]; Anon at 3:53–4:3, 4:4–23, 4:42–51, 8:32–35, 2:9–15, 5:26–51, 4:56–5:25, 9:26–34, 9:64–67; Jasinski at ¶¶ 122, 123, 126, 120, 121, ¶¶ 0028–29, 0030–31, 0025–26; Ishiwata at ¶¶ 69, 70, 83, 108, 112, 20, 21, 32; Parulski177 at 25:22–35, 25:60–26:10, 27:25–32, 19:40–59, 19:60–20:8, 29:49–55, 30:9–20, 31:18–34, 32:5–17; Walker at ¶¶ 321, 322, 326, 328, 335, 397, Claims 46, 47.

The prior art references further describe “calculating a total value according to, or based on, the first value (QI1) weighted according to first weight (c1), the second value (QI2) weighted according to second weight (c2).” *See, e.g.,* Iwamoto at 3:58–60, 7:18, 3:64–4:3, 3:27–34, 7:41–58, 9:31–47, 6:67–7:9, 5:40–50; Ex. 537-Kodak Z990 at 1[f]; Takeuchi at ¶¶ 132, 0140, 141, 0142, 0146, 0147, 0148, 0149, 0157, 253, 254, 259, 265, 116, 119; Kim397 at Abstract, ¶¶ 14, 15, 44, 6,

7, 1, 0005, ¶¶ 0036–37, 0038–39, 0009–10, 0011–13, 0003–04; Mori at ¶¶ 33, 51, 55, 81, 100, 101, 102, 72, 64, 65; Shah at ¶¶ 0102, 0091, 0092, 0093, 0101, 0103, 0003, 0004, Claim 2; Staudacher238 at 2:34–55, 4:25–34, 4:35–50, 5:6–22, 2:7–33, 2:1–6, Abstract, 1:26–47, 1:48–57; Ramesh at ¶¶ 0006, 0030, 0034, 0039, 0040, 0041, 0048, 0062; Iwane at 4:48–61, 5:8–23, 1:30–42, 1:43–52; Alhadeef at 12:45–56, 9:28–39, 14:16–30, 14:46–53, 4:7–9, 3:49–64, 3:65–4:3, 4:4–6; Cooper at 2:63–3:5, 3:43–51, 4:1–9, 4:10–23, 4:24–37, 4:54–5:2, 5:3–12, 1:26–30, 1:41–46, 1:18–25; Lv at ¶¶ 0042, 0032, 0069, 0072, 0075, 0035, 0036, 0037, 0061, 0062, 0063, ¶¶ 0070–71; Ex. 537-Samsung WB700 at 1[f]; Ex. 537-Canon EOS-1DX at 1[f]; Wu at 12:40–61, 13:4–24, 13:25–38, 13:39–44, 4:43–58, 4:59–65, 5:17–32, 7:60–8:20, 8:21–30, 14:4–21, 14:22–26; Nepomniachtchi at ¶¶ 267, 189, 191, 342, 0349, 373, 374, 375, 398, 399, 300, ¶¶ 0347–48; Chen at 8:52–61, 7:30–33, 9:50–51, 2:17–39, 5:40–54, 2:40–60, 9:28–31, 1:58–2:3; Kim882 at ¶¶ 0069–70, 0075–76, 0085–86, 0093–94, 0007–08, 0009–10, 0019–20, 0108–09, ¶¶ 0071, 0072, 0084, 0092, 0095, 0100, 0101, 0102, 0103, 0006, 0011, 0016, 0018, 0021, 0107; Gao at ¶¶ 55, 10, 8, 9, 25, 57; Robins at ¶¶ 0051, 0048, 0049, 0041, 0042, 0045, 0046, 0052, Claim 8, ¶¶ 0039–40; Fukuda at ¶¶ 0091, 0092, 0093, 0148, 0149, 0014, 0100, ¶¶ 0111–12, 0113–14, 0150–51, 0019–20, 0021–22; Meguro at ¶¶ 42, 44, 45, 101, 102, 47, 65, 68; Ex. 537-Nikon S630 at 1[f]; Phillips at ¶¶ 0023, 0026, 0029, 0030, 0032, 0034, 0078, 0083; Ex. 537-Nikon D7000 at 1[f]; Anon at Abstract, 3:43–52, 4:24–33, 8:32–35, 3:53–4:3, 4:4–23, 1:59–2:8, 2:9–15, 2:16–28, 4:52–55, 4:56–5:25, 5:26–51, 9:26–34, 6:42–50, 8:15–31; Jasinski at ¶¶ 120, 121, 128, 129, 0028, ¶¶ 0029–30, 0019–20, Claim 25; Ishiwata at ¶¶ 105, 106, 108, 22, 23, 92, 93, Claims 3, 4; Parulski177 at 35:45–52, 36:3–16, 33:40–52, 33:53–34:6, 31:8–17, 31:18–34, 31:35–55; Walker at ¶¶ 181, 292, 293, 320, 321, 322, 326, 451, 452, 174, 176, 319.

The prior art references further describe “comparing the total value to a threshold.” *See, e.g.*, Iwamoto at 2:48–58, 6:19–51, 3:12–20, 8:29–44, 8:45–61, 8:62–9:6, 9:12–30; Ex. 537-Kodak Z990 at 1[g]; Takeuchi at ¶¶ 0157, 187, 212, 217, 218, 239, 11, 128, 130, 24; Kim397 at ¶¶ 35, 5, 14, 15, 36, 9, Abstract; Mori at ¶¶ 72, 81, 66, 71, 82, 73, Abstract; Shah at ¶¶ 0086, 0102, 0106, 0003, 0004, 0101, 0103, Abstract; Staudacher238 at 5:56–6:12, 6:13–33, 6:34–47, 6:56–7:4, 3:24–36, 3:37–50, 2:7–33, 2:34–55; Ramesh at ¶¶ 0004, 0006, 0030, 0039, 0040, 0061, 0062, 0063, 0064, ¶¶ 0041–42; Iwane at 12:16–25, 12:26–41, 12:42–49, 12:57–13:3, 13:6–16, 13:17–31, 10:13–24, 10:25–32, 11:16–28, 7:46–57, 9:65–10:2, 10:3–12; Alhadeif at 14:49–63, 14:16–30, 14:46–48, 12:45–56, 9:40–43, 3:49–64, 3:65–4:3, 4:4–6, 15:1–12, 15:13–22, 15:26–34, 15:63–67, 16:1–7; Cooper at 1:41–46, 3:38–51, 4:1–9, 4:10–23, 4:24–37, 5:25–28; Lv at ¶¶ 0075, 0076; Ex. 537-Samsung WB700 at 1[g]; Ex. 537-Canon EOS-1DX at 1[g]; Wu at Abstract, 4:66–5:16, 5:17–32, 5:33–52, 8:31–43, 8:44–63, 10:20–35, 10:36–50, 10:51–60, 2:27–42, 2:56–3:5, 3:22–32; Nepomniachtchi at ¶¶ 300, 376, 407, 399, 241, 242, 205, 342, 349, 350, 351, 352, 353, 354; Chen at 2:4–16, 1:58–2:3, 7:53–56, 9:50–51, 1:16–23, 1:25–50; Kim882 at ¶¶ 0085–86, ¶¶ 0090, 0102, 0103, 0024, 0014, 0059; Gao at ¶¶ 55, 56, 58, 59, 61, 9, 12, 66, 67, 68; Robins at ¶¶ 0043, 0044, 0045, 0046, 0048, 0049, 0051, 0021, 0020; Fukuda at ¶¶ 0019–20, 0108–09, 0110–12, 0125–26, ¶¶ 0022, 0128, 0143, 0148, 0149; Meguro at ¶¶ 98, 82, 67, 9, 44, 48, 104, 107; Ex. 537-Nikon S630 at 1[g]; Phillips at ¶¶ 0024, 0032, 0009, 0098, 0115, 0116; Ex. 537-Nikon D7000 at 1[g]; Anon at 5:26–51, 5:53–6:8, 6:9–15, 7:55–63, 7:64–8:13, 9:26–34, 10:8–25, 1:59–2:8, 3:27–42, 8:15–31; Jasinski at ¶¶ 83, 84, 87, 88, 111; Ishiwata at ¶¶ 22, 23, 106, 108, 13, 14, Claims 3, 4; Parulski177 at 31:18–34, 31:35–51, 31:56–32:4, 36:3–16, 36:22–40, 36:41–56, 36:57–61; Walker at ¶¶ 313, 319, 323, 327, 387, 428, 30, Claim 33.

The prior art references further describe “determining whether the total value is higher than, or below than, the threshold.” *See, e.g.*, Iwamoto at 6:19–51, 2:48–58, 2:36–47, 8:29–44, 8:45–61, 8:62–9:6, 9:12–30; Ex. 537-Kodak Z990 at 1[h]; Takeuchi at ¶¶ 0157, 187, 217, 218, 130, 166, 167, 19, 20; Kim397 at ¶¶ 14, 15, 35, 44, Claims 8, 9; Mori at ¶¶ 72, 81, 65, 78, 63, 90, 91, 73; Shah at ¶¶ 0086, 0092, 0093, 0094, 0095, 0096, 0097, 0003, 0004; Staudacher238 at 3:24–36, 3:37–50, 5:56–6:12, 6:13–33, 6:34–47, 6:56–7:4; Ramesh at Abstract, ¶¶ 0004, 0005, 0033, 0034, 0039, 0040, 0053; Iwane at 7:33–41, 7:46–57, 7:65–8:5, 10:13–24, 11:29–36, 12:26–41, 12:42–49, 13:17–24; Alhadeif at 14:49–63, 15:1–12, 15:13–22, 14:27–30, 14:46–48, 14:16–26, 15:32–34; Cooper at 1:41–46, 3:38–42, 4:1–9, 4:10–23, 4:24–37, 5:25–28; Lv at ¶¶ 0075, 0076, 0007, 0047, 0048, 0042, 0033, 0038; Ex. 537-Samsung WB700 at 1[h]; Ex. 537-Canon EOS-1DX at 1[h]; Wu at Abstract, 5:17–32, 5:33–49, 8:31–43, 8:44–63, 10:20–35, 10:36–50, 10:61–11:6, 2:27–42; Nepomniachtchi at ¶¶ 312, 358, 361, 342, 376, 407, 409, 280; Chen at 1:58–2:3, 4:63–5:6, 2:4–16, 5:7–14, 2:17–39, 5:40–54, Claim 26; Kim882 at ¶¶ 0085, 0090, 0102, 0103, 0024, 0086, 0089, 0014; Gao at ¶¶ 55, 56, 57, 58, 61, 9, 8, 62; Robins at ¶¶ 0043, 0044, 0045, 0046, 0051, 0052, 0021, 0027; Fukuda at ¶¶ 0019–20, 0105–06, 0111–12, 0128–29, 0149–50, ¶¶ 0022, 0130, 0143, 0144; Meguro at ¶¶ 98, 82, 90, 91, 92, 103, 104, 107; Ex. 537-Nikon S630 at 1[h]; Phillips at ¶¶ 0024, 0026, 0030, 0079, 0080, 0114, 0115, 0116; Ex. 537-Nikon D7000 at 1[h]; Anon at 5:53–6:8, 6:9–15, 7:64–8:13, 3:27–42, 7:55–63, 2:29–38, 8:32–35, 10:8–20, 10:27–46; Jasinski at ¶¶ 88, 18, 3, 32, ¶¶ 0030–31; Ishiwata at ¶¶ 13, 14, 22, 23, 88, 89, 90, 91, 0108, 0111, 32, 44, ¶¶ 0109–10; Parulski177 at 31:18–34, 31:35–55, 31:56–32:4, 32:5–17, 36:3–16, 36:22–40, 36:41–56, 7:54–67, 2:31–41, 8:1–22; Walker at ¶¶ 30, 171, 188, 313, 319, 320, 323, 428.

The prior art references further describe “acting in response to the determining.” *See, e.g.*, Iwamoto at 6:19–51, 8:17–28, 8:29–44, 8:45–61, 8:62–9:6, 9:7–11, 9:31–47; Ex. 537-Kodak Z990

at 1[i]; Takeuchi at ¶¶ 29, 30, 31, 0157, 0281, 0282, 0283, 0284, 301, 302, Claims 23, 24, 25; Kim397 at ¶¶ 5, 25, 38, 6, ¶¶ 0009–10, 0012–13; Mori at ¶¶ 0072, 29, 30, 31, 32, 33, 34, 35, 0045, 0046, 10, 8, ¶¶ 0073–74, 0043–44; Shah at ¶¶ 0092, 0093, 0095, 0096, 0016, 0069, 0070, 0071, Abstract, ¶¶ 0072–73; Staudacher238 at 3:9–23, 3:24–36, 3:37–50, 5:23–42, 5:56–6:12, 6:13–33, 6:34–47, 6:56–7:4; Ramesh at ¶¶ 0024, 0025, 0026, 0051, 0052, 0062, Abstract, Claim 9; Iwane at 5:8–23, 7:27–32, 8:14–22, 12:6–15, 12:26–41, 12:42–49, 14:22–34; Alhadeef at 14:49–63, 15:1–12, 15:13–25, 1:34–45, 1:49–59, 3:16–21, 4:7–12, 4:14–16, 7:44–57, 3:10–15; Cooper at 4:27–30, 1:22–25, 2:63–3:5, 3:6–12, 3:38–42, 4:31–37, 5:29–42; Lv at ¶¶ 0009–11, 0012–13, ¶¶ 0033, 0075, 0076; Ex. 537-Samsung WB700 at 1[i]; Ex. 537-Canon EOS-1DX at 1[i]; Wu at Abstract, 2:27–42, 5:17–32, 8:31–43, 8:44–63, 9:6–14, 9:15–30, 10:36–50, 10:51–60, 10:61–11:6, 11:7–16, 11:17–26; Nepomniachtchi at ¶¶ 0028–31, ¶¶ 300, 399, 400, 376, 125; Chen at 9:50–51, 7:53–56, 4:21–51, 4:52–57, 8:17–39, 1:54–57, 4:52–62, 1:58–2:3, 4:63–5:3, 2:4–16, 5:7–14, 2:17–39, 5:40–54, Claim 25; Kim882 at ¶¶ 0069–70, 0072–73, 0085–86, 0089–90, 0093–94, ¶¶ 0071, 0088, 0095, 0099, 0100, 0101, 0102, 0103, 0014, 0024; Gao at Abstract, ¶¶ 8, 9, 12, 13, 25, 57, 61; Robins at ¶¶ 0045, 0046, 0038, 0052, 0053, 0005, 0007, 0051; Fukuda at ¶¶ 0111–12, 0113–15, 0128–29, 0131–32, 0164–65, 0166–67, ¶¶ 0130, 0133, 0134; Meguro at ¶¶ 85, 86, 87, 93, 64, 73, 57, 104; Ex. 537-Nikon S630 at 1[i]; Phillips at ¶¶ 0080, 0081, 0083, 0008, 0063, 0082, 0098, 0022; Ex. 537-Nikon D7000 at 1[i]; Anon at 2:64–3:14, 3:27–42, 5:53–6:8, 6:9–15, 7:55–63, 7:64–8:13, 9:35–55, 10:8–20, 1:59–2:8; Jasinski at ¶¶ 24, 31, 84, 85, 87, 88, 4, 91, ¶¶ 0028–29, 0022–23, 0025–26; Ishiwata at ¶¶ 32, 44, 46, 60, 0111, 114, 115, 116, 28, 29, ¶¶ 0109–10; Parulski177 at 30:9–20, 31:35–55, 31:18–34, 28:16–30, 28:5–15, 37:6–22, 2:7–16; Walker at ¶¶ 29, 30, 31, 169, 191, 261, 276, 0328, ¶¶ 0329–30, 0331–32.

The prior art references further describe “where second weight (c2) is partially based respective values of previous images in said video.” *See, e.g.*, Iwamoto at 5:40–50, 6:19–51, 6:52–66, 6:67–7:9, 3:35–57, 7:40, 3:58–60, 7:41–43, 7:18, 7:44–58, 3:64–4:3, 7:59–64, 7:65–8:16, 8:62–9:6, 9:31–47; Ex. 537-Kodak Z990 at 1[j]; Takeuchi at Abstract, ¶¶ 0006, 0113, 0134, 0135, 0136, 0137, 0149, 0157, 0252, 0253, 0254, 0255, 260, 258, 0284, ¶¶ 0251–52, 0256–57; Kim397 at ¶¶ 0036–38, 0032–34, 0009–10, ¶¶ 15, 14, 44, 5, 6, 7, 0035, Abstract; Mori at ¶¶ 108, 44, 45, 46, 31, 32, 33, 76, 77, 80, 81, 82, 0090, 0091, ¶¶ 0088–89; Shah at ¶¶ 0094, 0095, 0096, 0092, 0093, 0003, 0017, Abstract; Staudacher238 at 2:7–33, 2:34–55, 4:25–34, 4:35–50, 5:6–22, 1:48–57, 3:60–4:8, Abstract; Ramesh at ¶¶ 0024, 0025, 0029, 0030, ¶¶ 0026–27, 0041–42, 0047–48; Iwane at 8:64–9:5, 9:13–22, 9:23–39, 9:40–47, 10:40–50, 12:16–25, 12:26–41, 14:35–47, 14:48–57, 14:58–67, 15:1–10; Alhadeif at 9:28–34, 11:7–15, 11:40–54, 12:51–56, 13:26–41; Lv at ¶¶ 0047, 0048, 0064, 0066, 0035, 0026, 0006, 0007; Ex. 537-Samsung WB700 at 1[j]; Ex. 537-Canon EOS-1DX at 1[j]; Wu at 7:31–46, 5:53–61, 11:7–16, 13:39–44, 14:4–21, 15:40–48, 15:49–61, 5:17–32, 5:33–52; Nepomniachtchi at ¶¶ 110, 111, 330, 335, 342, 376, 407; Chen at 4:6–20, 4:21–51, 8:17–39, 6:53–54, 8:52–61, 7:30–33, 9:50–51, 1:54–57, 1:58–2:3, 2:17–39; Kim882 at ¶¶ 0099, 0100, 0101, 0077, 0069, 0006, 0010, ¶¶ 0012–13; Gao at ¶¶ 25, 26, 53, 54, 55, 10, 12, 22; Robins Claim 8, ¶¶ 0042, 0048, 0049, 0050, 0051, 0052; Fukuda at ¶¶ 0093, 0096, 0139, 0148, 0127, 0128, 0134, ¶¶ 0113–14, 0149–50, 0117–18; Meguro at ¶¶ 42, 45, 80, 64, 72, 58, 68, 102; Ex. 537-Nikon S630 at 1[j]; Phillips at ¶¶ 0114, 0115, 0116, 0023, 0024, 0025, 0026, 0027, 0028, 0029, 0030, 0079, 0080, 0032, 0041, 0042, 0043, ¶¶ 0033–34, 0044–45, 0046–47; Ex. 537-Nikon D7000 at 1[j]; Anon at Abstract, 6:42–50, 8:15–31, 10:2–7, 10:8–25, 2:45–48, 2:64–3:14, 3:15–26, 3:53–4:3, 8:32–35, 10:27–46; Jasinski at Abstract, ¶¶ 0004, 0050, 0051, 0061, 0073, 0084, 0085, 0088, 0092, 0093, 0094, 0096, 0110, 0111, 0112, 0113, 0114, 0115, 0118, 0119, 0120, 0121,

0122, 0127, 128, 129, 130, 131, 0134, ¶¶ 0031–32, 0116–17, 0018–21, 0022–24, 0025–26; Ishiwata at ¶¶ 12, 21, 32, 111, 112, 113, ¶¶ 0039–43; Parulski¹⁷⁷ at 15:5–11, 15:13–46, 29:49–55, 34:7–26, 34:59–64, 34:65–35:7, 36:62–37:5, 37:23–40; Walker at ¶¶ 328, 317, 318, 319, 320, 0313, 388, 389, 390, 334, 335, 316, ¶¶ 0307–08, 0309–10, 0311–12.

Other examples of these concepts are cited in the attached charts for the above references. See Appendix A, Exhibits 537-Alhadeef through 537-Wu. It would have been known and simple to take prior art for real time assessment of picture quality by comparison with similar objects, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving picture quality. *Id.*

Samsung is not aware of any secondary considerations supporting non-obviousness of the '537 Patent claims. To the extent SnapAid seeks to introduce any alleged secondary considerations in the future, Samsung reserves the right to respond at that time.

F. Invalidity Under Section 112

Samsung provides an identification of the limitations of the '537 Patent that are invalid based on indefiniteness under pre-AIA 35 U.S.C. § 112 ¶ 2, or enablement or written description under pre-AIA 35 U.S.C. § 112 ¶ 1. These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1, 2, 4–12, 14–20 of the '537 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). For example, as applied in SnapAid’s Infringement Contentions, the terms “calculating a total value,” “acting in response to the determining,” “controlled the processor,” “estimating a second weight (c2) associated with the

third value,” “where second weight (c2) is partially based respective values of previous images in said video,” “wherein threshold changes over image sequence based on total value,” “an image of the scene,” “wherein first value (Q11) is associated with said camera movement at the time of said image frame capture, where movements where measured by inertial measurement unit attached or part of said camera,” and “wherein the acting comprises affecting the digital camera in response to the total value” are indefinite because they are not only subjective but also do not have a meaning that can be clearly determined from the patent, and thus fail to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1, 2, 4–12, 14–20 of the ’537 Patent are invalid under § 112 ¶ 1, because the specification as filed does not contain a sufficient written description supporting those claims. For example, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of SnapAid’s contentions. For example, Asserted Claims 1, 2, 4–12, 14–20 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following reasons: the ’537 Patent fails to provide an adequate written description of the phrase “calculating a total value” as applied in SnapAid’s Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the ’537 Patent. The subject matter of these claims, as described above, is not sufficiently shown in the specification of the ’537 Patent. The subject matter of these claims, as described above, is not sufficiently enabled because the ’537 patent specification does not teach one skilled in the art how to make and use the alleged invention. For example, the ’537 Patent fails to enable the following and thus, Asserted Claims 1, 2, 4–12, 14–20 of the ’537 Patent are invalid: “calculating a total value.” The foregoing phrase is not described in such a way that one

of ordinary skill in the art could implement it to achieve the results sought by the individual named on the face of the '537 Patent as the inventor. The foregoing phrase is not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '537 Patent was in possession of the claimed subject matter. The Asserted Claims of the '537 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on SnapAid in accordance with the Court's Scheduling Order.

G. Invalidity Under Section 101

The asserted claims of the '537 patent are invalid under *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208 (2014) because they are directed to patent-ineligible subject matter and fail to include an “inventive concept,” *i.e.*, some additional element or combination of elements “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” 573 U.S. 208, 217–18 (2014).

The asserted claims of the '537 patent are directed to a patent-ineligible concept—namely, the abstract idea of assessing picture quality and suggesting that the photographer take another picture after making an adjustment, such as to the photographer's location or angle. The claims are directed to a process that photographers conduct in their minds—assessing a picture's quality and then taking a new picture to try to get a better picture—which renders them abstract under Federal Circuit case law holding that “methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas—the ‘basic tools of scientific and technological work’ that are open to all.” *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972));

PersonalWeb Techs. LLC v. Google LLC, 8 F.4th 1310, 1316 (Fed. Cir. 2021); *Longitude Licensing Ltd. v. Google LLC*, 2025 WL 1249136, at *2 (Fed. Cir. Apr. 30, 2025); *Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021); *Broadband iTV, Inc. v. Amazon.com, Inc.*, 113 F.4th 1359, 1371 (Fed. Cir. 2024); *USC IP P’ship, L.P. v. Meta Platforms, Inc.*, 2023 WL 5606977, at *2 (Fed. Cir. Aug. 30, 2023). This is further confirmed by the specification, which provides that the claimed inventions “utilize camera hardware ... to evaluate pictures taken in real time, and actively assist in obtaining the best picture given the circumstances at hand.” ’537 Pat., 2:13-17.

The asserted claims of the ’537 patent also lack any inventive concept and merely implement the abstract idea of taking a better picture using generic camera components—a “device,” a “video digital camera module,” an “optical lens,” and an “image sensor.” ’537 Pat., Cl. 10. The inventor of the ’537 patent does not purport to have invented these components or described or claimed any specific improvement in their functionality. To the contrary, the specification confirms that these are conventional components. *See, e.g.*, ’537 Pat., 6:51-52 (“Any suitable input device, such as but not limited to a sensor, may be used ...”), 6:56-58 (“Any suitable processor may be employed to compute or generate information as described herein ...”). That these components are known and conventional is further demonstrated by their disclosure throughout the prior art disclosed in these contentions. Further, the dependent claims similarly recite additional generic limitations that fail to add any inventive concept, and are therefore patent-ineligible. *See In re Bd. of Trs. of Leland Stanford Junior Univ.*, 991 F.3d 1245, 1250 (Fed. Cir. 2021); *Braemar Mfg., LLC v. ScottCare Corp.*, 816 F. App’x 465, 470 (Fed. Cir. 2020); *In re TLI Commc’ns LLC Pat. Litig.*, 823 F.3d 607, 611 (Fed Cir. 2016). Accordingly, the asserted claims of the ’537 patent are patent-ineligible under § 101.

IV. INVALIDITY CONTENTIONS FOR THE '348 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the “References Cited” on the face of the '348 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Samsung may rely upon that prior art, including the “References Cited” on the face of the '348 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Samsung reserves the right to rely upon additional prior art, information, and/or knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

The claim charts attached in Appendix A as Exhibits 348-Anon through 348-Wu identify where each limitation of the Asserted Claims of the '348 Patent is found in the prior art.

C. Identification of the Prior Art

Based on SnapAid’s Preliminary Infringement Contentions, Samsung identifies prior art below and in Appendix A as Exhibits 348-Anon through 348-Wu, which contain charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits 348-Anon through 348-Wu and below, Samsung has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Samsung notes that it has applied the prior art in accordance with SnapAid’s improper

assertions of infringement and improper applications of the claims. Samsung does not agree with SnapAid’s application of the claims and denies infringement.

Samsung further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Samsung reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Samsung has also identified exemplary obviousness combinations further below.

'348 Patent Prior Art Patents / Patent Applications				
Ex. No.	Patent / Publication No.	Country of Origin	Filing Date	Date of Issue / Publication
Ex. 348-Anon	U.S. Patent No. 8,508,622 (“Anon”)	U.S.	Jan. 18, 2011	Aug. 13, 2013
Ex. 348-Cooper	U.S. Patent No. 7,286,177 (“Cooper”)	U.S.	Dec. 19, 2001	Oct. 23, 2007
Ex. 348-Fredlund	U.S. Patent Pub. No. 2011/0216209 A1 (“Fredlund”)	U.S.	Mar. 3, 2010	Sept. 8, 2011
Ex. 348-Fukuda	U.S. Patent Pub. No. 2010/0177207 A1 (“Fukuda”)	U.S.	Jan. 11, 2010	July 15, 2010
Ex. 348-Joshi	U.S. Patent No. 8,264,553 (“Joshi”)	U.S.	Nov. 12, 2009	Sept. 11, 2012
Ex. 348-Kim397	U.S. Patent Pub. No. 2006/0260397 A1 (“Kim397”)	U.S.	May 12, 2006	Nov. 23, 2006
Ex. 348-Kim882	U.S. Patent Pub. No. 2011/0187882 A1 (“Kim882”)	U.S.	Sept. 10, 2010	Aug. 4, 2011
Ex. 348-Koh	U.S. Patent No. 7,973,848 (“Koh”)	U.S.	Mar. 31, 2008	July 5, 2011
Ex. 348-Li	U.S. Patent Pub. No. 2011/0150447 A1 (“Li”)	U.S.	Dec. 21, 2009	June 23, 2011
Ex. 348-Lv	U.S. Patent Pub. No. 2013/0286161 A1 (“Lv”)	U.S.	Apr. 25, 2012	Oct. 31, 2013

Ex. 348-Meguro	U.S. Patent Pub. No. 2009/0251549 A1 (“Meguro”)	U.S.	Aug. 23, 2007	Oct. 8, 2009
Ex. 348-Mori	U.S. Patent Pub. No. 2011/0080494 A1 (“Mori”)	U.S.	Sept. 30, 2010	Apr. 7, 2011
Ex. 348-Nepomniachtchi	U.S. Patent Pub. No. 2013/0085935 A1 (“Nepomniachtchi”)	U.S.	May 1, 2012	Apr. 4, 2013
Ex. 348-Parulski177	U.S. Patent No. 6,539,177 (“Parulski177”)	U.S.	July 17, 2001	Mar. 25, 2003
Ex. 348-Parulski699	U.S. Patent Pub. No. 2004/0201699 A1 (“Parulski699”)	U.S.	July 17, 2001	Oct. 14, 2004
Ex. 348-Phillips	U.S. Patent Pub. No. 2005/0226490 A1 (“Phillips”)	U.S.	Mar. 30, 2005	Oct. 13, 2005
Ex. 348-Pore	U.S. Patent Pub. No. 2009/0290037 A1 (“Pore”)	U.S.	May 22, 2008	Nov. 26, 2009
Ex. 348-Savakis	U.S. Patent No. 6,671,405 (“Savakis”)	U.S.	Dec. 14, 1999	Dec. 30, 2003
Ex. 348-Staudacher238	U.S. Patent No. 9,282,238 (“Staudacher238”)	U.S.	Oct. 29, 2010	Mar. 8, 2016
Ex. 348-Takeuchi	U.S. Patent Pub. No. 2010/0149361 A1 (“Takeuchi”)	U.S.	Oct. 14, 2009	June 17, 2010
Ex. 348-Wu	U.S. Patent No. 9,036,069 (“Wu”)	U.S.	Sept. 12, 2012	May 19, 2015

'348 Patent Prior Art NPL References				
Ex. No.	Title	Date of Publication	Author	Publisher
Ex. 348-Garcia-Molina	Garcia-Molina, H., Database Systems: The Complete Book (2d ed. 2009) (“Garcia-Molina”)	2009	Garcia-Molina, H. et al.	Pearson Prentice Hall

'348 Patent Prior Art Products/Systems		
Ex. No.	System/Product	Public Disclosure Date

Ex. 348-Canon SX210 IS	Canon Powershot SX210 IS Digital Camera	June 2010
Ex. 348-Kodak Z990	Kodak Easyshare Max Z990 Digital Camera	May 2011
Ex. 348-Nikon S630	Nikon Coolpix S630 Digital Camera	February 2009
Ex. 348-Samsung WB700	Samsung WB700 Digital Camera	December 2010
Ex. 348-Sony A33	Sony A33 Digital Camera	October 2010
Ex. 348-Sony NEX-3 NEX-5	Sony NEX-3/NEX-5 Digital Camera	May 2010
Ex. 348-Sony TX55	Sony DSC-TX55 Digital Camera	2011

'348 Patent Additional Prior Art/Background Art
U.S. Patent Pub. No. 2012/0201427 A1 (“Jasinski”)
U.S. Patent Pub. No. 2007/0283269 A1 (“Obrador”)
U.S. Patent Pub. No. 2010/0246939 A1 (“Aisaka”)
U.S. Patent Pub. No. 2008/0013851 A1 (“Ishiwata”)
U.S. Patent No. 8,009,198 (“AlhadeF”)
U.S. Patent Pub. No. 2009/0296989 A1 (“Ramesh”)
U.S. Patent Pub. No. 2004/0012682 A1 (“Kosaka”)
U.S. Patent Pub. No. 2010/0214216 A1 (“Nasiri”)
U.S. Patent Pub. No. 2013/0076856 A1 (“Wakabayashi”)
U.S. Patent Pub. No. 2012/0133746 A1 (“Bigioi”)
U.S. Patent Pub. No. 2002/0110286 A1 (“Cheatle”)
U.S. Patent No. 5,831,670 (“Suzuki”)
U.S. Patent No. 8,682,097 (“Steinberg”)
T. Liu, Image Quality Assessment Using Multi-Method Fusion (“Liu”)
U.S. Patent Pub. No. 2012/0105662 A1 (“Staudacher”)
U.S. Patent Pub. No. 2011/0222724 A1 (“Yang”)
U.S. Patent Pub. No. 2008/0192129 A1 (“Walker”)

Discovery is ongoing, and Samsung reserves the right to amend its identification of prior art herein based on additional investigation and third-party discovery.

D. Anticipation

At least under SnapAid's apparent infringement theory, the Asserted Claims of the '348 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by primary references as set forth below and in the attached claim charts. The prior art references or systems listed herein and in the accompanying claim charts may disclose the elements of the Asserted Claims explicitly and/or inherently. To the extent SnapAid asserts that any of the prior art references charted in the attached exhibits fail to explicitly or inherently disclose any element of the Asserted Claims, Samsung contends it would have been obvious to modify such reference to include the allegedly missing element, in view of the knowledge of one of ordinary skill in the art, the admitted prior art of the Asserted Patents, and/or in combination with any of the other prior art references identified in the Exhibits for that respective patent.

E. Obviousness

At least under SnapAid's apparent infringement theory, the Asserted Claims of the '348 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Samsung contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted '348 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Samsung's anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

One of the Following Primary References	In Combination with One or More of the Following References
Anon	Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Canon SX210 IS	Anon, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Cooper	Anon, Canon SX210 IS, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Fredlund	Anon, Canon SX210 IS, Cooper, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Fukuda	Anon, Canon SX210 IS, Cooper, Fredlund, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu

Garcia-Molina	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Joshi	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Kim397	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Kim882	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Kodak Z990	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Koh	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630,

	Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Li	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Lv	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Meguro	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Mori	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Nepomniachtchi	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu

Nikon S630	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Parulski177	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Parulski699	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Phillips	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Pore	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Samsung WB700	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630,

	Parulski177, Parulski699, Phillips, Pore, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Savakis	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Sony A33	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Sony NEX-3 NEX-5	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony TX55, Staudacher238, Takeuchi, Wu
Sony TX55	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Staudacher238, Takeuchi, Wu
Staudacher238	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Takeuchi, Wu

Takeuchi	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Wu
Wu	Anon, Canon SX210 IS, Cooper, Fredlund, Fukuda, Garcia-Molina, Joshi, Kim397, Kim882, Kodak Z990, Koh, Li, Lv, Meguro, Mori, Nepomniachtchi, Nikon S630, Parulski177, Parulski699, Phillips, Pore, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have understood that each of these references are in the same field of endeavor, namely real time assessment of picture quality. *See, e.g.*, Joshi at 3:52–4:10, 3:52–4:5, 8:59–9:15, 1:61–2:19, 12:11–27; Phillips at ¶¶ 0012, 0080, 0094, 0021, 0032; Kim882 at ¶¶ 0051, 0095, Abstract, ¶¶ 0103–04, 0089–90; Li at ¶¶ 31, 113, ¶¶ 0065–66, 0134–35, 0083–84; Ex. 348-Garcia-Molina; Savakis at 5:30–61, 4:6–26, 2:45–55, Claims 18, 27; Koh at 5:52–6:5, 12:24–35, 7:26–37, 2:48–62, 9:22–35; Fredlund at ¶¶ 0048, 0073, 0064, 0069, ¶¶ 0063–64; Meguro at ¶¶ 21, 6, 58, 25, Abstract; Nepomniachtchi at ¶¶ 296, 100, 11, 318; Ex. 348-Sony NEX-3 NEX-5; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Ex. 348-Samsung WB700; Takeuchi at ¶¶ 176, 0147, 166, Abstract, ¶¶ 0006–07; Cooper at 1:49–59, 5:29–42, 4:31–43, 4:27–37, 4:24–37; Fukuda at ¶¶ 0141–42, 0126–27, ¶¶ 0014, 0142, 0066; Ex. 348-Nikon S630; Ex. 348-Canon SX210 IS; Anon Claim 1, 1:59–2:8, 5:26–51, Abstract, 7:55–63; Pore Claim 12, ¶¶ 0037, 0047, 0028, ¶¶ 0110–11; Parulski699 at Abstract, ¶¶ 0201, 0224, 0222, 0210, 0217; Mori at ¶¶ 10, 35, 55, 95, Abstract; Ex. 348-Sony A33; Parulski177 at Abstract, 30:50–31:7, 28:31–57, 35:8–23, 5:64–6:22, 28:16–30;

Ex. 348-Kodak Z990; Staudacher238 at 3:60–4:8, 4:25–34, 5:56–6:12, 1:48–57, 6:56–7:4; Kim397 at Abstract, ¶¶ 15, 26, 14, ¶¶ 0026–27; Ex. 348-Sony TX55; Lv at ¶¶ 0046, 0083, 0042, 0027, 0061.

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, picture quality. *See, e.g.*, Joshi at 3:52–4:10, 3:52–4:5, 1:61–2:19, Abstract, 3:47–59; Phillips at ¶¶ 0012, 0094, 0032, 0031, ¶¶ 0142–43; Kim882 at ¶¶ 0051, 0052, 0006, Abstract, ¶¶ 0103–04; Li at ¶¶ 31, 131, 63, 26, 113; Ex. 348-Garcia-Molina; Savakis at 5:30–61, 3:58–4:5, 4:64–5:29, 4:44–63, Claim 18; Koh at 5:52–6:5, 9:22–35, 6:56–7:2, 5:39–51, Abstract; Fredlund at ¶¶ 0048, 0034, 0064, ¶¶ 0063–64; Meguro at ¶¶ 21, 6, 80, Abstract; Nepomniachtchi at ¶¶ 296, 100, 184, 131; Ex. 348-Sony NEX-3 NEX-5; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Ex. 348-Samsung WB700; Takeuchi at ¶¶ 176, 0121, ¶¶ 0108–09, 0006–07, Abstract; Cooper at 1:49–59, 5:29–42, 2:63–3:5, 1:22–30, 1:26–30; Fukuda at ¶¶ 0141–42, 0164–65, 0055–56, ¶¶ 0066, 0014; Ex. 348-Nikon S630; Ex. 348-Canon SX210 IS; Anon Claim 1, 1:59–2:8, 5:26–51, Abstract, 2:9–15; Pore at ¶¶ 0037, 0047, 0048, Claims 12, 1; Parulski699 at ¶¶ 0187, 0210, 0072, 0186, 0201; Mori at ¶¶ 10, 56, Abstract, ¶¶ 0102–03, 0073–74; Ex. 348-Sony A33; Parulski177 at 28:31–57, 5:64–6:22, 30:50–31:7, 28:16–30, 34:7–26; Ex. 348-Kodak Z990; Staudacher238 at 3:60–4:8, 2:7–33, 5:56–6:12, 2:56–3:2, Claim 11; Kim397 at ¶¶ 26, 5, 28, ¶¶ 0026–27, 0024–25; Ex. 348-Sony TX55; Lv at ¶¶ 0046, 0083, 0042, 0032, 0045.

Further, the Asserted Claims of the '348 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—*i.e.*, the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe “[a] digital image acquisition system.” *See, e.g.*, Joshi at Abstract, 2:50–57, 3:34–41, 4:11–20, 13:19–26, 1:61–2:19; Phillips at

¶¶ 0065, 0015, 0021, 0134, 0135, 0136, 0137, ¶¶ 0142–43, 0060–61, 0063–64; Kim882 at Abstract, ¶¶ 0002, 0006, 0059, 0109, ¶¶ 0042–44; Li at ¶¶ 6, 25, 26, 30, 31, 40, 112, 113; Ex. 348-Garcia-Molina at 1[pre]; Savakis at 1:13–30, 2:5–22, 2:45–55, 2:56–62, 13:4–15, 13:25–33, 14:66–15:16, 15:39–52; Koh at Abstract, 1:18–23, 1:53–60, 1:61–2:4, 2:19–30, 3:39–40, 3:43–45, 5:52–6:5; Fredlund at ¶¶ 0011, 0033, 0034, 0035, 0036, 0037, 0038, 0039, 0040, 0041, 0042, 0048, 0049, 0054, 0001, ¶¶ 0013–17; Meguro at Abstract, ¶¶ 1, 6, 19, 20, 21, 22; Nepomniachtchi at ¶¶ 91, 92, 174, 94, 95, 179, 180, 62; Ex. 348-Sony NEX-3 NEX-5 at 1[pre]; Wu at Abstract, 1:18–20, 2:56–3:5, 3:22–32, 4:9–11, 4:25–42, 6:20–33, 6:34–40, 6:41–53; Ex. 348-Samsung WB700 at 1[pre]; Takeuchi at Abstract, ¶¶ 2, 107, 149, 156, 319, 304, ¶¶ 0006–07; Cooper at Abstract, 1:5–7, 1:18–21, 1:33–37, 1:49–59, 2:20–33, 2:52–59; Fukuda at ¶¶ 0013, 0014, 0031, 0061, ¶¶ 0055–56; Ex. 348-Nikon S630 at 1[pre]; Ex. 348-Canon SX210 IS at 1[pre]; Anon at Abstract, 1:14–17, 2:55–59, 2:64–3:14, 5:53–6:8, 1:59–2:8, 2:16–28, 1:7–10; Pore at ¶¶ 0002, 0004, 0011, 0024, 0025, 0026, 0027, 0033; Parulski699 at ¶¶ 0002, 0011, 0012, 0080, 0081, 0082, 0096, 0101; Mori at Abstract, ¶¶ 10, 36, 38, 0040, 0041, 11, ¶¶ 0012–14, 0042–43; Ex. 348-Sony A33 at 1[pre]; Parulski177 at 5:50–63, 5:64–6:22, 7:54–67, 2:31–41, 8:1–22, 11:59–12:7, 12:37–43, 16:52–67, 17:1–13, 44:27–54; Ex. 348-Kodak Z990 at 1[pre]; Staudacher238 at Abstract, 1:19–20, 1:26–47, 1:48–57, 2:1–6, 3:51–59, 3:60–4:8; Kim397 at Abstract, ¶¶ 5, 15, 22, 28, ¶¶ 0024–25, 0032–33; Ex. 348-Sony TX55 at 1[pre]; Lv at ¶¶ 0026, 0029, 0031, 0077, 0080, 0082, 0006, ¶¶ 0015–16.

The prior art references further describe “an image capture component for capturing in a buffer, a current digital image having pixels.” *See, e.g.*, Joshi at 2:50–57, 2:65–3:6, 3:21–33, 3:47–59, 5:12–31, 1:61–2:19; Phillips at ¶¶ 0065, 0011, 0012, 0036, 0042, 0105, 0162, ¶¶ 0146–48, 0149–52; Kim882 at ¶¶ 0046–47, 0048–49, 0090–91, 0103–04, ¶¶ 0050, 0051, 0052, 0006, 0094, 0095, Abstract; Li at ¶¶ 31, 40, 63, 74, 87, 91, 113, ¶¶ 0044–45; Ex. 348-Garcia-Molina at 1[a];

Savakis at 2:5–22, 5:8–29, 9:65–10:28, 15:39–52, Claim 37; Koh at 4:8–12, 5:36–38, 5:46–51, 5:52–6:5, 6:6–15, 11:31–41, 6:28–33; Fredlund at ¶¶ 0037, 0039, 0040, 0042, 0044, 0048, 0060, 0034; Meguro at ¶¶ 21, 22, 79, 80, 42, 95, 96, 98, 99; Nepomniachtchi at ¶¶ 92, 94, 95, 96, 100, 108, 112, 176; Ex. 348-Sony NEX-3 NEX-5 at 1[a]; Wu at 4:66–5:16, 6:34–40, 6:41–53, 6:54–63, 7:60–8:20, 8:31–43, 9:55–10:3, Abstract, 1:18–20, 1:24–40, 13:4–24, 15:6–23; Ex. 348-Samsung WB700 at 1[a]; Takeuchi at ¶¶ 0017, 0083, 0084, 0086, 0091, 0097, 117, 154, ¶¶ 0087–88, 0108–09, 0111–12; Cooper at 2:26–33, 2:52–59, 2:63–3:5, 3:6–12, 4:27–30, 4:44–53; Fukuda at ¶¶ 0055–56, 0082–83, 0094–95, ¶¶ 0058, 0061, 0065, 0085, 0086; Ex. 348-Nikon S630 at 1[a]; Ex. 348-Canon SX210 IS at 1[a]; Anon at Abstract, 1:59–2:8, 3:15–26, 3:53–4:3, 4:4–23, 5:53–6:8, 9:64–67, 1:33–40, 1:7–10; Pore at ¶¶ 0024, 0026, 0027, 0028, 0029, 0033, 0046, 0004; Parulski699 at ¶¶ 0078, 0079, 0113, 0167, 0203, 0273; Mori at Abstract, ¶¶ 35, 52, 56, 90, 96, 97, 100, 109; Ex. 348-Sony A33 at 1[a]; Parulski177 at 11:33–39, 14:22–45, 16:52–67, 25:14–21, 25:22–35, 25:46–53, 44:27–54; Ex. 348-Kodak Z990 at 1[a]; Staudacher238 at 1:26–47, 1:48–57, 3:60–4:8, 4:9–24, 4:25–34, 5:43–55, 5:56–6:12, 6:56–7:4; Kim397 at ¶¶ 5, 24, 26, 28, 39, ¶¶ 0032–34; Ex. 348-Sony TX55 at 1[a]; Lv at ¶¶ 0006, 0007, 0026, 0027, 0031, 0035, 0049, 0079.

The prior art references further describe “at least one digital processor programmed for real time computation of multiple quality indicators characterizing quality of the current digital image.” *See, e.g.*, Joshi at 2:50–57, 3:7–20, 3:21–33, 7:23–32, 7:41–51, 8:59–9:15, 9:16–21, 9:52–58, 9:59–10:8, 11:32–37, 12:28–45, 12:64–65, 12:66–13:6, 13:7–17; Phillips at ¶¶ 0021, 0030, 0032, 0115, 0122, 0123, 0135, 0136, 0137, ¶¶ 0144–45, 0146–48, 0149–52; Kim882 at ¶¶ 0044, 0050, 0051, 0052, 0062, 0092, 0095, 0096, 0097, ¶¶ 0057–59; Li at Abstract, ¶¶ 26, 31, 78, 110, ¶¶ 0028–29, 0039–40; Ex. 348-Garcia-Molina at 1[b]; Savakis at 1:7–9, 2:5–22, 2:23–36, 2:37–44, 5:62–64, 2:45–55, 2:56–62, 5:66–6:10, 6:12–25, 6:32–51, 6:56–58, 6:60–7:9, 7:10–16, 9:22–37,

9:39–46, 9:48–54, 9:56–63, 14:66–15:16, 15:17–38, 15:39–52, 15:53–59; Koh at 6:6–15, 6:16–27, 6:28–39, 6:40–55, 11:19–26, 11:27–35, 11:36–51, 11:52–61, 13:1–14, 13:15–34, 13:35–45, 13:46–52, 1:61–2:4, 2:5–8, 2:41–47, 2:48–58, 9:36–51, 11:62–12:12, 12:13–16; Fredlund at ¶¶ 0037, 0038, 0054, 0059, 0060, 0061, 0065, 0074, 0099, ¶¶ 0063–64; Meguro at ¶¶ 20, 21, 22, 23, 42, 45, 47, 57; Nepomniachtchi at ¶¶ 97, 105, 296, 298, 299, 300, 350, 351, 0399, 0400, 0401, 0402, 0406, 0407, 0408, 0409, ¶¶ 0403–05; Ex. 348-Sony NEX-3 NEX-5 at 1[b]; Wu at Abstract, 3:47–57, 3:58–67, 4:43–58, 4:59–65, 6:20–33, 6:34–40, 6:41–53, 6:54–63, 7:16–30, 7:60–8:20; Ex. 348-Samsung WB700 at 1[b]; Takeuchi at ¶¶ 0087, 0089, 0112, 0113, 0114, 0115, 0116, 0117, 0118, 0119, 0120, 0121, 0122, 0123, 0124, 0125, 0126, 0127, 0128, 0129, 0130, 0133, 0134, 0135, 0136, 0137, 0138, 0141, 0142, 0143, 0146, 0147, 0148, 0149, 0156, 0288, 0291, ¶¶ 0108–09, 0110–11, 0131–32, 0139–40, 0144–45; Cooper at 1:41–46, 1:49–59, 2:52–59, 2:63–3:5, 3:6–19, 3:20–30, 3:31–42, 4:31–43, 4:47–53, 4:54–5:2, 5:3–12; Fukuda at ¶¶ 0055–56, 0090–91, 0103–04, 0106–07, ¶¶ 0064, 0066; Ex. 348-Nikon S630 at 1[b]; Ex. 348-Canon SX210 IS at 1[b]; Anon at Abstract, 1:14–17, 1:59–2:8, 2:9–15, 2:64–3:14, 3:15–26, 3:53–4:3, 4:4–23, 5:53–6:8, 6:32–41, 6:42–50, Claim 1; Pore at ¶¶ 0047, 0048, 0056, 0064, 0065, 0068, 0076, 0077, 0097, 0119, 0120, 0121, ¶¶ 0057–58, 0066–67, 0094–96; Parulski699 at ¶¶ 0096, 0098, 0101, 0102, 0185, 0186, 0195, 0196, 0197, 0200, 0201, 0202, 0203, 0229, 0230, 0231, ¶¶ 0225–26, 0227–28; Mori at ¶¶ 32, 33, 34, 40, 41, 72, 80, 81; Ex. 348-Sony A33 at 1[b]; Parulski177 at 11:3–18, 11:33–39, 11:59–12:7, 12:8–20, 27:61–28:2, 28:5–15, 28:16–30, 34:7–26; Ex. 348-Kodak Z990 at 1[b]; Staudacher238 at 2:1–6, 2:7–33, 2:34–55, 3:60–4:8, 4:9–24, 4:25–34, Abstract, Claims 13, 11; Kim397 at Abstract, ¶¶ 14, 39, 0044, ¶¶ 0024–25, 0032–33, 0035–36, 0042–43; Ex. 348-Sony TX55 at 1[b]; Lv at ¶¶ 0026, 0028, 0032, 0042, 0045, 0051, 0066, 0077.

The prior art references further describe “automatic image capturing, and storing in user-accessible memory, of at least one image only after a first logical criterion predefined on said multiple quality indicators, is satisfied.” *See, e.g.*, Joshi at 3:47–51, 3:52–4:5, 4:17–20, 4:35–49, 1:6–16, 2:50–57, 3:21–33; Phillips at ¶¶ 0065, 0012, 0112, 0115, 0083, 0080, 0105, 0142; Kim882 at ¶¶ 0090, 0102, 0105, 0106, 0107, 0050, 0051, 0052, 0100, 0101, ¶¶ 0103–04, 0057–60; Li at Abstract, ¶¶ 26, 31, 32, 62, 63, 78, 79, 90, 91, 92, 120; Ex. 348-Garcia-Molina at 1[c]; Savakis at 2:5–22, 2:23–36, 2:56–62, 12:29–39, 13:18–24, Claim 18; Koh at 1:61–2:4, 2:13–16, 2:19–30, 2:59–62, 3:1–12, 12:24–35, 14:38–46, 2:63–67; Fredlund at ¶¶ 0034, 0037, 0039, 0049, 0072, 0073, 0099; Meguro at ¶¶ 22, 24, 80, 88, 89, 95, 98, 99, 64, ¶¶ 0030–31; Nepomniachtchi at ¶¶ 108, 109, 110, 111, 30, 100, Claims 11, 19; Ex. 348-Sony NEX-3 NEX-5 at 1[c]; Wu at Abstract, 2:27–42, 2:49–55, 4:66–5:16, 5:17–32, 5:33–49, 7:60–8:20, 8:31–43, 8:44–63, 10:36–50, 18:20–31; Ex. 348-Samsung WB700 at 1[c]; Takeuchi at ¶¶ 0019, 0057, 0078, 0112, 0113, 0114, 0115, 0116, 0117, 0118, 0119, 0120, 0122, 0123, 0124, 0125, 0126, 0127, 0128, 0129, 0130, 0132, 0134, 0135, 0136, 0137, 0138, 0141, 0142, 0143, 0147, 0150, 131, 133, 121, 0156, 0159, 299, 300, 301, 252, 253, 221, ¶¶ 0110–11, 0139–40, 0144–45, 0151–52, 0108–09; Cooper at 2:52–59, 2:63–3:5, 3:6–12, 3:38–42, 4:1–16, 4:17–30, 1:33–39, 1:41–46, 1:22–30; Fukuda at ¶¶ 0014, 0016, 0101, 0130, 0138, 0144, ¶¶ 0019–20, 0021–22, 0111–12, 0113–14, 0128–29, 0131–32, 0139–40, 0141–42, 0145–46; Ex. 348-Nikon S630 at 1[c]; Ex. 348-Canon SX210 IS at 1[c]; Anon at Abstract, 1:59–2:8, 5:53–6:8, 6:9–15, 6:42–50, 9:35–55, 9:56–67, 10:8–20, Claim 1; Pore at ¶¶ 0018–19, ¶¶ 0021, 0049, 0050, 0034, 0037, 0111; Parulski699 at ¶¶ 0125, 0209, 0214, 0215, 0192, 0233, 0237, 0095; Mori at ¶¶ 35, 36, 39, 0045, 0046, 90, ¶¶ 0043–44; Ex. 348-Sony A33 at 1[c]; Parulski177 at 8:23–34, 7:57–67, 25:46–59, 28:16–30, 35:34–52, 35:53–65, 35:66–36:2; Ex. 348-Kodak Z990 at 1[c]; Staudacher238 at 3:24–36, 3:37–50, 5:23–42, 5:43–55, 5:56–6:12, 6:13–33, 6:34–47,

Abstract, 1:26–47; Kim397 at ¶¶ 28, 5, 14, 15, 39, 44, 6, 7, ¶¶ 0009–10, 0033–34, 0035–36; Ex. 348-Sony TX55 at 1[c]; Lv at ¶¶ 0007, 0010, 0031, 0044, 0045, 0046, 0047, 0048.

The prior art references further describe “a message provider operative, while said first logical criterion is still not satisfied, to select, based on at least one second logical criterion pre-defined on at least one of said multiple quality indicators, at least one appropriate suggestion from a pre-stored table of suggestions of how a user of the system may cause said first logical criterion to be satisfied and to present said appropriate suggestion to the user.” *See, e.g.*, Joshi at 1:6–16, 1:61–2:19, 3:34–41, 3:52–4:10, 12:28–45, 13:19–26; Phillips at ¶¶ 0141, 0162, ¶¶ 0144–45, 0146–48, 0149–52; Kim882 at ¶¶ 0069–70, 0085–86, 0012–13, ¶¶ 0071, 0072, 0077, 0084, 0088, 0089, 0014, 0024, 0102, 0010, 0011, 0015; Li at ¶¶ 107, 113, 39, 103, 109, 110, 26, 32; Ex. 348-Garcia-Molina at 1[d]; Savakis at 4:6–26, 4:44–63, 2:23–36, 2:45–55, 12:29–39, 13:18–33; Koh at Abstract, 1:53–60, 7:8–25, 7:26–37, 10:43–59, 10:60–11:13, 12:36–56; Fredlund at ¶¶ 0075, 0085, 0086, 0087, 0088, 0089, 0090, 0091, 0092, 0093, 0074, 0080, 0094; Meguro at ¶¶ 91, 92, 93, 94, 70, 71, 72, 73, 90, 42, 43, 44, 45, 57, 58, 59; Nepomniachtchi at ¶¶ 0028–29, ¶¶ 105, 188, 189, 205, 316, 399, 407; Ex. 348-Sony NEX-3 NEX-5 at 1[d]; Wu at Abstract, 2:27–42, 4:25–42, 4:43–58, 5:33–52, 5:53–61, 5:62–6:6, 6:20–33, 9:6–14, 9:15–30, 9:31–43, 10:20–35, 10:61–11:6, 11:7–16, 11:17–26; Ex. 348-Samsung WB700 at 1[d]; Takeuchi at ¶¶ 280, 281, 282, 283, 284, 285, 291, 292, 293, 294, 302, 303, 0141, 0142, 0143, 304, 100, ¶¶ 0144–45; Cooper at 1:22–25, 2:63–3:5, 3:6–12, 3:31–42, 4:31–37, 5:29–42; Fukuda at ¶¶ 0119–20, 0121–22, 0136–37, 0160–62, ¶ 0135; Ex. 348-Nikon S630 at 1[d]; Ex. 348-Canon SX210 IS at 1[d]; Anon at 1:59–2:8, 2:29–38, 3:27–42, 5:26–51, 6:42–50, 6:51–7:3, 7:4–14, 7:15–29, 7:30–41, 7:43–54, 7:55–63, 7:64–8:13; Pore at ¶¶ 0033, 0036, 0048, 0050, 0109, 0118, 0119, 0120, 0121, ¶¶ 0110–11; Parulski699 at ¶¶ 0185, 0186, 0187, 0188, 0189, 0190, 0191, 0203, 0204, 0205, 0206, 0232, 0233, 0234, 0179, 0182, 0183,

0134, 0135, 0136, 0150, ¶¶ 0180–81; Mori at ¶¶ 0072, 5, 6, 9, 10, 11, 0069, 0045, 0046, 48, ¶¶ 0073–74, 0070–71, 0043–44; Ex. 348-Sony A33 at 1[d]; Parulski177 at 17:18–33, 18:60–66, 27:25–32, 27:40–45, 22:63–23:11, 23:12–22, 23:33–45, 37:23–40, 2:42–47; Ex. 348-Kodak Z990 at 1[d]; Staudacher238 at 2:56–3:2, 3:3–8, 3:9–23, 3:37–50, 5:23–42, 5:43–55, 5:56–6:12, Abstract; Kim397 at ¶¶ 0032–34, 0040–43, 0024–25, 0026–27, 0009–10, 0012–13, 0036–37, 0038–39, ¶¶ 0035, 0028, 5, 6, 7, 0014, 0015; Ex. 348-Sony TX55 at 1[d]; Lv at ¶¶ 0031, 0032, 0044, 0046, 0078, 0082, 0008, ¶¶ 0009–10.

The prior art references further describe “wherein at least one of said logical criteria are pre-defined over a time-dependent confidence level defined over at least one of said quality indicators.” *See, e.g.*, Joshi at 8:5–13, 8:33–41, 8:59–9:15, 9:16–25, 11:62–12:10, 12:11–21, 2:20–29, 6:13–21; Phillips at ¶¶ 0022, 0023, 0024, 0025, 0026, 0032, 0114, 0115, 0116; Kim882 at ¶¶ 0090, 0102, 0103, 0100, 0101, 0006, 0007, 0016, ¶¶ 0093–94; Li at Abstract, ¶¶ 28, 31, 32, 0057, 92, 0102, 0103, 109, 110, 128, 130, 131, ¶¶ 0049–50, 0099–101; Ex. 348-Garcia-Molina at 1[e]; Savakis at 4:44–63, 5:30–38, 12:29–39, 12:40–63, 13:4–15, 2:5–22, 2:45–55, 3:58–4:5, 4:6–26; Koh at 12:24–35, 9:22–35, 9:36–46, 6:56–7:2, 7:26–37, 2:59–62, 2:13–16, 2:41–47; Fredlund at ¶¶ 0075, 0076, 0077, 0078, 0085, 0093, 0099, 0103; Meguro at ¶¶ 0041–42, ¶¶ 0043, 0044, 0045, 47, 48, 59, 60, 61, 62, 67, 68, 72, 73; Nepomniachtchi at ¶¶ 152, 153, 171, 409, 410, 425; Ex. 348-Sony NEX-3 NEX-5 at 1[e]; Wu at 4:25–42, 4:43–58, 4:59–65, 4:66–5:10, 5:17–32, 5:33–49, 7:60–8:20, 8:21–30, 8:31–43, 8:44–63, 10:15–19, 10:20–35, 10:36–50, 10:51–60, 10:61–11:6, 11:7–16, 11:17–26, 13:4–24, 14:38–41, 14:56–15:5, 15:6–23, 15:24–29; Ex. 348-Samsung WB700 at 1[e]; Takeuchi at ¶¶ 161, 162, 163, 166, 167, 168, 174, 175, 176, 177, 204, 205, 206, 207, 208, 209, 210, 214, 215, 216, 218, 219, 220, 0250, 0294, ¶¶ 0251–52; Cooper at 1:41–46, 3:31–42, 3:54–67, 4:1–2, 4:27–37; Fukuda at ¶¶ 0019–20, 0021–22, 0025–26, 0111–12, ¶¶ 0133,

0134; Ex. 348-Nikon S630 at 1[e]; Ex. 348-Canon SX210 IS at 1[e]; Anon at 8:32–35, 8:44–54, 3:53–4:3, 4:4–23, 3:15–26, 3:27–42, 7:55–63, 7:64–8:13; Pore at ¶¶ 0076, 0077, 0105, 0106, 0107, 0108, 0109, 0047, 0048, 0049, 0053, 0054, 0055, 0019, 0020, ¶¶ 0086–88, 0090–93, 0094–96, 0110–11, 0056–57, 0021–22; Parulski699 at ¶¶ 0222, 0223, 0186, 0187, 0201, 0202, 0203, 0226, 0227, 0205, 0206, 0218, 0219, 0220, 0221, 0213, 0214, 0215; Mori at ¶¶ 108, 32, 33, 54, 55, 94, 95, 100; Ex. 348-Sony A33 at 1[e]; Parulski177 at 14:22–45, 14:46–15:4, 15:5–11, 15:13–46, 29:49–55, 29:56–67, 30:1–8, 30:9–20, 30:44–49, 30:50–31:7, 31:8–17, 31:56–32:4, 32:5–17, 35:34–42, 36:10–20, 36:22–40, 36:41–56, 36:57–61, 36:62–37:5, 37:6–22, 37:23–40; Ex. 348-Kodak Z990 at 1[e]; Staudacher238 at 5:56–6:12, 6:13–33, Abstract, 2:1–6, 2:34–55, 3:37–50, 1:48–57, 5:43–55; Kim397 at ¶¶ 0035, 15, 0044, 7, ¶¶ 0036–38, 0032–34, 0042–43; Ex. 348-Sony TX55 at 1[e]; Lv at ¶¶ 0075, 0076, 0038, 0039, 0032, 0042.

Other examples of these concepts are cited in the attached charts for the above references. *See* Appendix A, Exhibits 348-Anon through 348-Wu. It would have been known and simple to take prior art for real time assessment of picture quality by comparison with similar objects, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving picture quality. *Id.*

Samsung is not aware of any secondary considerations supporting non-obviousness of the '348 Patent claims. To the extent SnapAid seeks to introduce any alleged secondary considerations in the future, Samsung reserves the right to respond at that time.

F. Invalidity Under Section 112

Samsung provides an identification of the limitations of the '348 Patent that are invalid based on indefiniteness under pre-AIA 35 U.S.C. § 112 ¶ 2, or enablement or written description under pre-AIA 35 U.S.C. § 112 ¶ 1. These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1–11, 13, 15–17 of the '348 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). For example, as applied in SnapAid’s Infringement Contentions, the terms “said logical criterion,” “acceptably low level of image capture component shake,” and “said logical criterion comprises a logical expression combining with at least one OR, several logical conditions...” are indefinite because they are not only subjective but also do not have a meaning that can be clearly determined from the patent, and thus fail to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1–11, 13, 15–17 of the '348 Patent are invalid under § 112 ¶ 1, because the specification as filed does not contain a sufficient written description supporting those claims. For example, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of SnapAid’s contentions. For example, Asserted Claims 1–11, 13, 15–17 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following reasons: the '348 Patent fails to provide an adequate written description of the phrases “a first logical criterion predefined on said multiple quality indicators,” “one second logical criterion predefined on at least one of said multiple quality indicators,” “wherein at least one of said logical criteria are pre-defined over a time-dependent confidence level defined over at least one of said quality indicators,” and “said logical criterion comprises a logical expression combining with at least one OR, several logical conditions...” as applied in SnapAid’s Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the '348 Patent. The subject matter of these claims, as described above, is not sufficiently shown in the specification of the '348 Patent. The subject matter of these claims, as described above, is not sufficiently enabled because the '348 patent specification does not teach one skilled in the art how to make and use the alleged invention. For example, the '348 Patent fails to enable the following and thus, Asserted Claims 1–11, 13, 15–17 of the '348 Patent are invalid: “a first logical criterion predefined on said multiple quality indicators,” “one second logical criterion pre-defined on at least one of said multiple quality indicators,” and “a time-dependent confidence level.” The foregoing phrases are not described in such a way that one of ordinary skill in the art could implement them to achieve the results sought by the individual named on the face of the '348 Patent as the inventor. The foregoing phrases are not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '348 Patent was in possession of the claimed subject matter. The Asserted Claims of the '348 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on SnapAid in accordance with the Court’s Scheduling Order.

G. Invalidity Under Section 101

The asserted claims of the '348 patent are invalid under *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208 (2014) because they are directed to patent-ineligible subject matter and fail to include an “inventive concept,” *i.e.*, some additional element or combination of elements “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” 573 U.S. 208, 217–18 (2014).

The asserted claims of the '348 patent are directed to a patent-ineligible concept—namely, the abstract idea of assessing picture quality and suggesting that the photographer take another picture after making an adjustment, such as to the photographer's location or angle. The claims are directed to a process that photographers conduct in their minds—assessing a picture's quality and then taking a new picture to try to get a better picture—which renders them abstract under Federal Circuit case law holding that “methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas—the ‘basic tools of scientific and technological work’ that are open to all.” *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)); *PersonalWeb Techs. LLC v. Google LLC*, 8 F.4th 1310, 1316 (Fed. Cir. 2021); *Longitude Licensing Ltd. v. Google LLC*, 2025 WL 1249136, at *2 (Fed. Cir. Apr. 30, 2025); *Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021); *Broadband iTV, Inc. v. Amazon.com, Inc.*, 113 F.4th 1359, 1371 (Fed. Cir. 2024); *USC IP P'ship, L.P. v. Meta Platforms, Inc.*, 2023 WL 5606977, at *2 (Fed. Cir. Aug. 30, 2023). This is further confirmed by the specification, which provides that the claimed inventions “utilize camera hardware ... to evaluate pictures taken in real time, and actively assist in obtaining the best picture given the circumstances at hand.” '348 Pat., 2:6-9.

The asserted claims of the '348 patent also lack any inventive concept and merely implement the abstract idea of taking a better picture using generic camera components—an “image capture component,” a “buffer,” and a “digital image processor.” '348 Pat., Cl. 1. The inventor of the '348 patent does not purport to have invented these components or described or claimed any specific improvement in their functionality. To the contrary, the specification confirms that these are conventional components. *See, e.g., '348 Pat.*, 6:12-16 (“Any suitable input device, such as but not limited to a sensor, may be used ...”), 6:18-19 (“Any suitable processor

may be employed to compute or generate information as described herein ...”). That these components are known and conventional is further demonstrated by their disclosure throughout the prior art disclosed in these contentions. Further, the dependent claims similarly recite additional generic limitations that fail to add any inventive concept, and are therefore patent-ineligible. *See In re Bd. of Trs. of Leland Stanford Junior Univ.*, 991 F.3d 1245, 1250 (Fed. Cir. 2021); *Braemar Mfg., LLC v. ScottCare Corp.*, 816 F. App’x 465, 470 (Fed. Cir. 2020); *In re TLI Commc’ns LLC Pat. Litig.*, 823 F.3d 607, 611 (Fed Cir. 2016). Accordingly, the asserted claims of the ’348 patent are patent-ineligible under § 101.

V. INVALIDITY CONTENTIONS FOR THE ’226 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the “References Cited” on the face of the ’226 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Samsung may rely upon that prior art, including the “References Cited” on the face of the ’226 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Samsung reserves the right to rely upon additional prior art, information, and/or knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

The claim charts attached in Appendix A as Exhibits 226-Aisaka through 226-Wu identify where each limitation of the Asserted Claims of the ’226 Patent is found in the prior art.

C. Identification of the Prior Art

Based on SnapAid’s Preliminary Infringement Contentions, Samsung identifies prior art below and in Appendix A as Exhibits 226-Aisaka through 226-Wu, which contain charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits 226-Aisaka through 226-Wu and below, Samsung has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Samsung notes that it has applied the prior art in accordance with SnapAid’s improper assertions of infringement and improper applications of the claims. Samsung does not agree with SnapAid’s application of the claims and denies infringement.

Samsung further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Samsung reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Samsung has also identified exemplary obviousness combinations further below.

'226 Patent Prior Art Patents / Patent Applications				
Ex. No.	Patent / Publication No.	Country of Origin	Filing Date	Date of Issue / Publication
Ex. 226-Aisaka	U.S. Patent Pub. No. 2010/0246939 A1 (“Aisaka”)	U.S.	Aug. 26, 2009	Sept. 30, 2010
Ex. 226-Alhadeh	U.S. Patent No. 8,009,198 (“Alhadeh”)	U.S.	Apr. 22, 2004	Aug. 30, 2011
Ex. 226-Anon	U.S. Patent No. 8,508,622 (“Anon”)	U.S.	Jan. 18, 2011	Aug. 13, 2013
Ex. 226-Chen	U.S. Patent No. 6,810,083 (“Chen”)	U.S.	Nov. 16, 2001	Oct. 26, 2004
Ex. 226-Fredlund	U.S. Patent Pub. No. 2011/0216209 A1 (“Fredlund”)	U.S.	Mar. 3, 2010	Sept. 8, 2011

Ex. 226-Fukuda	U.S. Patent Pub. No. 2010/0177207 A1 (“Fukuda”)	U.S.	Jan. 11, 2010	July 15, 2010
Ex. 226-Iwamoto	U.S. Patent No. 5,005,086 (“Iwamoto”)	U.S.	Mar. 2, 1989	Apr. 2, 1991
Ex. 226-Iwane	U.S. Patent No. 7,660,519 (“Iwane”)	U.S.	Aug. 28, 2006	Feb. 9, 2010
Ex. 226-Jasinski	U.S. Patent Pub. No. 2012/0201427 A1 (“Jasinski”)	U.S.	Feb. 4, 2011	Aug. 9, 2012
Ex. 226-Koh	U.S. Patent No. 7,973,848 (“Koh”)	U.S.	Mar. 31, 2008	July 5, 2011
Ex. 226-Lu	U.S. Patent No. 7,590,287 (“Lu”)	U.S.	Nov. 6, 2002	Sept. 15, 2009
Ex. 226-Lv	U.S. Patent Pub. No. 2013/0286161 A1 (“Lv”)	U.S.	Apr. 25, 2012	Oct. 31, 2013
Ex. 226-Marchesotti	U.S. Patent Pub. No. 2012/0269441 A1 (“Marchesotti”)	U.S.	Apr. 19, 2011	Oct. 25, 2012
Ex. 226-Meguro	U.S. Patent Pub. No. 2009/0251549 A1 (“Meguro”)	U.S.	Aug. 23, 2007	Oct. 8, 2009
Ex. 226-Nasiri	U.S. Patent Pub. No. 2010/0214216 A1 (“Nasiri”)	U.S.	May 18, 2010	Aug. 26, 2010
Ex. 226-Nepomniachtchi	U.S. Patent Pub. No. 2013/0085935 A1 (“Nepomniachtchi”)	U.S.	May 1, 2012	Apr. 4, 2013
Ex. 226-Obrador	U.S. Patent Pub. No. 2007/0283269 A1 (“Obrador”)	U.S.	May 31, 2006	Dec. 6, 2007
Ex. 226-Ohmiya	U.S. Patent Pub. No. 2010/0245604 A1 (“Ohmiya”)	U.S.	Dec. 2, 2008	Sept. 30, 2010
Ex. 226-Parulski177	U.S. Patent No. 6,539,177 (“Parulski177”)	U.S.	July 17, 2001	Mar. 25, 2003
Ex. 226-Phillips	U.S. Patent Pub. No. 2005/0226490 A1 (“Phillips”)	U.S.	Mar. 30, 2005	Oct. 13, 2005
Ex. 226-Pore	U.S. Patent Pub. No. 2009/0290037 A1 (“Pore”)	U.S.	May 22, 2008	Nov. 26, 2009
Ex. 226-Ramesh	U.S. Patent Pub. No. 2009/0296989 A1 (“Ramesh”)	U.S.	May 28, 2009	Feb. 28, 2006

Ex. 226-Savakis	U.S. Patent No. 6,671,405 ("Savakis")	U.S.	Dec. 14, 1999	Dec. 30, 2003
Ex. 226-Shah	U.S. Patent Pub. No. 2011/0205383 A1 ("Shah")	U.S.	Feb. 24, 2010	Aug. 25, 2011
Ex. 226-Steinberg	U.S. Patent No. 8,682,097 ("Steinberg")	U.S.	June 16, 2008	Mar. 25, 2014
Ex. 226-Takeuchi	U.S. Patent Pub. No. 2010/0149361 A1 ("Takeuchi")	U.S.	Oct. 14, 2009	June 17, 2010
Ex. 226-Wu	U.S. Patent No. 9,036,069 ("Wu")	U.S.	Sept. 12, 2012	May 19, 2015

'226 Patent Prior Art NPL References				
Ex. No.	Title	Date of Publication	Author	Publisher
Ex. 226-Liu	T. Liu, Image Quality Assessment Using Multi-Method Fusion ("Liu")	May 2013	T. Liu	IEEE Transactions on Image Processing

'226 Patent Prior Art Products/Systems		
Ex. No.	System/Product	Public Disclosure Date
Ex. 226-Canon EOS-1DX	Canon EOS-1DX Digital Camera	March 2012
Ex. 226-Canon SX210 IS	Canon Powershot SX210 IS Digital Camera	June 2010
Ex. 226-Kodak Z990	Kodak Easyshare Max Z990 Digital Camera	May 2011
Ex. 226-Nikon D3100	Nikon D3100 Digital Camera	August 2010
Ex. 226-Nikon D7000	Nikon D7000 Digital Camera	October 2010
Ex. 226-Nikon S630	Nikon Coolpix S630 Digital Camera	February 2009
Ex. 226-Pentax K-5	Pentax K-5 SLR Digital Camera	December 2010

Ex. 226-Samsung WB700	Samsung WB700 Digital Camera	December 2010
Ex. 226-Sony A33	Sony A33 Digital Camera	October 2010
Ex. 226-Sony NEX-3 NEX-5	Sony NEX-3/NEX-5 Digital Camera	May 2010
Ex. 226-Sony TX55	Sony DSC-TX55 Digital Camera	2011

'226 Patent Additional Prior Art/Background Art
U.S. Patent Pub. No. 2012/0105662 A1 (“Staudacher”)
U.S. Patent Pub. No. 2008/0013851 A1 (“Ishiwata”)
U.S. Patent No. 8,264,553 (“Joshi”)
U.S. Patent Pub. No. 2008/0192129 A1 (“Walker”)
U.S. Patent Pub. No. 2011/0150447 A1 (“Li”)
U.S. Patent Pub. No. 2011/0222724 A1 (“Yang”)
U.S. Patent Pub. No. 2012/0133746 A1 (“Bigioi”)
U.S. Patent Pub. No. 2013/0076856 A1 (“Wakabayashi”)
U.S. Patent No. 5,831,670 (“Suzuki”)
Garcia-Molina, H., Database Systems: The Complete Book (2d ed. 2009) (“Garcia-Molina”)
U.S. Patent Pub. No. 2002/0110286 A1 (“Cheatle”)
U.S. Patent Pub. No. 2004/0012682 A1 (“Kosaka”)

Discovery is ongoing, and Samsung reserves the right to amend its identification of prior art herein based on additional investigation and third-party discovery.

D. Anticipation

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’226 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by primary references as set forth below and in the attached claim charts. The prior art references or systems listed herein and in the accompanying claim charts may disclose the

elements of the Asserted Claims explicitly and/or inherently. To the extent SnapAid asserts that any of the prior art references charted in the attached exhibits fail to explicitly or inherently disclose any element of the Asserted Claims, Samsung contends it would have been obvious to modify such reference to include the allegedly missing element, in view of the knowledge of one of ordinary skill in the art, the admitted prior art of the Asserted Patents, and/or in combination with any of the other prior art references identified in the Exhibits for that respective patent.

E. Obviousness

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’226 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Samsung contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted ’226 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Samsung’s anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

One of the Following Primary References	In Combination with One or More of the Following References
Aisaka	Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3

	NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Alhadeef	Aisaka, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Anon	Aisaka, Alhadeef, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Canon EOS-1DX	Aisaka, Alhadeef, Anon, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Canon SX210 IS	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Chen	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Fredlund,

	Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Fredlund	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Fukuda	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Iwamoto	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Iwane	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri,

	Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Jasinski	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Kodak Z990	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Koh	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Liu	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya,

	Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Lu	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Lv	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Marchesotti	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Meguro	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3

	NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Nasiri	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Nepomniachtchi	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Nikon D3100	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Nikon D7000	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Nikon S630	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane,

	Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Obrador	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Ohmiya	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Parulski177	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Pentax K-5	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya,

	Parulski177, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Phillips	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Pore	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Ramesh	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Samsung WB700	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Savakis	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen,

	Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Shah	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Sony A33	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi, Wu
Sony NEX-3 NEX-5	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Steinberg, Takeuchi, Wu
Sony TX55	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya,

	Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Steinberg, Takeuchi, Wu
Steinberg	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Takeuchi, Wu
Takeuchi	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Wu
Wu	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Fukuda, Iwamoto, Iwane, Jasinski, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nasiri, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Obrador, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Steinberg, Takeuchi

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have understood that each of these references are in the same field of endeavor, namely real time assessment of picture quality. *See, e.g.*, Iwamoto at Abstract, 7:65–8:16, 8:45–61, 3:35–57, 9:12–30, 5:51–67; Ex. 226-Kodak Z990; Takeuchi at ¶¶ 176, 166, 0147, Abstract, ¶¶ 0006–07; Aisaka

at ¶¶ 0098, 371, 0257, ¶¶ 0272–73, 0369–70; Savakis at 5:30–61, 4:6–26, 2:45–55, Claims 18, 27; Shah at ¶¶ 0034, 0055, ¶¶ 0072–74, 0072–73, 0071–72; Ex. 226-Nikon D3100; Marchesotti at ¶¶ 0026, 0004, 0025, 0079; Ramesh at ¶¶ 24, 25; Iwane at 4:4–13, 1:53–2:3, 2:4–21, 13:17–31, 1:30–42; Ohmiya at ¶¶ 0114, 0113, 0105, 0125, 0097; Alhadeef at 14:16–30, 15:49–62, 1:49–59, 3:37–48, 14:49–63; Lu at 5:66–6:7, 6:22–36, 3:20–31, 3:4–14, Claim 1; Fredlund at ¶¶ 0048, 0069, 0073, 0064, ¶¶ 0063–64; Lv at ¶¶ 83, 46, 42, 27, 61; Ex. 226-Samsung WB700; Ex. 226-Canon EOS-1DX; Ex. 226-Pentax K-5; Pore Claim 2, ¶¶ 0037, 0047, Abstract, ¶¶ 0110–11; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Nepomniachtchi at ¶¶ 11, 296, 131, 116, Abstract; Chen at Abstract, 1:25–50, 4:6–20, 1:16–23, 4:21–51, 2:17–39; Nasiri at ¶¶ 206, 139, 120, 168, 138; Ex. 226-Sony A33; Koh at 5:52–6:5, 12:24–35, 4:8–19, 7:26–37, 4:13–24; Ex. 226-Sony NEX-3 NEX-5; Fukuda at ¶¶ 0141–42, 0126–27, ¶¶ 14, 127, 66; Meguro at ¶¶ 0021, 0006, 0058, 0032, Abstract; Ex. 226-Nikon S630; Phillips at ¶¶ 0012, 0080, 0119, 0036, ¶¶ 0091–93; Ex. 226-Nikon D7000; Anon Claim 1, 1:59–2:8, 5:26–51, Abstract, 7:55–63; Jasinski at ¶¶ 3, 14, 131, 80; Ex. 226-Liu; Parulski177 at Abstract, 30:50–31:7, 28:31–57, 29:56–67, 5:64–6:22, 28:16–30; Obrador at ¶¶ 3, 21, 19, 4, 22; Steinberg Claims 1, 15, 44, 54, 28:15–29; Ex. 226-Canon SX210 IS; Ex. 226-Sony TX55.

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, picture quality. *See, e.g.*, Iwamoto at 7:65–8:16, 3:35–57, 5:51–67, 7:40–58, 7:41–43; Ex. 226-Kodak Z990; Takeuchi at ¶¶ 176, 121, ¶¶ 0108–09, 0012–13, Abstract; Aisaka at ¶¶ 371, 0098, 55, ¶¶ 0369–70, 0134–35; Savakis at 5:30–61, 4:64–5:29, 4:44–63, Claim 18; Shah at ¶¶ 0034, 0055, 0093, 0056, ¶¶ 0072–74; Ex. 226-Nikon D3100; Marchesotti at ¶¶ 0026, 0004, 0079, 0048; Ramesh at ¶¶ 24, 0020, 25, Claim 9; Iwane at 4:4–13, 1:30–42, Abstract, 4:48–5:5, 5:35–51; Ohmiya at ¶¶ 0007, 0114, 0169, 0113, 0105; Alhadeef at

14:16–30, 14:49–63, 7:3–13, 15:7–22, 12:66–13:18; Lu at 5:66–6:7, 6:22–36, 3:4–14, 6:22–28, Claim 1; Fredlund at ¶¶ 0048, 0034, 0064, 0042, ¶¶ 0063–64; Lv at ¶¶ 83, 46, 42, 32, 45; Ex. 226-Samsung WB700; Ex. 226-Canon EOS-1DX; Ex. 226-Pentax K-5; Pore at ¶¶ 0037, 0047, 0048, Claim 2, Abstract; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Nepomniachtchi at ¶¶ 296, 11, 100, 184, 131; Chen at 1:25–50, 4:6–20, 3:52–4:3, 1:16–23, 4:21–51; Nasiri at ¶¶ 206, 139, 114, 138, 120; Ex. 226-Sony A33; Koh at 5:52–6:5, 4:8–19, 4:13–24, 1:25–30, 5:39–51; Ex. 226-Sony NEX-3 NEX-5; Fukuda at ¶¶ 0141–42, 0055–56, 0052–53, ¶¶ 14, 66; Meguro at ¶¶ 0021, 0006, 0071, 0064, Abstract; Ex. 226-Nikon S630; Phillips at ¶¶ 0012, 0094, 0032, 0008, ¶¶ 0091–93; Ex. 226-Nikon D7000; Anon Claim 1, 1:59–2:8, 5:26–51, Abstract, 2:9–15; Jasinski at ¶¶ 14, 3, 80, Claim 1; Ex. 226-Liu; Parulski177 at 28:31–57, 5:64–6:22, 30:50–31:7, 28:16–30, 34:7–26; Obrador at ¶¶ 3, 21, 4, Claim 10, Abstract; Steinberg Claims 1, 15, 44, 54, 11:29–48; Ex. 226-Canon SX210 IS; Ex. 226-Sony TX55.

Further, the Asserted Claims of the '226 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—*i.e.*, the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe “[a] method for real-time estimating of an image quality, for use with a device that comprises in a single enclosure a digital camera module or functionality that comprises an optical lens for focusing received light from a scene and an image sensor coupled to the optical lens for capturing an image of the scene; a motion or location sensor for sensing the device motion; and a processor coupled to the image sensor and to the digital camera for receiving data therefrom, the method by the processor.” *See, e.g.*, Iwamoto at 4:31–45, 4:46–51, 5:5–13, 5:17–23, 1:32–48, 1:11–17; Ex. 226-Kodak Z990 at 1[pre]; Takeuchi at ¶¶ 102, 103, 0107, 105, 106, 304, 305, 7, 302, ¶¶ 0108–09; Aisaka at ¶¶ 55, 57, 58,

369, 56, 61, 65, 68; Savakis at 4:44–63, 4:64–5:8, 2:56–62, 1:7–9, 15:53–59, 2:45–55, 15:39–52; Shah at ¶¶ 0030, 0038, 0039, 0041, 0042, 0044, 0052, 0053, 0055, 0056, 0059; Ex. 226-Nikon D3100 at 1[pre]; Marchesotti at ¶¶ 0024, 0031, 0035, 0112, 0002; Ramesh Claim 9, ¶¶ 21, 24, 25, 28, 30; Iwane at 1:24–26, 1:53–2:3, 2:57–59, 2:61–3:3, 3:40–50, 3:51–60, 4:4–13; Ohmiya at ¶¶ 0001, 0007, 0011, 0072, 0075, ¶¶ 0073–74, Claim 11; Alhadeef at 3:10–11, 3:14–15, 3:22–30, 3:53–64, 3:65–4:3, 4:4–12, 4:14–22, 4:23–31, 4:33–44, 4:45–55, 4:56–67, 5:1, 5:4–14, 7:44–57, 9:59–64, 9:65–10:3, 10:4–14; Lu at 1:8–17, 2:62–3:3, 5:17–19, 5:59–65, 5:66–6:7, 6:8–21, 6:22–28, 6:32–46, 11:5, 13:13–15; Fredlund at ¶¶ 0034, 0035, 0036, 0037, 0038, 0045, 0047, 0081; Lv at ¶¶ 2, 6, 26, 29, 35, 50, 77, 80, 81, 82, 83; Ex. 226-Samsung WB700 at 1[pre]; Ex. 226-Canon EOS-1DX at 1[pre]; Ex. 226-Pentax K-5 at 1[pre]; Pore at ¶¶ 0024, 0026, 0027, 0028, 0029, 0031, 0033, 0037; Wu at Abstract, 2:56–3:5, 3:17–21, 4:9–11, 7:60–8:20, 8:31–43, Claims 10, 15; Nepomniachtchi at ¶¶ 95, 96, 110, 111, 131, 174, 182, 452; Chen at 1:9–13, 3:52–4:3, 1:54–57, 1:58–2:3, 2:17–39, Claims 14, 25; Nasiri at ¶¶ 51, 52, 53, 62, 118, 1, 54, Abstract; Ex. 226-Sony A33 at 1[pre]; Koh at 4:8–12, 4:36–37, 5:36–38, 5:46–51, 5:52–6:5, 5:11–19, 6:9–15, 1:25–30; Ex. 226-Sony NEX-3 NEX-5 at 1[pre]; Fukuda at ¶¶ 0051, 61, 64, ¶¶ 0052–53, 0054–55, 0058–59; Meguro at Abstract, ¶¶ 0006, 0019, 0020, 0021, 0022, 0023, 0047, 0112, 0113; Ex. 226-Nikon S630 at 1[pre]; Phillips at ¶¶ 0125, 0138, 0139, 0065, 0021, ¶¶ 0142–43, 0146–48, 0149–52; Ex. 226-Nikon D7000 at 1[pre]; Anon at Abstract, 2:55–59, 2:64–3:14, 3:15–26, 3:53–4:3, 4:24–33, 5:53–6:8, 7:4–14, 10:27–46; Jasinski at ¶¶ 3, 51, 52, 53, 54, 56, 10; Ex. 226-Liu at 1[pre]; Parulski177 at 1:26–36, 5:50–63, 1:38–51, 5:64–6:22, 16:14–21, 16:23–36, 10:57–64, 10:65–11:2, 11:3–11, 11:3–18, 37:53–60, 37:61–38:14, 43:6–22, 43:24–37, 44:27–54; Obrador at Abstract, ¶¶ 3, 12, 14, 15, 18, 19, 21; Steinberg at 6:59–7:3, 8:33–60, 9:7–21, 29:22–34, 20:66–21:16, 10:32–41, 10:42–54, 26:60–67; Ex. 226-Canon SX210 IS at 1[pre]; Ex. 226-Sony TX55 at 1[pre].

The prior art references further describe “[o]btaining a first value (QI1) responsive to the device motion from the motion or location sensor.” *See, e.g.*, Iwamoto at 2:15–25, 2:15–35, 5:24–39, 2:36–47, 5:40–50, 2:48–58, 5:51–67, 2:59–65, 6:1–18, 1:49–65; Ex. 226-Kodak Z990 at 1[a]; Takeuchi at ¶¶ 108, 111, 113, 161, 162, 163, 166, 172; Aisaka at ¶¶ 55, 59, 61, 0188, 105, 106, 107, 111, ¶¶ 0184–85, 0186–87, 0189–90; Shah at ¶¶ 0038, 0044, 0059, 0035, 0052, 0055, ¶¶ 0036–37; Ex. 226-Nikon D3100 at 1[a]; Marchesotti at ¶¶ 0024, 0031, 0035, 0112, 0015, 0039; Ramesh at ¶¶ 4, 24, 25, 29, 30, 31; Iwane at 3:40–50, 3:51–65, 3:66–4:3, 4:4–13, 4:14–26, 4:27–38; Ohmiya at ¶¶ 0072, 0075, 0085, 0007, 0169, 0170; Alhadeif at 3:53–64, 3:65–4:3, 4:4–12, 4:14–16, 4:52–67, 5:1, 5:4–14, 7:38–52, 7:53–62, 7:63–8:14, 8:15–31, 9:14–23, 9:28–39, 9:40–50, 9:51–64, 9:65–10:3, 10:4–11, 10:12–21, 1:27–30, 1:34–45, 1:49–59; Lu at 7:44–54, 8:1–2, 3:32–42, 3:43–52, 7:20–27; Fredlund at ¶¶ 0080, 0047, 0052, 0053, 0071, 0078; Lv at ¶¶ 26, 27, 32, 42, 44, 47, 50, 79; Ex. 226-Samsung WB700 at 1[a]; Ex. 226-Canon EOS-1DX at 1[a]; Ex. 226-Pentax K-5 at 1[a]; Wu at 6:34–40, 7:60–8:20, 8:21–30, Abstract, 2:43–48, 3:6–16, 3:58–67, 13:4–24; Nepomniachtchi at ¶¶ 109, 331, 332, 205, 206, 190, 310, 311, 333, 0022, 110, ¶¶ 0023–25; Chen at 3:52–4:3, 1:54–57, 1:58–2:3, 2:4–16, 4:21–51; Nasiri at ¶¶ 51, 63, 64, 66, 67, 68, 62, Abstract, Claim 18; Ex. 226-Sony A33 at 1[a]; Koh at 5:11–26, 5:46–51, 6:16–22, 6:34–39, 9:57–10:11, 10:60–11:13, 11:36–41; Ex. 226-Sony NEX-3 NEX-5 at 1[a]; Fukuda at ¶¶ 0052–53, 0058–59, ¶¶ 64, 66, 93, 97; Meguro at ¶¶ 0023, 0047, 0057, 0058, 0059, 0060, 0061, 0111; Ex. 226-Nikon S630 at 1[a]; Phillips at ¶¶ 0134, 0135, 0136, 0137, 0138, 0139, 0152, ¶¶ 0163–65, 0166–67, 0168–70; Ex. 226-Nikon D7000 at 1[a]; Anon at 3:53–4:3, 4:24–33, 4:34–41, 4:56–5:13, 7:4–14, 7:15–29, 8:15–31, 8:65–9:25, 10:27–46; Jasinski at ¶¶ 7, 8, 10, 11, 12, 128; Ex. 226-Liu at 1[a]; Parulski177 at 35:34–52, 36:3–9, 31:8–17, 31:18–34, 31:35–55, 30:9–20, 15:54–62, 29:20–32; Obrador at ¶¶ 18, 19, 20, 21, 22, 23, 32, 33, 34; Steinberg at 26:60–67, 25:66–26:8, 26:23–33,

28:15–29, 23:58–24:9, 26:46–51, 27:36–41, 28:8–14; Ex. 226-Canon SX210 IS at 1[a]; Ex. 226-Sony TX55 at 1[a].

The prior art references further describe “estimating a first weight (c1) associated with the first.” *See, e.g.*, Iwamoto at 5:40–50, 6:52–66, 6:67–7:9, 7:40–58, 7:59–64; Ex. 226-Kodak Z990 at 1[b]; Takeuchi at ¶¶ 26, 27, 32, 125, 132, 141, 148, 253; Aisaka at ¶¶ 114, 115, 116, 0098, 0099, 283, 284, 286, 287, 290, 291, 0300, 0301, ¶¶ 0096–97, 0298–99; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:18–24, 13:35–40, 13:43–45, 13:47–54, 14:6–17, 2:45–55, 4:44–63; Shah at ¶¶ 0028, 0035, 0040, 0065, 0086, ¶¶ 0072–74; Ex. 226-Nikon D3100 at 1[b]; Marchesotti at ¶¶ 0096–97, 0098–99, ¶¶ 0100, 0101, 0080, 0042; Ramesh at ¶¶ 24, 30, 41, 6, 34, 39, Claim 10; Iwane at 4:48–5:5; Ohmiya at ¶¶ 0163, 0080, 0081, 0076, 0100, 0086, 0087; Alhadeif at 14:46–53, 12:45–46, 12:51–56, 12:66–13:18; Lu at 4:50–53, 3:66–4:3, 4:13–19, 10:54–57; Fredlund at ¶¶ 0058, 0059, 0061, 0067, 0068, ¶¶ 0063–64; Lv at ¶¶ 42, 44, 45, 46, 32, 28, 43; Ex. 226-Samsung WB700 at 1[b]; Ex. 226-Canon EOS-1DX at 1[b]; Ex. 226-Pentax K-5 at 1[b]; Pore Claims 10, 4, 20, ¶¶ 0048, 0109, 0051, 0052, 0053, 0021, 0054, ¶¶ 0110–11; Wu at 13:4–24, 13:25–38, 14:4–21, 14:22–26, 15:39–48, 13:39–44, 5:53–61, 13:56–14:3, 5:33–52, 4:43–58, 4:59–65; Nepomniachtchi at ¶¶ 116, 117, 118, 310, 312, 313, 349, 409; Chen at 8:17–39, 6:53–54, 8:52–61, 7:30–33, 9:50–51, 1:58–2:3, 1:54–57, 2:4–16; Nasiri at ¶¶ 69, 72, 73, 75, 76, 77, 78, 79, Claim 18; Ex. 226-Sony A33 at 1[b]; Koh at 6:9–15, 9:36–51, 9:57–10:11, 10:12–32, 11:62–12:12, 12:36–56; Ex. 226-Sony NEX-3 NEX-5 at 1[b]; Fukuda at ¶¶ 91, 92, 100, 112, 114, 125, 0149, ¶¶ 0138–39, 0150–51; Meguro at ¶¶ 0061, 0045, 0054, 0107, 0060, 0098, 0082, 0083, 0065, 0066; Ex. 226-Nikon S630 at 1[b]; Phillips at ¶¶ 0023, 0026, 0030, 0032, 0024, 0029, 0022, 0025; Ex. 226-Nikon D7000 at 1[b]; Anon at 1:59–2:8, 5:26–51, 8:32–35, 3:53–4:3, 4:4–23, 4:24–33, 2:9–15, 2:16–28, 8:15–31, 9:26–34; Jasinski at ¶¶ 0031, 0114, 0119, 0120, 0121, 0122, 128, 129, 130,

131, 28, 30, 94; Ex. 226-Liu at 1[b]; Parulski177 at 14:48–15:4, 25:22–35, 24:50–63, 24:64–25:13, 25:14–21, 24:13–28, 24:30–35, 24:36–49, 15:5–11, 15:13–46; Obrador at ¶¶ 33, 34, 35, 37, 21; Steinberg at 27:58–28:7, 28:8–14, 23:58–24:9, 24:10–29, 27:36–41, 27:42–57, 24:30–35; Ex. 226-Canon SX210 IS at 1[b]; Ex. 226-Sony TX55 at 1[b].

The prior art references further describe “obtaining a second value (QI2) associated with the digital camera.” *See, e.g.*, Iwamoto at 5:5–16, 6:1–18, 6:19–51, 5:17–23, 5:40–50, 1:38–48, 1:11–31; Ex. 226-Kodak Z990 at 1[c]; Takeuchi at ¶¶ 108, 137, 171, 172, 176, 181, 182, 183, 143, 144, 132, 133, 134, ¶¶ 0111–12; Aisaka at ¶¶ 112, 114, 0136, 138, 139, 140, 166, 167, 0188, 190, 262, ¶¶ 0134–35, 0184–85, 0186–87; Savakis at 4:44–63, 4:64–5:29, 5:30–38, 5:66–6:10, 6:56–58, 6:60–7:9, 7:10–16, 7:19–25; Shah at ¶¶ 0055, 0056, 0059, 0065, 0070, 0034, 0035, ¶¶ 0072–73; Ex. 226-Nikon D3100 at 1[c]; Marchesotti at ¶¶ 0025, 0030, 0040, 0041, 0059, 0080, 0081, ¶¶ 0055–58; Ramesh at ¶¶ 20, 24, 25, 28, 29, 30, 33, 34, 39, 40; Iwane at 3:40–50, 5:8–23, 5:35–51, 5:58–63, 5:64–6:8, 6:9–14, 6:15–29, 6:30–34; Ohmiya at ¶¶ 0074, 0075, 0079, 0087, 0102, 0106, 0111, 0112, 0113, 0114, ¶¶ 0109–10; Alhadeif at 13:56–61, 14:28–30, 14:46–55, 7:53–57, 15:37–41, 1:34–45, 4:45–51, 12:18–19; Lu at 5:61–65, 5:66–6:7, 6:8–21, 6:22–36, 6:66–7:2, 7:16–27, 7:32–42, 7:44–52, 3:32–42, 3:58–65, 10:54–57, 11:8–10, 11:30–32, 2:25–30; Fredlund at ¶¶ 0069, 0045, 0061, 0064, 0067, 0068, 0075; Lv at ¶¶ 32, 35, 45, 51, 53, 54, 61, 12; Ex. 226-Samsung WB700 at 1[c]; Ex. 226-Canon EOS-1DX at 1[c]; Ex. 226-Pentax K-5 at 1[c]; Pore at ¶¶ 0019, 0021, 0044, 0045, 0046, 0047, 0048, 0058; Wu at 2:27–42, 2:43–48, 2:56–3:5, 3:6–16, 7:60–8:20, 8:21–30, 13:4–24, 13:39–44, 15:6–23; Nepomniachtchi at ¶¶ 95, 96, 174, 321, 402, 452; Chen at 3:52–4:3, 1:54–57, 4:52–62, 1:58–2:3, 4:63–5:3, 2:4–16, 5:7–36, 7:57–8:7, 9:52–10:9, 1:9–13, 1:25–50; Nasiri at ¶¶ 53, 62, 118, 169, 170, 188, 124, 125, 114, 115, 120, 121; Ex. 226-Sony A33 at 1[c]; Koh at 5:39–51, 5:52–6:5, 4:8–19, 4:44–52, 1:25–30; Ex. 226-Sony NEX-3 NEX-5 at 1[c];

Fukuda at ¶¶ 55, 61, 0066, 0091, 0092, ¶¶ 0058–59, 0064–65, 0087–88, 0089–90, 0106–07; Meguro at ¶¶ 0006, 0019, 0031, 0032, 0033, 0043, 0044, 0047, 0048, 0050, 0051, 0052, 0053, 0061, 0072, ¶¶ 0041–42; Ex. 226-Nikon S630 at 1[c]; Phillips at ¶¶ 0065, 0015, 0016, 0021, 0138, 0139, 0142, 0066; Ex. 226-Nikon D7000 at 1[c]; Anon at 3:53–4:3, 4:24–33, 7:4–14, 7:43–54, 8:15–31, 8:36–43, 9:64–67, 1:41–49; Jasinski at ¶¶ 3, 83, 84, 86, 88, 89, 90, 91; Ex. 226-Liu at 1[c]; Parulski177 at 44:27–54, 27:4–13, 27:14–24, 33:40–52, 33:53–34:6, 15:54–62, 25:22–35, 25:37–44, 25:46–59, 44:55–58; Obrador at ¶¶ 21, 22, 0033, 3, 4, 18, ¶¶ 0024–26, 0031–32, 0008–11; Steinberg at 24:10–29, 39:47–57, 13:55–14:4, 14:5–7, 22:28–53, 11:29–48, 11:49–53, 23:58–24:9, Claim 54; Ex. 226-Canon SX210 IS at 1[c]; Ex. 226-Sony TX55 at 1[c].

The prior art references further describe “estimating a second weight (c2) associated with the second value.” *See, e.g.*, Iwamoto at 5:40–50, 3:58–60, 7:18, 3:64–4:3, 7:40–58; Ex. 226-Kodak Z990 at 1[d]; Takeuchi at ¶¶ 148, 149, 132, 141, 299, 140, 126, 127, ¶¶ 0251–52; Aisaka at ¶¶ 141, 0115, 119, 120, 268, 332, 333, 290, 291, 326, 327, 328, ¶¶ 0169–70, 0116–17; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:18–24, 13:35–40, 13:43–45, 13:47–54; Shah at ¶¶ 0028, 0069, 0086, 0094, 0103, ¶¶ 0072–74; Ex. 226-Nikon D3100 at 1[d]; Marchesotti at ¶¶ 0099, 0100, 0101, 0102, 0104, 0023, 0042, 0068, 0071, 0080, 0081, ¶¶ 0105–06, 0069–70; Ramesh at ¶¶ 30, 41, 51, 52, 39, 40, 34, Claim 10; Iwane at 4:48–5:5, 5:8–23, 13:54–67, 2:4–21; Ohmiya at ¶¶ 0163, 0007, 0008, 0004, 0093, 0094, 0095, ¶¶ 0091–92; Alhadeif at 12:51–56, 9:35–43, 8:59–62, 14:16–30, 14:46–48, 9:59–64, 9:65–10:3, 10:4–14; Lu at 4:50–53, 6:22–31, 6:32–42, 3:32–42, 3:66–4:3; Fredlund at ¶¶ 0081, 0078, 0079, 0067, 0068, 0059, 0061, 0064; Lv at ¶¶ 0069, 0072, 75, 76, 77, 78, 79, 80, 83, 84, 85, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, ¶¶ 0070–71; Ex. 226-Samsung WB700 at 1[d]; Ex. 226-Canon EOS-1DX at 1[d]; Ex. 226-Pentax K-5 at 1[d]; Pore at ¶¶ 0048, 0109, 0110, 0007, 0019, 0021, ¶¶ 0111–14; Wu at 13:39–44, 14:4–21, 12:40–61, 11:7–16, 13:56–

14:3, 14:22–26, 5:53–61, 10:51–60, 10:61–11:6; Nepomniachtchi at ¶¶ 125, 175, 176, 177, 178, 195, 201, 299, 300, 301; Chen at 1:58–2:3, 2:4–16, 2:17–39, Claim 1; Nasiri at ¶¶ 65, 69, 72, 73, 74, 75, 76, 185, 186, 215; Ex. 226-Sony A33 at 1[d]; Koh at 7:3–12, 7:13–25, 11:62–12:12, 12:36–56, 2:41–47, 13:46–52, 13:56–67; Ex. 226-Sony NEX-3 NEX-5 at 1[d]; Fukuda at ¶¶ 85, 0092, 0165, ¶¶ 0090–91, 0100–01, 0102–04, 0106–07, 0108–09, 0110–12, 0113–14, 0019–20, 0021–23, 0163–64; Meguro at ¶¶ 0061, 0098, 0101, 0102, 0103, 0044, 0045, 0067; Ex. 226-Nikon S630 at 1[d]; Phillips at ¶¶ 0023, 0029, 0030, 0032, 0033, 0024, 0026, 0031; Ex. 226-Nikon D7000 at 1[d]; Anon at 8:32–35, 3:53–4:3, 4:4–12, 4:24–33, 4:42–51, 5:26–51, 8:15–31, 4:4–23; Jasinski at ¶¶ 120, 126, 122, 123, 124, 28, Abstract; Ex. 226-Liu at 1[d]; Parulski177 at 25:22–35, 31:18–34, 31:35–55, 36:22–40, 36:41–56, 36:57–61, 33:40–52, 33:53–34:6; Obrador at ¶¶ 33, 34, 35, 37, 21; Steinberg at 7:48–62, 11:29–48, 12:41–48, 14:5–7, 14:53–63, 17:34–48, 24:10–29, 25:52–58; Ex. 226-Canon SX210 IS at 1[d]; Ex. 226-Sony TX55 at 1[d].

The prior art references further describe “analyzing the captured image for detecting or recognizing one or more objects in, or one or more characteristics of, the image.” *See, e.g.*, Iwamoto at 4:46–51, 5:5–16, 6:1–18, 6:19–51, 7:65–8:16, 4:66–5:4, 1:49–65; Ex. 226-Kodak Z990 at 1[e]; Takeuchi at ¶¶ 134, 135, 139, 141, 142, 143, 144, 0113, 119, 120, 121, ¶¶ 0111–12, 0195–96; Aisaka at ¶¶ 58, 61, 62, 63, 0181, 0179, 109, 110, 111, 267, 268, ¶¶ 0182–83, 0177–78; Savakis at 15:53–59, 8:21–28, 8:29–60, 8:61–9:5, 9:6–18, 9:22–37, 9:39–46, 9:48–54, 9:65–10:28, 10:29–41, 10:42–51, 10:52–11:7, 11:8–17, 2:23–36, 8:13–19, Claim 38; Shah at ¶¶ 0035, 0101, 0102, 0003, 0008, ¶¶ 0036–37, Abstract; Ex. 226-Nikon D3100 at 1[e]; Marchesotti at ¶¶ 0027, 0040, 0049, 0067, 0082; Ramesh at Abstract, ¶¶ 4, 5, 6, 28, 29, 30, 0043, 0046, ¶¶ 0041–42, 0047–48; Iwane at 4:48–5:5, 5:8–23, 5:24–34, 1:16–23, 1:53–2:3; Ohmiya at ¶¶ 0079, 0080, 0104, 0105, 0112, 0113, ¶¶ 0109–10; Alhadeif at 12:45–56, 12:57–65, 12:66–13:18, 13:19–25,

13:26–41, 13:42–47, 2:36–50, 3:7–15, 3:16–30, 13:48–61, 1:25–30, 1:34–45, 15:1–12, 15:37–48, 9:42–45; Lu at 3:32–42, 3:58–65, 7:20–27, 7:29–31, 9:57–62, 9:64–67, 10:2–5, 10:7–15, 10:18–20, 10:22–24, 10:36–42, 10:44–53, 7:44–54, 9:46–51, 9:53–56; Fredlund at ¶¶ 0065, 0066, 0071, 0074, 0075, 0100, 0024, 0026; Lv at ¶¶ 25, 26, 27, 28, 32, 33, 34, 35, 36, 42, 43, 44, 45, 50, 51, 79, 83; Ex. 226-Samsung WB700 at 1[e]; Ex. 226-Canon EOS-1DX at 1[e]; Ex. 226-Pentax K-5 at 1[e]; Pore at ¶¶ 0047, 0054, 0055, 0056, 0064, 0065, 0068, 0076, 0077, ¶¶ 0066–67, 0080–81, 0083–84, 0086–88, 0090–91, 0097–98; Wu at Abstract, 4:25–42, 4:43–58, 5:53–61, 5:62–6:6, 6:54–63, 6:64–7:5, 7:6–15, 7:16–30, 7:31–46, 7:47–59, 11:54–67, 12:1–13, 12:14–27, 13:25–38; Nepomniachtchi at ¶¶ 122, 124, 425, 428, 170, 183, 199, 200, 201; Chen at 1:9–13, 1:16–23, 1:25–50, 1:54–57, 1:58–2:3, 2:4–16, 3:35–51, 5:7–26; Nasiri at ¶¶ 118, 119, 120, 122, 0147, 0148, 0149, 0150, 188, 189, 221, 222, 223, ¶¶ 0151–52; Ex. 226-Sony A33 at 1[e]; Koh at Abstract, 6:16–27, 6:28–39, 6:40–55, 11:52–61, 11:62–12:12, 7:38–41, 8:56–9:9, 9:10–21; Ex. 226-Sony NEX-3 NEX-5 at 1[e]; Fukuda at ¶¶ 0087–88, 0023–24, ¶¶ 0089, 91, 125, 128; Meguro at ¶¶ 0041–42, ¶¶ 0043, 0044, 0045, 0047, 0022, 0023, 0098, 0099, 0090, 0091, 0092, 0093; Ex. 226-Nikon S630 at 1[e]; Phillips at ¶¶ 0015, 0017, 0022, 0024, 0032, 0039, 0043; Ex. 226-Nikon D7000 at 1[e]; Anon at 3:53–4:3, 7:4–14, 7:43–54, 8:65–9:25, 8:15–31, 8:32–35, 1:41–49, Claim 5; Jasinski at ¶¶ 86, 92, 0112, 0113, 115, 117, ¶¶ 0110–11; Ex. 226-Liu at 1[e]; Parulski177 at 17:34–56, 17:57–18:18, 18:20–24, 23:33–51, 24:5–10, 29:49–55, 30:9–20, 36:22–40, 36:41–56; Obrador at ¶¶ 0021, 0022, 0023, 31, 3, ¶¶ 0024–26; Steinberg at 6:33–46, 8:61–9:6, 11:29–48, 11:57–12:5, 12:19–27, 12:41–48, 24:45–67, 39:58–65; Ex. 226-Canon SX210 IS at 1[e]; Ex. 226-Sony TX55 at 1[e].

The prior art references further describe “obtaining a third value (QI3) associated with the analysis.” *See, e.g.*, Iwamoto at 5:5–13, 5:17–23, 6:1–18, 6:19–48, 7:44–58, 8:17–28, 8:29–44, 8:62–9:6; Ex. 226-Kodak Z990 at 1[f]; Takeuchi at ¶¶ 119, 120, 121, 0129, 0130, 0133, 0134,

0135, 0136, 0141, 0142, 0143, 0146, 0147, 165, 166, 167, 168, 169, 171, 172, ¶¶ 0131–32, 0139–40, 0144–45; Aisaka at ¶¶ 111, 129, 130, 104, 105, 238, 239, 240, 0244, 0245, 0248, 0249, ¶¶ 0242–43, 0250–51; Savakis at 4:64–5:29, 5:62–64, 6:56–58, 6:60–7:9, 7:10–16, 8:13–19, 8:21–28, 8:29–60, 8:61–9:5, 9:6–20, 9:22–37, 9:39–46, 9:48–54; Shah at ¶¶ 0068, 0069, 0070, 0035, 0036, 0086, 0087, 0091, 0003, 0004, 0008, ¶¶ 0071–72, 0073–74, 0036–37, 0088–89, 0001–02, Abstract; Ex. 226-Nikon D3100 at 1[f]; Marchesotti at ¶¶ 0028, 0030, 0059, 0066, 0078, 0080, 0102, ¶¶ 0055–58, 0068–69, 0076–77; Ramesh at Abstract, ¶¶ 4, 5, 6, 28, 29, 30, 39; Iwane at 4:48–5:5, 5:8–23, 5:24–34, 8:27–39, 8:40–53, 9:65–10:2, 11:51–61, 11:62–12:5, 12:6–12; Ohmiya at ¶¶ 0086, 0087, 0088, 0103, 0104, 0079, 0080, 0124, 0125, 0126, ¶¶ 0101–02, 0081–82; Alhadeef at 12:45–56, 12:57–65, 12:66–13:18, 13:19–25, 13:26–41, 13:49–61, 14:27–30, 14:46–55, 1:25–30, 7:44–57, 4:28–31, 4:33–40; Lu at 9:38–44, 10:7–15, 10:18–20, 10:36–42, 10:44–57; Fredlund at ¶¶ 0099, 0100, 0074, 0075, 0080, 0083, 0084, 0085; Lv at ¶¶ 42, 45, 46, 51, 35, 36, 28, 26; Ex. 226-Samsung WB700 at 1[f]; Ex. 226-Canon EOS-1DX at 1[f]; Ex. 226-Pentax K-5 at 1[f]; Pore at ¶¶ 0047, 0048, 0053, 0054, 0056, 0064, 0065, 0068, ¶¶ 0057–58, 0066–67, 0097–98; Wu at 4:43–58, 4:59–65, 10:15–19, 10:20–35, 10:61–11:6, 11:7–16, 13:39–44, 13:56–14:3, 14:4–21; Nepomniachtchi at ¶¶ 11, 154, 190, 0349, 205, 0022, 399, 409, ¶¶ 0346–48, 0023–25; Chen at 7:57–8:7, 6:53–54, 8:52–61, 7:30–33, 9:50–51, 1:54–57, 1:58–2:3, Claim 1; Nasiri at ¶¶ 69, 72, 73, 106, 107, 114, 115, 116, 117, 118, 144, 145, 146, 147, 0201, ¶¶ 0202–03; Ex. 226-Sony A33 at 1[f]; Koh at 8:56–9:9, 9:14–21, 6:22–39, 6:40–55, 6:56–7:2, 7:3–12, 11:36–51, 11:52–61, 11:62–12:4, 11:62–12:12, 12:13–23, 12:24–35, 9:36–51, 13:15–34, 13:35–45, 13:46–52; Ex. 226-Sony NEX-3 NEX-5 at 1[f]; Fukuda at ¶¶ 88, 91, 92, 144, 145, 0173, 0174, ¶¶ 0106–07, 0111–12, 0114–15, 0171–72; Meguro at ¶¶ 0042, 0043, 0044, 0045, 0066, 0067, 0068, 0071, 0072, 0073, 0086, 0087, 0098, 0064, 0065, ¶¶ 0099–100; Ex. 226-Nikon S630 at 1[f];

Phillips at ¶¶ 0029, 0032, 0023, 0024, 0026, 0030, 0022, 0028; Ex. 226-Nikon D7000 at 1[f]; Anon at 3:53–4:3, 4:4–23, 8:15–31, 8:32–43, 8:44–54, 8:55–64, 9:26–34, 9:35–55, 10:8–20; Jasinski at ¶¶ 111, 112, 113, 114, 115, 118, 99, 87; Ex. 226-Liu at 1[f]; Parulski177 at 28:5–15, 28:16–30, 29:49–55, 30:9–20, 36:22–40, 36:41–56, 36:57–61, 25:60–26:10, 23:33–51, 26:42–65, 26:66–27:3; Obrador at ¶¶ 21, 22, 33, 34, 35, 10, 42, Abstract; Steinberg at 11:29–48, 18:47–60, 18:61–19:4, 19:5–13, 19:22–32, 19:33–43, 19:44–52, 19:53–67, 20:1–8, 20:12–29, 20:30–44, 20:45–50, 20:51–65, 20:66–21:16, 29:35–48, 29:49–30:5, 30:6–19; Ex. 226-Canon SX210 IS at 1[f]; Ex. 226-Sony TX55 at 1[f].

The prior art references further describe “estimating a third weight (c3) associated with the third value.” *See, e.g.*, Iwamoto at 5:40–50, 5:51–67, 6:1–14, 3:35–57, 3:58–60, 7:18, 3:64–4:3, 9:48–56; Ex. 226-Kodak Z990 at 1[g]; Takeuchi at ¶¶ 132, 188, 189, 190, 191, 192, 212, 213, 240, 241, 242, 269, ¶¶ 0236–37, Claim 1; Aisaka at ¶¶ 0268, 276, 352, 353, 354, 365, 366, 367, 371, 375, 20, ¶¶ 0269–70, 0272–73; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:4–15, 13:35–40, 13:43–45, 13:47–54, 14:6–17, 2:45–55, 5:38–61; Shah at ¶¶ 0034, 0035, 0069, 0101, 0102, 0106, ¶¶ 0072–73; Ex. 226-Nikon D3100 at 1[g]; Marchesotti at ¶¶ 0096–97, 0098–99, 0105–06, ¶¶ 0100, 0101, 0102, 0104; Ramesh at ¶¶ 30, 41, 42, 53, Claim 10; Iwane at 4:48–5:5; Ohmiya at ¶¶ 0004, 0093, 0094, 0095, 0163, 0007, 0008, 0160, 0161, 0162; Alhadeif at 11:40–54, 12:45–56, 14:27–30, 14:46–48, 7:44–52, 7:53–62, 4:7–12, 4:14–16, 3:46–52, 3:53–64, 3:65–4:3, 4:4–6, 12:59–65, 12:66–13:18, 13:19–25; Lu at 4:50–53, 10:44–57, 11:8–10, 11:30–32; Fredlund at ¶¶ 0058, 0059, 0060, 0061, 0067, 0068, 0069, 0075, ¶¶ 0063–64; Lv at ¶¶ 42, 45, 46, 32, 35, 36, 51, 43; Ex. 226-Samsung WB700 at 1[g]; Ex. 226-Canon EOS-1DX at 1[g]; Ex. 226-Pentax K-5 at 1[g]; Pore at ¶¶ 0048, 0109, 0019, 0020, 0021, 0049, 0041, 0042, ¶¶ 0110–11, Claims 10, 20, 4; Wu at 11:7–16, 13:4–24, 13:25–38, 13:39–44, 14:4–21, 14:22–26, 7:60–8:20, 8:21–30, 4:43–58,

4:59–65, 5:33–52, 5:53–61; Nepomniachtchi at ¶¶ 111, 152, 0189, 342, 0349, 0407, 0408, 0409, 0410, 0411, ¶¶ 0190–91, 0347–48, 0405–06; Chen at 1:58–2:3, 2:4–16, 3:35–51, 8:52–61, 9:50–51; Nasiri at ¶¶ 55, 60, 118, 221, 222, 223, ¶¶ 0087–90; Ex. 226-Sony A33 at 1[g]; Koh at 6:6–22, 6:56–7:2, 7:3–12, 7:13–25, 8:56–9:9, 11:52–61, 11:62–12:12, 2:41–47, 9:57–10:11, 10:12–32, 10:33–36; Ex. 226-Sony NEX-3 NEX-5 at 1[g]; Fukuda at ¶¶ 87, 0092, 0093, 100, 0119, ¶¶ 0090–91, 0106–07, 0120–21; Meguro at ¶¶ 0047, 0058, 0059, 0060, 0061, 0101, 0102, 0103; Ex. 226-Nikon S630 at 1[g]; Phillips at ¶¶ 0023, 0026, 0030, 0031, 0032, 0027, 0028, 0029; Ex. 226-Nikon D7000 at 1[g]; Anon at 2:16–28, 3:53–4:3, 8:15–31, 8:32–35, 4:4–23, 4:24–33, 4:34–41, 4:42–51, 7:4–14, 7:15–21, 10:27–46, 10:48–61; Jasinski at ¶¶ 120, 121, 122, 123, Claim 19, ¶¶ 0028–29, 0030–31; Ex. 226-Liu at 1[g]; Parulski177 at 23:33–51, 27:61–28:2, 28:16–30, 28:31–57, 29:7–13, 32:18–26, 36:3–9, 36:57–61; Obrador at ¶¶ 33, 34, 35, 37, 21; Steinberg at 11:29–48, 27:36–41, 27:42–57, 27:58–28:7, 28:8–14, 28:15–29, 38:12–29, 38:30–33, 38:34–57, 40:10–23; Ex. 226-Canon SX210 IS at 1[g]; Ex. 226-Sony TX55 at 1[g].

The prior art references further describe “calculating a total value according to, or based on, the first value (QI1) weighted according to first weight (c1), the second value (QI2) weighted according to second weight (c2), the third value (QI3) weighted according to third weight (c3).” *See, e.g.*, Iwamoto at 5:30–39, 6:52–66, 6:67–7:9, 7:10–16, 7:18, 3:35–57, 7:40, 3:58–60, 7:41–43, 7:44–58, 3:64–4:3, 7:59–64; Ex. 226-Kodak Z990 at 1[h]; Takeuchi at ¶¶ 132, 0253, 0254, 0255, 260, ¶¶ 0251–52; Aisaka at ¶¶ 117, 118, 64, 268, 150, 331, 332, 333, 0336, 0337, 0340, 0341, 0325, 0326, 0327, 0328, ¶¶ 0169–70, 0338–39, 0323–24; Savakis at 12:29–39, 12:40–63, 13:4–15, 13:18–33, 2:5–22, 2:23–36, 2:45–55; Shah at ¶¶ 0028, 0103, 0104, 0105, ¶¶ 0072–74; Ex. 226-Nikon D3100 at 1[h]; Marchesotti at ¶¶ 0091, 0095, 0102, 0104, 0023, 0042, ¶¶ 0092–93, 0096–98, 0105–06; Ramesh at ¶¶ 30, 41, 6, 34, 39, 40, 24, Claim 10; Iwane at 4:48–5:5, 5:8–23,

1:30–42, 1:43–52, 2:4–21, 13:54–67; Ohmiya at ¶¶ 0094, 0095, 0163, 0004, 0007, 0080, 0081, 0147; Alhadeh at 12:45–56, 9:14–23, 9:28–43, 9:59–64, 9:65–10:3, 10:4–11, 10:12–21, 12:18–19, 12:57–65, 12:66–13:18, 13:19–25, 13:26–41, 13:65–14:3, 14:4–15, 14:16–30, 14:46–48; Lu at 3:66–4:3, 4:4–8, 4:50–53, 10:54–57, 11:8–10, 11:30–32, 11:5, 4:13–22, 5:5–19, 7:16–19; Fredlund at ¶¶ 0081, 0075, 0076, 0077, 0078, 0080, 0085, 0086, 0087, 0061, ¶¶ 0063–64; Lv at ¶¶ 75, 72, 63, 64, 66, 68, 69, 70, 26, 27, 28; Ex. 226-Samsung WB700 at 1[h]; Ex. 226-Canon EOS-1DX at 1[h]; Ex. 226-Pentax K-5 at 1[h]; Pore at ¶¶ 0110, 0008, 0019, 0048, 0053, 0049, ¶¶ 0111–14, Abstract; Wu at 10:20–35, 13:39–44, 11:7–16, 4:43–58, 4:59–65, 5:17–32, 5:33–49, 15:39–48, 7:60–8:20; Nepomniachtchi at ¶ 354; Chen at 7:57–8:7, 4:21–51, 1:58–2:3; Nasiri at ¶¶ 185, 186, 188, 66, 68, 69, 59, 60, 58; Ex. 226-Sony A33 at 1[h]; Koh at 11:62–12:12, 12:13–16, 12:36–56, 7:3–12, 9:57–10:11, 10:12–32, 10:33–42, 2:41–47; Ex. 226-Sony NEX-3 NEX-5 at 1[h]; Fukuda at ¶¶ 93, 96, 119, 125, 140, ¶¶ 0175–76, 0016–18; Meguro at ¶¶ 0044, 0045, 0047, 0051, 0052, 0053, 0054, 0061, 0062, 0072, 0082, 0090; Ex. 226-Nikon S630 at 1[h]; Phillips at ¶¶ 0026, 0030, 0022, 0023, 0032, 0034, 0036, 0033, 0024; Ex. 226-Nikon D7000 at 1[h]; Anon at 2:64–3:14, 5:53–6:8, 6:9–15, 8:32–35, 9:26–34, 9:35–55, 9:56–63, 3:53–4:3, 4:4–23, 5:26–51, 1:59–2:8, 2:9–15; Jasinski at ¶¶ 120, 121, 126, 128, 129, 130, 131, 0028, ¶¶ 0029–30; Ex. 226-Liu at 1[h]; Parulski177 at 35:34–42, 28:21–30, 32:5–17, 36:10–20, 36:22–40, 36:41–56, 31:18–34, 31:35–55, 31:56–32:4, 25:22–35; Obrador at ¶¶ 33, 34, 35, 21, 22, 32; Steinberg at 23:40–57, 23:58–24:9, 25:38–51, 25:52–58, 27:36–47; Ex. 226-Canon SX210 IS at 1[h]; Ex. 226-Sony TX55 at 1[h].

The prior art references further describe “comparing the total value to a threshold.” *See, e.g.,* Iwamoto at 6:19–51, 2:48–58, 3:12–20, 8:29–44, 8:45–61; Ex. 226-Kodak Z990 at 1[i]; Takeuchi at ¶¶ 177, 180; Aisaka at ¶¶ 0124–25, ¶¶ 0126, 56, 120, 121, 122; Savakis at 9:6–20,

9:48–54, Claim 37; Shah at ¶¶ 0086, 0087, 0088, 0089, 0103, 0104, 0105, 0106, Claim 7; Ex. 226-Nikon D3100 at 1[i]; Marchesotti at ¶¶ 0089, 0090, 0112, 0118, 0048, 0122, 0049; Ramesh at ¶¶ 41, 30, 4, 5, 6, 24, 52; Iwane at 5:8–23, 7:65–8:5, 11:51–61, 12:6–12, 13:54–67, 14:48–57, 14:58–67; Ohmiya at ¶¶ 0108, 0103, 0104, 0160, 0161, 0163, 0080, 0081; Alhadeef at 14:49–63, 15:1–12, 15:13–25, 15:26–34, 12:45–56, 9:28–43, 3:53–64, 3:65–4:3, 4:4–12, 4:14–16, 14:16–30, 14:46–48, 4:43–55, 4:56–67, 5:1, 5:4–14, 4:36–42; Lu at 12:9–11, 12:19, 12:28–31, 6:22–28, 1:8–17, 12:45–55; Fredlund at ¶¶ 0076, 0077, 0078, 0075, 0100, 0103, 0050, 0099; Lv at ¶¶ 47, 75, 76, 7, 45, 46, 20, 72; Ex. 226-Samsung WB700 at 1[i]; Ex. 226-Canon EOS-1DX at 1[i]; Ex. 226-Pentax K-5 at 1[i]; Pore at ¶¶ 0048, 0049, 0111, 0018, 0020, 0106, 0050, 0122, Abstract, ¶¶ 0021–22; Wu at Abstract, 5:17–32, 5:33–52, 5:53–61, 8:31–43, 8:44–63, 2:27–42, 3:22–32, 3:47–57, 10:36–50, 10:61–11:6; Nepomniachtchi at ¶¶ 299, 300, 312, 314, 315, 0358, 0361, 0345, 0349, 406, 407, 354, ¶¶ 0359–60, 0346–48; Chen at 2:4–16, 2:17–39, 9:50–51, Claims 26, 16; Nasiri at ¶¶ 120, 125, 158, 166, 168, 169, 170; Ex. 226-Sony A33 at 1[i]; Koh at 13:35–45, 13:53–55, 14:4–6, 7:3–12, 9:36–46, 2:48–58; Ex. 226-Sony NEX-3 NEX-5 at 1[i]; Fukuda at ¶¶ 0019–20, 0111–12, 0128–29, ¶¶ 22, 121, 0130, 143, 144, 148, 149; Meguro at ¶¶ 0060, 0061, 0067, 0098, 0103, 0104, 0107; Ex. 226-Nikon S630 at 1[i]; Phillips at ¶¶ 0024, 0032, 0033, 0093, 0094, 0115, 0116, 0120; Ex. 226-Nikon D7000 at 1[i]; Anon at 5:26–51, 5:53–6:8, 6:9–15, 7:55–63, 7:64–8:13, 8:32–35, 9:26–34, 10:8–20, 1:59–2:8; Jasinski at ¶¶ 88, 89, 133, 8, Claims 22, 23; Ex. 226-Liu at 1[i]; Parulski177 at 31:18–34, 31:35–55, 31:56–32:4, 32:5–17, 36:3–9, 36:22–40, 36:41–56, 15:47–53; Obrador at ¶¶ 34, 21, 33, 3, 42, 20; Steinberg at 29:4–18, 29:22–34, 23:40–57, 26:60–67, 34:4–14, 34:44–65, 34:66–35:20; Ex. 226-Canon SX210 IS at 1[i]; Ex. 226-Sony TX55 at 1[i].

The prior art references further describe “determining whether the total value is higher than, or below than, the threshold.” *See, e.g.,* Iwamoto at 6:19–51, 8:29–44, 8:45–61, 2:48–58,

8:62–9:6; Ex. 226-Kodak Z990 at 1[j]; Takeuchi at ¶¶ 212, 215, 216, 217, 11, 20, 130, 301, 141, 121; Aisaka at ¶¶ 126, 207, 231, 358, 359, ¶¶ 0211–12, 0235–36; Savakis at 9:6–20, 9:48–54, 12:29–39, 13:4–15, 13:18–33, Claim 37; Shah at Abstract, ¶¶ 0016, 0086, 0103; Ex. 226-Nikon D3100 at 1[j]; Marchesotti at ¶¶ 0112, 0048, 0090, 0118, 0122, 0059, 0024; Ramesh at ¶¶ 4, 41, 30, 34, 39, 40, 32, 33, Claim 10; Iwane at 5:8–23, 10:13–24, 10:25–32, 10:40–50, 11:16–28, 13:32–41; Ohmiya at ¶¶ 0095, 0108, 0113, 0163, ¶¶ 0109–10, Claims 4, 7; Alhadeef at 14:49–63, 15:1–12, 15:13–25, 15:26–36, 15:37–48, 15:49–62, 3:49–64, 3:65–4:3, 4:4–6, 4:43–55, 4:56–67, 5:1, 5:4–14, 8:40–53, 8:54–63; Lu at 7:16–19, 6:22–28, 12:9–11, 12:19, 12:28–37, 12:45–56, 13:1–4, 13:13–20, 6:8–21; Fredlund at ¶¶ 0076, 0077, 0078, 0050, 0075, 0070, 0071, 0072; Lv at ¶¶ 75, 76, 7, 47, 45, 8, 12, 27; Ex. 226-Samsung WB700 at 1[j]; Ex. 226-Canon EOS-1DX at 1[j]; Ex. 226-Pentax K-5 at 1[j]; Pore at ¶¶ 0048, 0049, 0105, 0106, 0109, ¶¶ 0110–11; Wu at Abstract, 2:27–42, 5:53–61, 8:31–43, 8:44–63, 9:39–43, 10:20–35, 10:36–50, 10:51–60, 13:39–44, 15:24–29, 15:39–48, 15:49–61; Nepomniachtchi at ¶¶ 312, 315, 300, 316, 342, 361, 349, 376, 407; Chen at 4:63–5:6, 2:4–16, 1:58–2:3, 1:16–23, 1:25–50, 7:53–56, 9:50–51; Nasiri at ¶¶ 111, 120, 110, 158, 159, 160, 186, 119, 127, 221; Ex. 226-Sony A33 at 1[j]; Koh at 6:56–7:2, 7:3–12, 11:59–61, 13:35–45, 13:53–55, 14:4–6; Ex. 226-Sony NEX-3 NEX-5 at 1[j]; Fukuda at ¶¶ 22, 28, 29, 0125, 0130, ¶¶ 0096–97, 0098–99, 0111–12, 0126–27, 0128–29; Meguro at ¶¶ 0067, 0082, 0092, 0098, 0104; Ex. 226-Nikon S630 at 1[j]; Phillips at ¶¶ 0024, 0026, 0032, 0033, 0079, 0080, 0094, 0098, 0099, ¶¶ 0092–93; Ex. 226-Nikon D7000 at 1[j]; Anon at 5:53–6:8, 6:9–15, 6:42–50, 7:55–63, 7:64–8:13, 8:15–31, 9:35–55, 10:8–20, 1:59–2:8, 3:27–42, 9:64–67; Jasinski at ¶¶ 8, 11, 14, 120, 121, 128, 129, 130, Claim 1, ¶¶ 0030–31; Ex. 226-Liu at 1[j]; Parulski177 at 31:18–34, 31:35–51, 31:56–32:4, 36:3–9, 36:10–20, 36:22–40, 36:41–56, 30:9–20, 31:35–55, 32:5–17; Obrador at ¶¶

33, 34, 35, 37, 20, 42; Steinberg at 28:15–29, 23:58–24:9, 24:10–29, 17:49–55, 18:25–33, 11:29–48, 7:48–62, 6:59–7:3; Ex. 226-Canon SX210 IS at 1[j]; Ex. 226-Sony TX55 at 1[j].

The prior art references further describe “acting in response to the determining.” *See, e.g.*, Iwamoto at 5:17–23, 6:19–51, 3:35–57, 7:59–64, 8:29–44, 8:45–61, 8:62–9:6, 9:31–47; Ex. 226-Kodak Z990 at 1[k]; Takeuchi at ¶¶ 133, 137, 138, 301, 302, 303, Claims 23, 24; Aisaka at ¶¶ 0124–25, ¶¶ 0126, 55, 56, 127, 129, 130, 371, 375, 376, Abstract; Savakis at 4:6–26, 4:44–63, 2:23–36, 2:45–55, 2:56–62, 15:60–16:2, Claims 36, 10; Shah at ¶¶ 0086, 0089, 0090, 0092, 0093, 0095, 0096, 0097; Ex. 226-Nikon D3100 at 1[k]; Marchesotti at ¶¶ 0061, 0107, 0024, ¶¶ 0108–09, 0110–11; Ramesh at ¶¶ 0024, 0025, 30, 0046, 0047, 62, 4, 5, ¶¶ 0026–27, 0041–42, 0044–45, Abstract; Iwane at 5:8–23, 5:24–34, 7:27–41, 7:42–57, 8:14–26, 14:22–34, 15:1–10, 1:43–52, 1:53–2:3, 2:4–21, 2:22–28; Ohmiya at ¶¶ 0082, 0088, 0129, 0146, 0147, 0150, 0152, 0171; Alhadeif at 14:49–53, 14:56–63, 15:1–12, 15:13–25, 15:26–36, 4:7–12, 3:10–21, 7:44–57, 15:37–48, 15:49–62, 12:45–56; Lu at 6:22–28, 6:32–36, 7:16–19, 12:9–11, 12:28–31, 5:5–13, 7:32–37, 3:27–31; Fredlund at ¶¶ 0081, 0082, 0083, 0098, 0099, 0074, Claims 23, 24; Lv at ¶¶ 7, 8, 11, 13, 32, 33, 37, 76; Ex. 226-Samsung WB700 at 1[k]; Ex. 226-Canon EOS-1DX at 1[k]; Ex. 226-Pentax K-5 at 1[k]; Pore at ¶¶ 0018, 0022, 0037, 0038, 0048, 0049, 0111, 0121; Wu at Abstract, 2:27–37, 2:49–55, 3:22–32, 5:17–32, 5:33–52, 5:53–61, 7:60–8:20, 8:31–43, 8:44–63, 10:36–50, 10:51–60, 10:61–11:6, 11:7–16, 11:17–26, 13:39–44, 15:24–29, 15:39–48, 15:49–61; Nepomniachtchi at ¶¶ 108, 109, 110, 111, 113, 116, 118, 327; Chen Claims 25, 26, 1:54–57, 1:58–2:3, 2:4–16, 9:50–51, 7:53–56, 1:16–23; Nasiri at ¶¶ 49, 60, 66, 69, 114, 115, 120, 221; Ex. 226-Sony A33 at 1[k]; Koh at 7:8–12, 7:26–37, 12:13–16, 12:24–35, 9:52–56, 9:57–10:11, 10:12–32; Ex. 226-Sony NEX-3 NEX-5 at 1[k]; Fukuda at ¶¶ 14, 97, 111, 0130, 0144, ¶¶ 0025–26, 0115–16, 0128–29, 0131–32, 0145–46; Meguro at ¶¶ 0042, 0058, 0060, 0063, 0064, 0067, 0070, 0091,

0092, 0093, 0098, 0099; Ex. 226-Nikon S630 at 1[k]; Phillips at ¶¶ 0080, 0081, 0082, 0083, 0098, 0107, 0109, 0125, 0126, 0127; Ex. 226-Nikon D7000 at 1[k]; Anon at 5:53–6:8, 6:9–15, 6:42–50, 6:51–7:3, 7:4–14, 7:15–29, 7:30–41, 7:43–54, 7:55–63, 7:64–8:13, 8:15–31, 1:59–2:8, 2:9–15, 2:16–28, 2:29–38; Jasinski at ¶¶ 31, 61, 88, 89, 90, 91, 0024, ¶¶ 0025–27, 0028–29; Ex. 226-Liu at 1[k]; Parulski177 at 29:49–55, 29:56–67, 30:1–8, 30:9–20, 31:18–34, 31:35–55, 36:3–9, 36:10–20, 36:22–40, 36:41–56, 36:57–61, 36:62–37:5, 37:6–22, 28:5–15, 28:16–30, 28:31–57, 37:23–40; Obrador at Abstract, ¶¶ 3, 4, 20, 35, 37, 42, Claim 20; Steinberg at 8:33–60, 10:16–22, 11:29–48, 11:57–12:5, 12:6–11, 12:41–48, Claims 1, 44; Ex. 226-Canon SX210 IS at 1[k]; Ex. 226-Sony TX55 at 1[k].

Other examples of these concepts are cited in the attached charts for the above references. *See* Appendix A, Exhibits 226-Aisaka through 226-Wu. It would have been known and simple to take prior art for real time assessment of picture quality by comparison with similar objects, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving picture quality. *Id.*

Samsung is not aware of any secondary considerations supporting non-obviousness of the '226 Patent claims. To the extent SnapAid seeks to introduce any alleged secondary considerations in the future, Samsung reserves the right to respond at that time.

F. Invalidity Under Section 112

Samsung provides an identification of the limitations of the '226 Patent that are invalid based on indefiniteness under pre-AIA 35 U.S.C. § 112 ¶ 2, or enablement or written description under pre-AIA 35 U.S.C. § 112 ¶ 1. These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1–16, 18–20 of the '226 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. “[A] patent is invalid for indefiniteness if its claims, read

in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). For example, as applied in SnapAid’s Infringement Contentions, the terms “estimating a first weight (c1) associated with the first,” “acting in response to the determining,” “calculating a total value,” “wherein the first, second, or third weight is respectively associated with an estimated error in the first, second, or third values,” and “A method for real-time estimating of a quality of a video stream comprising multiple images, for use with a device that comprises in a single enclosure a video digital camera module or functionality that comprises an optical lens for focusing received light from a scene and an image sensor coupled to the optical lens for capturing multiple consecutive frames, each frame comprises an image of the scene; a motion or location sensor for sensing the device motion; and a processor coupled to the image sensor and to the digital camera for receiving data therefrom, the method by the processor comprising performing the method according to claim 1 for the images in each of the frames of the video stream, and calculating a video total value based on or using, the total values of all of the images in the frames” are indefinite because they are not only subjective but also do not have a meaning that can be clearly determined from the patent, and thus fail to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1–16, 18–20 of the ’226 Patent are invalid under § 112 ¶ 1, because the specification as filed does not contain a sufficient written description supporting those claims. For example, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of SnapAid’s contentions. For example, Asserted Claims 1–16, 18–20 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following

reasons: the '226 Patent fails to provide an adequate written description of the phrases “calculating a total value,” and “the device comprises multiple motion or location sensors for sensing the device motion selected from a group consisting of a gyroscope, accelerometer, Global Positioning System (GPS), 9 Degrees of Freedom (DOF) sensing component, and 10 Degrees of Freedom (DOF) sensing component” as applied in SnapAid’s Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the '226 Patent. The subject matter of these claims, as described above, is not sufficiently shown in the specification of the '226 Patent. The subject matter of these claims, as described above, is not sufficiently enabled because the '226 patent specification does not teach one skilled in the art how to make and use the alleged invention. For example, the '226 Patent fails to enable the following and thus, Asserted Claims 1–16, 18–20 of the '226 Patent are invalid: “calculating a total value.” The foregoing phrase is not described in such a way that one of ordinary skill in the art could implement it to achieve the results sought by the individual named on the face of the '226 Patent as the inventor. The foregoing phrases are not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '226 Patent was in possession of the claimed subject matter. The Asserted Claims of the '226 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on SnapAid in accordance with the Court’s Scheduling Order.

G. Invalidity Under Section 101

The asserted claims of the '226 patent are invalid under *Alice Corp. Pty. v. CLS Bank Int’l*, 573 U.S. 208 (2014) because they are directed to patent-ineligible subject matter and fail to include

an “inventive concept,” *i.e.*, some additional element or combination of elements “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” 573 U.S. 208, 217–18 (2014).

The asserted claims of the ’226 patent are directed to a patent-ineligible concept—namely, the abstract idea of assessing picture quality and suggesting that the photographer take another picture after making an adjustment, such as to the photographer’s location or angle. The claims are directed to a process that photographers conduct in their minds—assessing a picture’s quality and then taking a new picture to try to get a better picture—which renders them abstract under Federal Circuit case law holding that “methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas—the ‘basic tools of scientific and technological work’ that are open to all.” *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)); *PersonalWeb Techs. LLC v. Google LLC*, 8 F.4th 1310, 1316 (Fed. Cir. 2021); *Longitude Licensing Ltd. v. Google LLC*, 2025 WL 1249136, at *2 (Fed. Cir. Apr. 30, 2025); *Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021); *Broadband iTV, Inc. v. Amazon.com, Inc.*, 113 F.4th 1359, 1371 (Fed. Cir. 2024); *USC IP P’ship, L.P. v. Meta Platforms, Inc.*, 2023 WL 5606977, at *2 (Fed. Cir. Aug. 30, 2023). This is further confirmed by the specification, which provides that the claimed inventions “utilize camera hardware ... to evaluate pictures taken in real time, and actively assist in obtaining the best picture given the circumstances at hand.” ’226 Pat., 2:10-14.

The asserted claims of the ’226 patent also lack any inventive concept and merely implement the abstract idea of taking a better picture using generic camera components—a “digital camera module,” an “optical lens,” an “image sensor,” a “motion or location sensor,” and a “processor.” ’226 Pat., Cl. 1. The inventor of the ’226 patent does not purport to have invented

these components or described or claimed any specific improvement in their functionality. To the contrary, the specification confirms that these are conventional components. *See, e.g.*, '226 Pat., 6:51-52 (“Any suitable input device, such as but not limited to a sensor, may be used ...”), 6:56-58 (“Any suitable processor may be employed to compute or generate information as described herein ...”). That these components are known and conventional is further demonstrated by their disclosure throughout the prior art disclosed in these contentions. Further, the dependent claims similarly recite additional generic limitations that fail to add any inventive concept, and are therefore patent-ineligible. *See In re Bd. of Trs. of Leland Stanford Junior Univ.*, 991 F.3d 1245, 1250 (Fed. Cir. 2021); *Braemar Mfg., LLC v. ScottCare Corp.*, 816 F. App'x 465, 470 (Fed. Cir. 2020); *In re TLI Commc'ns LLC Pat. Litig.*, 823 F.3d 607, 611 (Fed Cir. 2016). Accordingly, the asserted claims of the '226 patent are patent-ineligible under § 101.

VI. INVALIDITY CONTENTIONS FOR THE '452 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the “References Cited” on the face of the '452 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Samsung may rely upon that prior art, including the “References Cited” on the face of the '452 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Samsung reserves the right to rely upon additional prior art, information, and/or knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

The claim charts attached in Appendix A as Exhibits 452-Anon through 452-Yao identify where each limitation of the Asserted Claims of the '452 Patent is found in the prior art.

C. Identification of the Prior Art

Based on SnapAid’s Preliminary Infringement Contentions, Samsung identifies prior art below and in Appendix A as Exhibits 452-Anon through 452-Yao, which contain charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits 452-Anon through 452-Yao and below, Samsung has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Samsung notes that it has applied the prior art in accordance with SnapAid’s improper assertions of infringement and improper applications of the claims. Samsung does not agree with SnapAid’s application of the claims and denies infringement.

Samsung further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Samsung reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Samsung has also identified exemplary obviousness combinations further below.

'452 Patent Prior Art Patents / Patent Applications				
Ex. No.	Patent / Publication No.	Country of Origin	Filing Date	Date of Issue / Publication
Ex. 452-Anon	U.S. Patent No. 8,508,622 (“Anon”)	U.S.	Jan. 18, 2011	Aug. 13, 2013
Ex. 452-Bigioi	U.S. Patent Pub. No. 2012/0133746 A1 (“Bigioi”)	U.S.	Nov. 29, 2011	May 31, 2012
Ex. 452-Koh	U.S. Patent No. 7,973,848 (“Koh”)	U.S.	Mar. 31, 2008	July 5, 2011

Ex. 452-Kosaka	U.S. Patent Pub. No. 2004/0012682 A1 (“Kosaka”)	U.S.	July 2, 2003	Jan. 22, 2004
Ex. 452-Li	U.S. Patent Pub. No. 2011/0150447 A1 (“Li”)	U.S.	Dec. 21, 2009	June 23, 2011
Ex. 452-Lu	U.S. Patent No. 7,590,287 (“Lu”)	U.S.	Nov. 6, 2002	Sept. 15, 2009
Ex. 452-Lv	U.S. Patent Pub. No. 2013/0286161 A1 (“Lv”)	U.S.	Apr. 25, 2012	Oct. 31, 2013
Ex. 452-Medioni	U.S. Patent No. 7,856,125 (“Medioni”)	U.S.	Jan. 30, 2007	Dec. 21, 2010
Ex. 452-Mori	U.S. Patent Pub. No. 2011/0080494 A1 (“Mori”)	U.S.	Sept. 30, 2010	Apr. 7, 2011
Ex. 452-Nepomniachtchi	U.S. Patent Pub. No. 2013/0085935 A1 (“Nepomniachtchi”)	U.S.	May 1, 2012	Apr. 4, 2013
Ex. 452-Parulski177	U.S. Patent No. 6,539,177 (“Parulski177”)	U.S.	July 17, 2001	Mar. 25, 2003
Ex. 452-Pore	U.S. Patent Pub. No. 2009/0290037 A1 (“Pore”)	U.S.	May 22, 2008	Nov. 26, 2009
Ex. 452-Ramesh	U.S. Patent Pub. No. 2009/0296989 A1 (“Ramesh”)	U.S.	May 28, 2009	Feb. 28, 2006
Ex. 452-Robins	U.S. Patent Pub. No. 2003/0193604 A1 (“Robins”)	U.S.	Apr. 11, 2002	Oct. 16, 2003
Ex. 452-Sarhan	U.S. Patent No. 9,313,463 (“Sarhan”)	U.S.	June 9, 2010	Apr. 12, 2016
Ex. 452-Savakis	U.S. Patent No. 6,671,405 (“Savakis”)	U.S.	Dec. 14, 1999	Dec. 30, 2003
Ex. 452-Shah	U.S. Patent Pub. No. 2011/0205383 A1 (“Shah”)	U.S.	Feb. 24, 2010	Aug. 25, 2011
Ex. 452-Staudacher238	U.S. Patent No. 9,282,238 (“Staudacher238”)	U.S.	Oct. 29, 2010	Mar. 8, 2016
Ex. 452-Takeuchi	U.S. Patent Pub. No. 2010/0149361 A1 (“Takeuchi”)	U.S.	Oct. 14, 2009	June 17, 2010
Ex. 452-Wakabayashi	U.S. Patent Pub. No. 2013/0076856 A1 (“Wakabayashi”)	U.S.	Nov. 20, 2012	Mar. 28, 2013
Ex. 452-Wu	U.S. Patent No. 9,036,069 (“Wu”)	U.S.	Sept. 12, 2012	May 19, 2015

Ex. 452-Yang	U.S. Patent Pub. No. 2011/0222724 A1 (“Yang”)	U.S.	May 31, 2010	Sept. 15, 2011
Ex. 452-Yao	U.S. Patent Pub. No. 2010/0166302 A1 (“Yao”)	U.S.	Dec. 18, 2009	July 1, 2010
Ex. 452-Ayagi	JP Patent No. 4,135,100 (“Ayagi”)	Japan	Mar. 22, 2004	Aug. 20, 2008

'452 Patent Prior Art NPL References				
Ex. No.	Title	Date of Publication	Author	Publisher
Ex. 452-Garcia-Molina	Garcia-Molina, H., Database Systems: The Complete Book (2d ed. 2009) (“Garcia-Molina”)	2009	Garcia-Molina, H. et al.	Pearson Prentice Hall
Ex. 452-Liu	T. Liu, Image Quality Assessment Using Multi-Method Fusion (“Liu”)	May 2013	T. Liu	IEEE Transactions on Image Processing

'452 Patent Prior Art Products/Systems		
Ex. No.	System/Product	Public Disclosure Date
Ex. 452-Kodak Z990	Kodak Easyshare Max Z990 Digital Camera	May 2011
Ex. 452-Nikon D3X	Nikon D3X Digital Camera	December 2008
Ex. 452-Panasonic GX1	Panasonic Lumix DMC-GX1 Digital Camera	January 2012
Ex. 452-Samsung WB700	Samsung WB700 Digital Camera	December 2010
Ex. 452-Sony A33	Sony A33 Digital Camera	October 2010
Ex. 452-Sony NEX-3 NEX-5	Sony NEX-3/NEX-5 Digital Camera	May 2010
Ex. 452-Sony TX55	Sony DSC-TX55 Digital Camera	2011

'452 Patent Additional Prior Art/Background Art

U.S. Patent No. 8,009,198 (“Alhadeb”)
U.S. Patent Pub. No. 2010/0214216 A1 (“Nasiri”)
U.S. Patent Pub. No. 2010/0246939 A1 (“Aisaka”)
U.S. Patent Pub. No. 2012/0105662 A1 (“Staudacher”)
U.S. Patent Pub. No. 2012/0201427 A1 (“Jasinski”)
U.S. Patent Pub. No. 2008/0013851 A1 (“Ishiwata”)
U.S. Patent No. 8,264,553 (“Joshi”)
U.S. Patent Pub. No. 2008/0192129 A1 (“Walker”)
U.S. Patent Pub. No. 2007/0283269 A1 (“Obrador”)
U.S. Patent No. 8,682,097 (“Steinberg”)
U.S. Patent No. 5,831,670 (“Suzuki”)
U.S. Patent Pub. No. 2002/0110286 A1 (“Cheatle”)

Discovery is ongoing, and Samsung reserves the right to amend its identification of prior art herein based on additional investigation and third-party discovery.

D. Anticipation

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’452 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by primary references as set forth below and in the attached claim charts. The prior art references or systems listed herein and in the accompanying claim charts may disclose the elements of the Asserted Claims explicitly and/or inherently. To the extent SnapAid asserts that any of the prior art references charted in the attached exhibits fail to explicitly or inherently disclose any element of the Asserted Claims, Samsung contends it would have been obvious to modify such reference to include the allegedly missing element, in view of the knowledge of one of ordinary skill in the art, the admitted prior art of the Asserted Patents, and/or in combination with any of the other prior art references identified in the Exhibits for that respective patent.

E. Obviousness

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’452 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Samsung contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted ’452 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Samsung’s anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

One of the Following Primary References	In Combination with One or More of the Following References
Anon	Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Ayagi	Anon, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Bigioi	Anon, Ayagi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins,

	Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Garcia-Molina	Anon, Ayagi, Bigioi, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Kodak Z990	Anon, Ayagi, Bigioi, Garcia-Molina, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Koh	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Kosaka	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Li	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao

Liu	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Lu	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Lv	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Medioni	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Mori	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Nepomniachtchi	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700,

	Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Nikon D3X	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Panasonic GX1	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Parulski177	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Pore	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Ramesh	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao

Robins	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Samsung WB700	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Sarhan	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Savakis	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Shah	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Sony A33	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins,

	Samsung WB700, Sarhan, Savakis, Shah, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Sony NEX-3 NEX-5	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Sony TX55	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang, Yao
Staudacher238	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Takeuchi, Wakabayashi, Wu, Yang, Yao
Takeuchi	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Wakabayashi, Wu, Yang, Yao
Wakabayashi	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu, Yang, Yao

Wu	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Yang, Yao
Yang	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yao
Yao	Anon, Ayagi, Bigioi, Garcia-Molina, Kodak Z990, Koh, Kosaka, Li, Liu, Lu, Lv, Medioni, Mori, Nepomniachtchi, Nikon D3X, Panasonic GX1, Parulski177, Pore, Ramesh, Robins, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wakabayashi, Wu, Yang

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have understood that each of these references are in the same field of endeavor, namely real time assessment of picture quality. *See, e.g.*, Ex. 452-Kodak Z990; Ex. 452-Nikon D3X; Takeuchi at ¶¶ 176, 0007, 271, Abstract, Claim 1; Mori at ¶¶ 0010, 0035, 0055, 0007, Claim 1; Savakis at 5:30–61, 4:6–26, 2:45–55, Claims 18, 27; Shah at ¶¶ 0055, 0100, ¶¶ 0072–74, 0072–73, 0071–72; Ex. 452-Ayagi; Medioni at 3:15–21, 4:9–22, 3:1–14, Abstract, 6:6–16; Yang at ¶¶ 28, 8, 3, 5, ¶¶ 0002–03; Staudacher238 at 3:60–4:8, 4:25–34, 5:56–6:12, 1:48–57, 6:56–7:4; Ramesh at ¶¶ 24, 25, 53, 30, 20; Kosaka at Abstract, ¶¶ 0099, 0157, 0006, 0120, 0098; Yao at Abstract, ¶¶ 0024, 0003, 0036, ¶¶ 0008–11; Lu at 5:66–6:7, 6:22–36, 9:29–44, 3:4–14, 12:28–37; Lv at ¶¶ 0046,

0083, 0042, 0061, 0045; Ex. 452-Samsung WB700; Li at ¶¶ 31, 24, 113, ¶¶ 0083–84, 0072–73; Pore Claim 18, ¶¶ 0037, 0047, Abstract, ¶¶ 0110–11; Ex. 452-Garcia-Molina; Wu at 7:60–8:20, 8:44–63, 2:56–3:5, 5:33–52, Claim 10; Nepomniachtchi at ¶¶ 0296, 0100, 0131, 0297, 0110; Ex. 452-Sony A33; Robins at ¶¶ 0048, 0049, 0052, 0019, 0042; Koh at 5:52–6:5, 12:24–35, 4:8–19, 7:26–37, 5:36–51; Ex. 452-Sony NEX-3 NEX-5; Bigioi at ¶¶ 0012, 0025, 0013, 0023, 0019; Wakabayashi at ¶¶ 14, 100, 25, 0106, 33; Anon Claims 1, 9, 5:26–51, Abstract, 7:55–63; Ex. 452-Panasonic GX1; Ex. 452-Liu; Parulski177 at Abstract, 28:31–57, 17:1–17, 29:56–67, 28:16–30, 30:21–37; Sarhan at 4:36–5:21, 9:64–10:26, 5:22–44, 1:66–2:26, 1:31–48; Ex. 452-Sony TX55.

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, picture quality. *See, e.g.*, Ex. 452-Kodak Z990; Ex. 452-Nikon D3X; Takeuchi at ¶¶ 176, 121, 0007, Abstract, ¶¶ 0139–40; Mori at ¶¶ 0010, 0025, Claim 1, Abstract, ¶¶ 0073–74; Savakis at 5:30–61, 3:58–4:5, 4:64–5:29, 4:44–63, Claim 18; Shah at ¶¶ 0055, 0093, 0056, 0031, ¶¶ 0072–74; Ex. 452-Ayagi; Medioni at 3:15–21, Abstract, 4:9–22, 3:1–14, 2:56–61; Yang at ¶¶ 28, 8, 3, 5, ¶¶ 0002–03; Staudacher238 at 3:60–4:8, 2:7–33, 5:56–6:12, 2:56–3:2, 5:23–42; Ramesh at ¶¶ 20, 24, 25, 7, 33; Kosaka at ¶¶ 0099, 0006, 0157, 0054, ¶¶ 0008–09; Yao at Abstract, ¶¶ 0024, 0036, 0021, ¶¶ 0008–11; Lu at 5:66–6:7, 6:22–36, 9:29–44, 3:4–14, 1:44–59; Lv at ¶¶ 0046, 0083, 0042, 0045, 0032; Ex. 452-Samsung WB700; Li at ¶¶ 31, 131, 63, 113, 32; Pore Claim 18, ¶¶ 0037, 0047, Abstract, ¶¶ 0018–19; Ex. 452-Garcia-Molina; Wu at 7:60–8:20, 8:44–63, 2:56–3:5, 5:33–52, Claim 10; Nepomniachtchi at ¶¶ 0296, 0100, 0131, 0184, 0154; Ex. 452-Sony A33; Robins at ¶¶ 0048, 0042, 0049, 0052, ¶¶ 0004–05; Koh at 5:52–6:5, 5:36–51, 4:8–19, 6:56–7:2, 9:22–35; Ex. 452-Sony NEX-3 NEX-5; Bigioi at ¶¶ 0012, 0025, 0013, 0023, 0026; Wakabayashi at ¶¶ 14, 25, 23, 0106, Abstract; Anon Claims 1, 9, 5:26–51, 1:59–2:8, Abstract; Ex. 452-Panasonic GX1; Ex. 452-Liu; Parulski177 at 28:31–57, 17:1–17, 28:16–30,

21:17–38, 21:6–16; Sarhan at 4:36–5:21, 9:64–10:26, 5:22–44, 1:66–2:26, Abstract; Ex. 452-Sony TX55.

Further, the Asserted Claims of the '452 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—*i.e.*, the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe “[a] method for presenting suggestion to a user of a device to move the device to a different location, where the device comprises at least one digital camera module that comprises at least one optical lens and an image sensor coupled to said optical lens for capturing an image, and at least one processor coupled to the image sensor or digital camera for receiving data therefrom, the method by the processor.” *See, e.g.*, Ex. 452-Kodak Z990 at 1[pre]; Ex. 452-Nikon D3X at 1[pre]; Takeuchi at ¶¶ 9, 10, 0007, 79, 0083, 85, 86, 99, 100, 107, ¶¶ 0005–06, 0087–88; Mori at ¶¶ 0025, 0026, 0027, 0028, 0032, 0033, 0034, 0035; Savakis at 1:7–9, 1:13–30, 2:5–22, 2:45–55, 14:66–15:16, 15:39–52; Shah at ¶¶ 0030, 0038, 0039, 0041, 0042, 0043, 0044, 0053, 0054, 0055, 0056, 0069, 0070, 0075, 0076, ¶¶ 0071–72, 0001–02, 0010–11; Ex. 452-Ayagi at 1[pre]; Medioni at 3:1–14, 2:56–61, 2:1–2, 1:20–27, 1:28–42, 3:15–21; Yang at ¶¶ 19, 20, 21, 29, 30, 6, 7, 17; Staudacher238 at 1:26–47, 1:48–57, 2:1–6, 2:7–33, 2:56–3:2, 3:51–59, 3:60–4:8, 4:9–24, 4:25–34; Ramesh at ¶¶ 20, 21, 22, 25, 2, 7, 8, 9, ¶¶ 0012–13; Kosaka at ¶¶ 0042–43, 0049–50, 0051–52, 0008–09, 0010–11, ¶ 0003, Claim 16; Yao at ¶¶ 0002, 0003, 0036, 0005, 0020, 0037, ¶¶ 0017–19, 0008–11; Lu at 5:17–19, 5:30–39, 5:59–65, 5:66–6:7, 6:66–7:2, 7:16–27, 7:32–37, 7:49–54, 8:1–5, 9:5, 9:17–19, 13:13–15; Lv at ¶¶ 0002, 0006, 0026, 0029, 0031, 0079; Ex. 452-Samsung WB700 at 1[pre]; Li at ¶¶ 30, 31, 113, 114, 120, 121, 131, ¶¶ 0133–34; Pore at ¶¶ 0024, 0026, 0027, 0028, 0029, 0031, 0033, 0037; Ex. 452-Garcia-Molina at 1[pre]; Wu at Abstract, 2:27–42, 2:56–3:5, 4:25–42, 6:20–33, 6:34–40,

6:41–53, Claim 10; Nepomniachtchi at ¶¶ 0092, 0094, 0095, 0100, 0108, 0119, 0124, 0302, 0303, 0304, 0305, 0451, 0452; Ex. 452-Sony A33 at 1[pre]; Robins at ¶¶ 0017, 0018, 0020, 0021, 0033, 0034, 0036, 0054; Koh at 5:11–19, 5:36–51, 5:52–6:5, 6:16–22, 11:27–35; Ex. 452-Sony NEX-3 NEX-5 at 1[pre]; Bigioi at Abstract, ¶¶ 0010–11, ¶¶ 0012, 0013, 0014, 0035, 0039; Wakabayashi at ¶¶ 0080–81, 0104–05, ¶¶ 98, 99, 100, 0106, 90, 91, 101, 102; Anon at Abstract, 1:59–2:8, 2:55–56, 2:64–3:14, 3:15–26, 3:53–4:3, 5:53–6:8, 6:9–15, 8:65–9:25, Claim 9; Ex. 452-Panasonic GX1 at 1[pre]; Ex. 452-Liu at 1[pre]; Parulski177 at 10:57–64, 10:65–11:2, 11:3–18, 11:33–39, 21:17–38, 21:40–54, 22:42–58, 44:27–54; Sarhan at Abstract, 1:66–2:7, 2:33–37, 3:17–51, 3:52–4:2, 4:3–15, 12:1–23, 12:40–13:4; Ex. 452-Sony TX55 at 1[pre].

The prior art references further describe “calculating from an image received by at least one sensor and lens, a quality indicator QI1 of a face or object, and calculating an aesthetic quality indicator QI2 that uses a background blurring test of said face or object, and calculating a total quality indicator that is based at least partially on at least one of QI1 and QI2.” *See, e.g.*, Ex. 452-Kodak Z990 at 1[a]; Ex. 452-Nikon D3X at 1[a]; Takeuchi at Abstract, ¶¶ 0140, 141, 142, 139, 129, 130, 132, 0143, 0269, 0291, 296, 297, 298, 299, 8, 9, 10, 11, ¶¶ 0144–45; Mori at ¶¶ 0032, 0033, 0034, 0100, 0101, 0102, 0060, 0061, 0062, 0065, 0072, 0077, 0080, 0081, ¶¶ 0063–64, 0078–79; Savakis at 2:5–22, 2:23–36, 2:45–55, 6:56–58, 6:60–7:9, 7:10–16, 8:13–19, 8:21–28, 9:22–37, 9:39–46, 12:29–39; Shah at ¶¶ 0030, 0031, 0100, 0099, ¶¶ 0036–37, 0072–73, Claim 8; Ex. 452-Ayagi at 1[a]; Medioni at Abstract, 2:20–30, 3:22–33, 3:34–41, 3:47–50, 3:55–59, 6:66–7:8, 7:9–11; Yang at ¶¶ 19, 21, 6, 7, 16, 18; Staudacher238 at 2:1–6, 2:7–33, 2:34–55, 4:9–24, 4:25–34, 4:35–50, 5:6–22, 5:23–42; Ramesh at Abstract, ¶¶ 4, 5, 6, 30, 31, 33, 34; Kosaka at ¶¶ 0058, 0105, 0107, 0108, 0120, 0121, 0128, 0129, 0130, 0131, 0086, 0089, 0100, 0134, ¶¶ 0087–88; Yao at ¶¶ 0004–07, 0008–11, 0033–34, ¶¶ 0020, 0021, 0022, 0024, 0032; Lu at 2:62–3:3, 3:4–

8, 3:58–65, 9:57–62, 9:64–67, 10:2–5, 10:7–15, 10:18–20, 10:54–57, 11:8–10, 11:30–32; Lv at ¶¶ 0042, 0045, 0046, 0032, 0006, 0007, 0033; Ex. 452-Samsung WB700 at 1[a]; Li at ¶¶ 62, 27, 28, 31, 32, 0078, 90, 91, 92, ¶¶ 0072–73, 0079–80, 0083–84, Abstract; Pore at ¶¶ 0018–19, 0021–22, 0057–62, 0077–78, 0094–96, 0097–98, 0111–14, ¶¶ 0020, 0047, 0048, 0049, 0054, 0055, 0056, 0064, 0065, 0076, 0109, 0110, 0023; Ex. 452-Garcia-Molina at 1[a]; Wu at Abstract, 4:43–58, 4:59–65, 10:15–19, 10:20–35, 7:16–21, 11:27–35, 11:54–67, 12:1–13, 12:14–21, 2:27–42, 2:43–48; Nepomniachtchi at ¶¶ 0295, 0296, 0299, 0300, 0301, 0302, 0182, 0183, 0184, 0125, 0407; Ex. 452-Sony A33 at 1[a]; Robins at ¶¶ 0051, 0049, 0042, 0045, 0052, 0025, 0027, 0006, 0007, ¶¶ 0004–05; Koh at 6:16–22, 6:28–39, 6:40–55, 6:56–7:2, 7:3–12, 8:56–9:9, 9:10–13, 11:31–41; Ex. 452-Sony NEX-3 NEX-5 at 1[a]; Bigioi at ¶¶ 0025, 0026, 0027, 0031, 0032, 0033, 0035; Wakabayashi at ¶¶ 102, 107, 177, 178, 179, 195, 196; Anon at Abstract, 1:59–2:8, 2:9–15, 2:16–28, 2:29–48, 3:53–4:3, 5:53–6:8, 6:42–50, 7:4–14, 8:15–31, 8:32–43, 3:27–42, 8:44–54, 8:55–64, 8:65–9:25, 9:26–34, 9:35–55, 9:56–67, Claim 1; Ex. 452-Panasonic GX1 at 1[a]; Ex. 452-Liu at 1[a]; Parulski177 at 20:19–36, 20:38–60, 26:66–27:3, 27:61–28:2, 31:35–55, 31:56–32:4, 32:5–17, 17:1–17, 17:18–33, 17:34–56, 18:60–66; Sarhan at 4:36–5:21, 5:22–44, 12:1–23, 1:23–24, 1:49–60, 1:66–2:26; Ex. 452-Sony TX55 at 1[a].

The prior art references further describe “selecting based on the total quality indicator at least one appropriate suggestion from a pre-stored table of suggestions.” *See, e.g.*, Ex. 452-Kodak Z990 at 1[b]; Ex. 452-Nikon D3X at 1[b]; Takeuchi at ¶¶ 129, 130, 133, 134, 135, 233, 234, 235, 247, 248, 249, 250, 29, 25, 26, 12; Mori at ¶¶ 0072, 0043, 0046, 0048, 0005, 0006, 0023, 0109, ¶¶ 0073–74; Savakis at 4:6–26, 4:44–63, 4:64–5:29, 12:29–39, 13:4–15, 13:18–24, Claims 18, 27; Shah at Abstract, ¶¶ 0016, 0103, ¶¶ 0036–37; Ex. 452-Ayagi at 1[b]; Medioni at 1:62–67, 2:17–19, 3:1–14, 3:15–21, 3:22–33, 3:34–45; Yang at ¶¶ 16, 17, 27, 7, 18, 20, 19, 28; Staudacher238 at

2:56–3:2, 3:3–8, 3:9–23, 3:24–36, 3:37–50, 4:51–5:5, 5:23–42, 5:56–6:12; Ramesh at ¶¶ 30, 40, 27, 28, 29, 52, 0056, 0057, 0060, 6, 41, ¶¶ 0058–59; Kosaka at ¶¶ 0089, 0099, 0132, 0146, 0153, 0154, 0157; Yao at ¶¶ 0036, 0026, 0028, 0011, 0032, 0035, ¶¶ 0033–34; Lu at 6:37–46, 6:48–52, 6:60–65, 6:66–7:2, 7:16–27, 7:32–37, 10:54–57, 11:5, 12:9–11, 12:28–37; Lv at ¶¶ 0042, 0044, 0046, ¶¶ 0008–09; Ex. 452-Samsung WB700 at 1[b]; Li at ¶¶ 26, 32, 0102, 0103, 107, 109, 110, 140, 120, 135, 136, ¶¶ 0099–101, 0104–05; Pore at ¶¶ 0048, 0049, 0109, 0118, 0119, 0120, 0121, 0007, 0020, 0122, ¶¶ 0110–11, 0008–09, 0018–19, 0021–22; Ex. 452-Garcia-Molina at 1[b]; Wu at 5:33–49, 5:33–52, 5:53–61, 5:62–6:6, 6:7–19, 9:6–14, 9:15–30, 9:39–43, 10:61–11:6, 11:7–16, 11:17–26; Nepomniachtchi at ¶¶ 0125, 0129, 0118, 0188, 0189, 0300, 0302, 0407; Ex. 452-Sony A33 at 1[b]; Robins at ¶¶ 0051, 0045, 0046, 0052, 0053, 0005, 0020, 0038; Koh at 11:52–61, 11:62–12:12, 12:13–23, 13:35–45, 13:53–67, 7:8–25; Ex. 452-Sony NEX-3 NEX-5 at 1[b]; Bigioi at ¶¶ 0021, 0022, 0005, 0015, 0020, 0023; Wakabayashi at ¶¶ 20, 25, 33, 79, 89, 138, 168; Anon at 1:59–2:8, 2:29–44, 6:42–50, 7:15–29, 7:43–54, 8:32–35, 8:65–9:25, Abstract; Ex. 452-Panasonic GX1 at 1[b]; Ex. 452-Liu at 1[b]; Parulski177 at 18:60–67, 23:33–51, 24:1–12, 26:66–27:3, 27:25–32, 19:40–59, 19:60–20:8, 20:19–36, 23:52–67; Sarhan at 4:36–5:21, 6:52–7:26, 9:30–51, 9:64–10:26, 10:37–48, 10:49–11:18; Ex. 452-Sony TX55 at 1[b].

The prior art references further describe “suggesting to the user to move the device to different location.” *See, e.g.*, Ex. 452-Kodak Z990 at 1[c]; Ex. 452-Nikon D3X at 1[c]; Takeuchi at ¶¶ 284, 288, 291, 293, 303, 281, 30, 31; Mori at ¶¶ 0073–74, ¶¶ 0005, 0006, 0007, 0010; Shah at ¶¶ 0032, 0060, 0088, 0092, 0093, Claims 10, 17, 21; Ex. 452-Ayagi at 1[c]; Yang at ¶¶ 0002–03, ¶¶ 5, 6, 7, 8, 17, 18; Staudacher238 at Abstract, 2:56–3:2, 3:3–8, 3:9–23, 3:24–36, 3:37–50, 5:23–42, 5:43–55, 5:56–6:12; Ramesh at ¶¶ 4, 5, 7, 25, 26, 30, 51, 62; Kosaka at ¶¶ 0099, 0132, 0133, 0089, 0098, 0146, 0154, 0158; Lu at 5:30–31, 5:59–65, 5:66–6:7, 6:8–21, 6:37–46, 6:48–

52, 6:60–65, 7:20–27; Lv at ¶¶ 0042, 0044, 0046, 0031, 0032, 0041; Ex. 452-Samsung WB700 at 1[c]; Li at ¶¶ 0103, 139, 140, 24, 32, 39, 79, ¶¶ 0104–05, 0121–22; Pore at ¶¶ 0033, 0034, 0036, 0037, 0048, 0049, 0050, 0038; Ex. 452-Garcia-Molina at 1[c]; Wu at Abstract, 4:25–42, 5:62–6:6, 6:20–33, 9:6–14, 9:15–30, 11:17–26, 3:47–57; Nepomniachtchi at ¶¶ 0153, 0154, 0390, 0388, 0389, 0399, 0400, 0407, 0409, 0105; Ex. 452-Sony A33 at 1[c]; Robins at ¶¶ 0038, 0046, 0052, 0053, 0001, 0005, 0007, 0020; Koh at 9:52–56, 9:57–10:11, 10:12–32, 9:36–51, 10:43–59, 10:60–11:13, 11:14–18, 11:62–12:12, 12:13–16, 12:36–56, 13:56–14:3, 14:4–6, 14:7–32; Ex. 452-Sony NEX-3 NEX-5 at 1[c]; Bigioi at ¶¶ 0020, 0021, 0022, 0005, 0015, 0018; Wakabayashi at ¶¶ 190, 191, 153, 175, 33, 35, 173, 198; Anon at 2:9–15, 2:16–28, 2:29–38, 2:64–3:14, 3:15–26, 3:27–42, 5:26–51, 6:42–50, 7:15–29, 7:43–54, 7:55–63, 7:64–8:13, 8:65–9:25, 9:26–34, 9:35–55, 10:27–46; Ex. 452-Panasonic GX1 at 1[c]; Ex. 452-Liu at 1[c]; Parulski177 at 20:62–21:5, 21:6–16, 22:21–40, 37:23–40, 38:15–20, 38:21–34, 38:36–43, 38:53–65, 40:50–58, 40:59–41:29, 41:30–42, 31:35–55; Ex. 452-Sony TX55 at 1[c].

The prior art references further describe “presenting the suggestion to the user.” *See, e.g.*, Ex. 452-Kodak Z990 at 1[d]; Ex. 452-Nikon D3X at 1[d]; Takeuchi at ¶¶ 270, 271, 285, 286, 293, 294, 291, 303, 100; Mori at ¶¶ 0073–74, 0003–04, ¶¶ 0005, 0006, 0007, 0010, Abstract; Savakis at 14:66–15:16, 15:17–38, 15:39–52, 2:56–62, 4:6–26, 2:5–22, 2:45–55; Shah at ¶¶ 0060, 0062, 0032, 0039, 0043, 0047, 0049, Claim 10; Ex. 452-Ayagi at 1[d]; Yang at ¶¶ 13, 17, 19, 27, 28, 29, 30, 31; Staudacher238 at Abstract, 2:56–3:2, 3:3–8, 3:9–23, 3:24–36, 3:37–50, 5:23–42, 5:43–55; Ramesh at ¶¶ 21, 22, 27, 28, 4, 25, 24, Abstract; Kosaka at ¶¶ 0089, 0099, 0128, 0129, 0130, 0131, 0132, 0100, 0155, 0156, 0157, 0158, 0043, 0045, ¶¶ 0047–48; Yao at ¶¶ 0036, 0021, 0022, 0023, 0024, 0025, 0026, 0033; Lv at ¶¶ 0042, 0044, 0046, ¶¶ 0008–09; Ex. 452-Samsung WB700 at 1[d]; Li at ¶¶ 0113, 0116, 0117, 109, 110, ¶¶ 0114–15; Pore at ¶¶ 0033, 0034, 0036, 0037, 0050,

0006, ¶¶ 0018–19; Ex. 452-Garcia-Molina at 1[d]; Wu at Abstract, 2:27–42, 2:56–3:5, 5:62–6:6, 6:20–33, 9:6–14, 9:15–30, 9:31–43, 11:7–16, 11:17–26, 19:21–25; Nepomniachtchi at ¶¶ 0028–29, ¶¶ 0101, 0105, 0112, 0131, 0317, 0409; Ex. 452-Sony A33 at 1[d]; Robins at ¶¶ 0036, 0037, 0038, 0046, 0052, 0053, 0001, 0020; Koh at 13:56–14:3, 9:57–10:11, 10:12–32, 10:43–59, 10:60–11:13, 11:62–12:12, 12:13–23, 12:24–35, 12:36–56; Ex. 452-Sony NEX-3 NEX-5 at 1[d]; Bigioi at ¶¶ 0005, 0011, 0013, 0015, 0021, 0023, 0024; Wakabayashi at ¶¶ 106, 116, 153, 154, 155, 162, 23, 24, 0049, 0052, 0053, ¶¶ 0172–73, 0050–51; Anon at 1:59–2:8, 2:29–44, 2:64–3:14, 3:15–26, 3:27–42, 3:53–4:3, 5:53–6:8, 6:9–15, 6:42–50, 6:51–59, 8:65–9:25; Ex. 452-Panasonic GX1 at 1[d]; Ex. 452-Liu at 1[d]; Parulski177 at 28:21–30, 28:31–57, 28:58–65, 22:21–40, 38:15–29, 37:46–52, 40:59–41:29; Sarhan at 3:52–4:2, 4:3–15, 4:16–35, 13:5–16, 3:17–51, 6:22–36; Ex. 452-Sony TX55 at 1[d].

Other examples of these concepts are cited in the attached charts for the above references. *See* Appendix A, Exhibits 452-Anon through 452-Yao. It would have been known and simple to take prior art for real time assessment of picture quality by comparison with similar objects, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving picture quality. *Id.*

Samsung is not aware of any secondary considerations supporting non-obviousness of the '452 Patent claims. To the extent SnapAid seeks to introduce any alleged secondary considerations in the future, Samsung reserves the right to respond at that time.

F. Invalidity Under Section 112

Samsung provides an identification of the limitations of the '452 Patent that are invalid based on indefiniteness under pre-AIA 35 U.S.C. § 112 ¶ 2, or enablement or written description under pre-AIA 35 U.S.C. § 112 ¶ 1. These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1–12 of the '452 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). For example, as applied in SnapAid’s Infringement Contentions, the terms “background blurring test,” “obstruction of at least one lens,” “wherein a separate QI2 is calculated for each lens and a sensor module the device has, wherein QI2 of QI total or both are based on at least two QI1 from 2 such lenses and sensor modules,” “QI_total,” “building at least a partial reconstruction of a 3D scene according to the images from the camera module; wherein the suggestion is further based on the 3D scene reconstruction,” “wherein a confidence level of a subject detection is calculated based on the object detection,” and “wherein at least one of a focus distance or lens aperture is used to determining a depth of field of the image, wherein the depth of field is computed, based on a movement of the device in the z axis, wherein the z axis is the direction to the object in a scene, may be included in the total quality indicator” are indefinite because they are not only subjective but also do not have a meaning that can be clearly determined from the patent, and thus fail to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1–12 of the '452 Patent are invalid under § 112 ¶ 1, because the specification as filed does not contain a sufficient written description supporting those claims. For example, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of SnapAid’s contentions. For example, Asserted Claims 1–12 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following reasons: the

'452 Patent fails to provide an adequate written description of the phrases “background blurring test,” and “building at least a partial reconstruction of a 3D scene according to the images from the camera module; wherein the suggestion is further based on the 3D scene reconstruction” as applied in SnapAid’s Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the '452 Patent. The subject matter of these claims, as described above, is not sufficiently shown in the specification of the '452 Patent. The subject matter of these claims, as described above, is not sufficiently enabled because the '452 patent specification does not teach one skilled in the art how to make and use the alleged invention. For example, the '452 Patent fails to enable the following and thus, Asserted Claims 1–12 of the '452 Patent are invalid: “background blurring test,” and “building at least a partial reconstruction of a 3D scene according to the images from the camera module; wherein the suggestion is further based on the 3D scene reconstruction.” The foregoing phrases are not described in such a way that one of ordinary skill in the art could implement them to achieve the results sought by the individual named on the face of the '452 Patent as the inventor. The foregoing phrases are not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '452 Patent was in possession of the claimed subject matter. The Asserted Claims of the '452 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on SnapAid in accordance with the Court’s Scheduling Order.

G. Invalidity Under Section 101

The asserted claims of the '452 patent are invalid under *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208 (2014) because they are directed to patent-ineligible subject matter and fail to include an “inventive concept,” *i.e.*, some additional element or combination of elements “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” 573 U.S. 208, 217–18 (2014).

The asserted claims of the '452 patent are directed to a patent-ineligible concept—namely, the abstract idea of assessing picture quality and suggesting that the photographer take another picture after making an adjustment, such as to the photographer’s location or angle. The claims are directed to a process that photographers conduct in their minds—assessing a picture’s quality and then taking a new picture to try to get a better picture—which renders them abstract under Federal Circuit case law holding that “methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas—the ‘basic tools of scientific and technological work’ that are open to all.” *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)); *PersonalWeb Techs. LLC v. Google LLC*, 8 F.4th 1310, 1316 (Fed. Cir. 2021); *Longitude Licensing Ltd. v. Google LLC*, 2025 WL 1249136, at *2 (Fed. Cir. Apr. 30, 2025); *Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021); *Broadband iTV, Inc. v. Amazon.com, Inc.*, 113 F.4th 1359, 1371 (Fed. Cir. 2024); *USC IP P’ship, L.P. v. Meta Platforms, Inc.*, 2023 WL 5606977, at *2 (Fed. Cir. Aug. 30, 2023). This is further confirmed by the specification, which provides that the claimed inventions “utilize camera hardware ... to evaluate pictures taken in real time, and actively assist in obtaining the best picture given the circumstances at hand.” '452 Pat., 2:24-28.

The asserted claims of the '452 patent also lack any inventive concept and merely implement the abstract idea of taking a better picture using generic camera components—a

“device,” a “digital camera module,” an “optical lens,” an “image sensor,” and a “processor.” ’452 Pat., Cl. 1. The inventor of the ’452 patent does not purport to have invented these components or described or claimed any specific improvement in their functionality. To the contrary, the specification confirms that these are conventional components. *See, e.g.*, ’452 Pat., 6:31-32 (“Any suitable input device, such as but not limited to a sensor, may be used ...”), 6:36-38 (“Any suitable processor may be employed to compute or generate information as described herein ...”). That these components are known and conventional is further demonstrated by their disclosure throughout the prior art disclosed in these contentions. Further, the dependent claims similarly recite additional generic limitations that fail to add any inventive concept, and are therefore patent-ineligible. *See In re Bd. of Trs. of Leland Stanford Junior Univ.*, 991 F.3d 1245, 1250 (Fed. Cir. 2021); *Braemar Mfg., LLC v. ScottCare Corp.*, 816 F. App’x 465, 470 (Fed. Cir. 2020); *In re TLI Commc’ns LLC Pat. Litig.*, 823 F.3d 607, 611 (Fed Cir. 2016). Accordingly, the asserted claims of the ’452 patent are patent-ineligible under § 101.

VII. INVALIDITY CONTENTIONS FOR THE ’702 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the “References Cited” on the face of the ’702 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Samsung may rely upon that prior art, including the “References Cited” on the face of the ’702 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Samsung reserves the right to rely upon additional prior art, information, and/or

knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

The claim charts attached in Appendix A as Exhibits 702-Anon through 702-Wu identify where each limitation of the Asserted Claims of the '702 Patent is found in the prior art.

C. Identification of the Prior Art

Based on SnapAid’s Preliminary Infringement Contentions, Samsung identifies prior art below and in Appendix A as Exhibits 702-Anon through 702-Wu, which contain charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits 702-Anon through 702-Wu and below, Samsung has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Samsung notes that it has applied the prior art in accordance with SnapAid’s improper assertions of infringement and improper applications of the claims. Samsung does not agree with SnapAid’s application of the claims and denies infringement.

Samsung further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Samsung reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Samsung has also identified exemplary obviousness combinations further below.

'702 Patent Prior Art Patents / Patent Applications				
Ex. No.	Patent / Publication No.	Country of Origin	Filing Date	Date of Issue / Publication
Ex. 702-Anon	U.S. Patent No. 8,508,622 (“Anon”)	U.S.	Jan. 18, 2011	Aug. 13, 2013

Ex. 702-Cheatle	U.S. Patent Pub. No. 2002/0110286 A1 (“Cheatle”)	U.S.	Jan. 9, 2002	Aug. 15, 2002
Ex. 702-Chen	U.S. Patent No. 6,810,083 (“Chen”)	U.S.	Nov. 16, 2001	Oct. 26, 2004
Ex. 702-Fredlund	U.S. Patent Pub. No. 2011/0216209 A1 (“Fredlund”)	U.S.	Mar. 3, 2010	Sept. 8, 2011
Ex. 702-Iwane	U.S. Patent No. 7,660,519 (“Iwane”)	U.S.	Aug. 28, 2006	Feb. 9, 2010
Ex. 702-Jasinski	U.S. Patent Pub. No. 2012/0201427 A1 (“Jasinski”)	U.S.	Feb. 4, 2011	Aug. 9, 2012
Ex. 702-Kim882	U.S. Patent Pub. No. 2011/0187882 A1 (“Kim882”)	U.S.	Sept. 10, 2010	Aug. 4, 2011
Ex. 702-Koh	U.S. Patent No. 7,973,848 (“Koh”)	U.S.	Mar. 31, 2008	July 5, 2011
Ex. 702-Kosaka	U.S. Patent Pub. No. 2004/0012682 A1 (“Kosaka”)	U.S.	July 2, 2003	Jan. 22, 2004
Ex. 702-Lu	U.S. Patent No. 7,590,287 (“Lu”)	U.S.	Nov. 6, 2002	Sept. 15, 2009
Ex. 702-Lv	U.S. Patent Pub. No. 2013/0286161 A1 (“Lv”)	U.S.	Apr. 25, 2012	Oct. 31, 2013
Ex. 702-Medioni	U.S. Patent No. 7,856,125 (“Medioni”)	U.S.	Jan. 30, 2007	Dec. 21, 2010
Ex. 702-Nepomniachtchi	U.S. Patent Pub. No. 2013/0085935 A1 (“Nepomniachtchi”)	U.S.	May 1, 2012	Apr. 4, 2013
Ex. 702-Parulski177	U.S. Patent No. 6,539,177 (“Parulski177”)	U.S.	July 17, 2001	Mar. 25, 2003
Ex. 702-Phillips	U.S. Patent Pub. No. 2005/0226490 A1 (“Phillips”)	U.S.	Mar. 30, 2005	Oct. 13, 2005
Ex. 702-Ramesh	U.S. Patent Pub. No. 2009/0296989 A1 (“Ramesh”)	U.S.	May 28, 2009	Feb. 28, 2006
Ex. 702-Sarhan	U.S. Patent No. 9,313,463 (“Sarhan”)	U.S.	June 9, 2010	Apr. 12, 2016
Ex. 702-Savakis	U.S. Patent No. 6,671,405 (“Savakis”)	U.S.	Dec. 14, 1999	Dec. 30, 2003

Ex. 702-Shah	U.S. Patent Pub. No. 2011/0205383 A1 (“Shah”)	U.S.	Feb. 24, 2010	Aug. 25, 2011
Ex. 702-Staudacher238	U.S. Patent No. 9,282,238 (“Staudacher238”)	U.S.	Oct. 29, 2010	Mar. 8, 2016
Ex. 702-Suzuki	U.S. Patent No. 5,831,670 (“Suzuki”)	U.S.	June 18, 1996	Nov. 3, 1998
Ex. 702-Walker	U.S. Patent Pub. No. 2008/0192129 A1 (“Walker”)	U.S.	Dec. 23, 2004	Aug. 14, 2008
Ex. 702-Wu	U.S. Patent No. 9,036,069 (“Wu”)	U.S.	Sept. 12, 2012	May 19, 2015
Ex. 702-Ayagi	JP Patent No. 4,135,100 (“Ayagi”)	Japan	Mar. 22, 2004	Aug. 20, 2008

'702 Patent Prior Art NPL References				
Ex. No.	Title	Date of Publication	Author	Publisher
Ex. 702-Garcia-Molina	Garcia-Molina, H., Database Systems: The Complete Book (2d ed. 2009) (“Garcia-Molina”)	2009	Garcia-Molina, H. et al.	Pearson Prentice Hall
Ex. 702-Liu	T. Liu, Image Quality Assessment Using Multi-Method Fusion (“Liu”)	May 2013	T. Liu	IEEE Transactions on Image Processing

'702 Patent Prior Art Products/Systems		
Ex. No.	System/Product	Public Disclosure Date
Ex. 702-Canon EOS-1DX	Canon EOS-1DX Digital Camera	March 2012
Ex. 702-Kodak Z990	Kodak Easyshare Max Z990 Digital Camera	May 2011
Ex. 702-Nikon D3100	Nikon D3100 Digital Camera	August 2010
Ex. 702-Nikon D3X	Nikon D3X Digital Camera	December 2008
Ex. 702-Nikon D7000	Nikon D7000 Digital Camera	October 2010

Ex. 702-Nikon S630	Nikon Coolpix S630 Digital Camera	February 2009
Ex. 702-Panasonic GX1	Panasonic Lumix DMC-GX1 Digital Camera	January 2012
Ex. 702-Pentax K-5	Pentax K-5 SLR Digital Camera	December 2010
Ex. 702-Samsung WB700	Samsung WB700 Digital Camera	December 2010
Ex. 702-Sony A33	Sony A33 Digital Camera	October 2010
Ex. 702-Sony TX55	Sony DSC-TX55 Digital Camera	2011

'702 Patent Additional Prior Art/Background Art
U.S. Patent No. 8,009,198 (“AlhadeF”)
U.S. Patent Pub. No. 2010/0149361 A1 (“Takeuchi”)
U.S. Patent Pub. No. 2010/0214216 A1 (“Nasiri”)
U.S. Patent Pub. No. 2012/0105662 A1 (“Staudacher”)
U.S. Patent Pub. No. 2010/0246939 A1 (“Aisaka”)
U.S. Patent Pub. No. 2008/0013851 A1 (“Ishiwata”)
U.S. Patent No. 8,264,553 (“Joshi”)
U.S. Patent Pub. No. 2011/0150447 A1 (“Li”)
U.S. Patent Pub. No. 2011/0222724 A1 (“Yang”)
U.S. Patent Pub. No. 2007/0283269 A1 (“Obrador”)
U.S. Patent No. 8,682,097 (“Steinberg”)
U.S. Patent Pub. No. 2012/0133746 A1 (“Bigioi”)
U.S. Patent Pub. No. 2013/0076856 A1 (“Wakabayashi”)

Discovery is ongoing, and Samsung reserves the right to amend its identification of prior art herein based on additional investigation and third-party discovery.

D. Anticipation

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’702 Patent are anticipated, either expressly or inherently as understood by a person having ordinary

skill in the art, by primary references as set forth below and in the attached claim charts. The prior art references or systems listed herein and in the accompanying claim charts may disclose the elements of the Asserted Claims explicitly and/or inherently. To the extent SnapAid asserts that any of the prior art references charted in the attached exhibits fail to explicitly or inherently disclose any element of the Asserted Claims, Samsung contends it would have been obvious to modify such reference to include the allegedly missing element, in view of the knowledge of one of ordinary skill in the art, the admitted prior art of the Asserted Patents, and/or in combination with any of the other prior art references identified in the Exhibits for that respective patent.

E. Obviousness

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’702 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Samsung contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted ’702 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Samsung’s anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

One of the Following Primary References	In Combination with One or More of the Following References
Anon	Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630,

	Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Ayagi	Anon, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Canon EOS-1DX	Anon, Ayagi, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Cheatle	Anon, Ayagi, Canon EOS-1DX, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Chen	Anon, Ayagi, Canon EOS-1DX, Cheatle, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Fredlund	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Garcia-Molina, Iwane,

	Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Garcia-Molina	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Iwane	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Jasinski	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Kim882	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung

	WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Kodak Z990	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Koh	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Kosaka	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Liu	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Lu	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882,

	Kodak Z990, Koh, Kosaka, Liu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Lv	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Medioni	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Nepomniachtchi	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Nikon D3100	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony

	A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Nikon D3X	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Nikon D7000	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Nikon S630	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Panasonic GX1	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Parulski177	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu,

	Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Pentax K-5	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Phillips	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Ramesh	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Samsung WB700	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Sarhan, Savakis, Shah, Sony

	A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Sarhan	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Savakis	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Shah	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Sony A33, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Sony A33	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony TX55, Staudacher238, Suzuki, Walker, Wu
Sony TX55	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu,

	Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher238, Suzuki, Walker, Wu
Staudacher238	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Suzuki, Walker, Wu
Suzuki	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Walker, Wu
Walker	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Wu
Wu	Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Medioni, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Ramesh, Samsung WB700, Sarhan,

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have understood that each of these references are in the same field of endeavor, namely real time assessment of picture quality. *See, e.g.*, Ex. 702-Nikon D3X; Ex. 702-Kodak Z990; Savakis at 5:30–61, 4:6–26, 2:45–55, Claims 27, 1; Ex. 702-Ayagi; Shah at ¶¶ 0034, 0055, ¶¶ 0072–74, 0072–73, 0071–72; Ex. 702-Nikon D3100; Medioni at 3:15–21, 4:46–60, 3:1–14, 6:3–16, 5:42–56; Staudacher238 at 3:60–4:8, 4:25–34, 5:56–6:12, 1:48–57, 6:56–7:4; Ramesh at ¶¶ 0024, 0025, 0003; Iwane at 4:4–13, 6:47–61, Abstract, 2:4–21, 1:53–2:3; Kosaka at Abstract, ¶¶ 0099, 0067, 0006, 0157, Abstract; Lu at 3:4–14, 3:20–31, 6:22–28, 9:29–44, 12:28–37; Fredlund at ¶¶ 0048, 0064, 0069, 0073, ¶¶ 0063–64; Lv at ¶¶ 0083, 0046, 0042, 0027, 0032; Ex. 702-Samsung WB700; Ex. 702-Canon EOS-1DX; Ex. 702-Pentax K-5; Suzuki at 18:13–46, 7:19–33, 5:32–48, 7:44–8:7, 4:43–5:3; Ex. 702-Garcia-Molina; Cheatle at Abstract, ¶¶ 0019, 0017, 0040, 0004, Claim 24; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Chen at Abstract, 1:25–50, 1:30–50, 4:6–20, 4:21–51, 4:13–20; Nepomniachtchi at ¶¶ 296, 297, 210, 110, ¶¶ 0125–26; Kim882 at ¶¶ 0051, 0095, 0102, Abstract, ¶¶ 0052–53; Ex. 702-Sony A33; Koh at 5:52–6:5, 12:24–35, 4:8–19, 7:26–41, 7:26–37; Ex. 702-Nikon S630; Phillips at ¶¶ 0091–93, ¶¶ 0080, 0094, 0036, 0090; Anon at 1:59–2:8, Abstract, 5:26–51, 10:8–25, 7:55–63; Ex. 702-Panasonic GX1; Ex. 702-Nikon D7000; Jasinski at ¶¶ 0003, 0131, 0088, Claim 25; Ex. 702-Liu; Parulski177 at Abstract, 28:31–57, 35:8–23, 5:64–6:22, 34:7–26, 28:16–30; Walker at ¶¶ 481, 340, 30, 257, 328; Sarhan at 4:36–5:21, 9:64–10:26, 5:22–44, 1:66–2:26, 1:31–48; Ex. 702-Sony TX55.

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, picture quality. *See, e.g.*, Ex. 702-Nikon D3X; Ex.

702-Kodak Z990; Savakis at 5:30–61, 3:58–4:5, 4:64–5:29, 4:44–63, 1:31–44; Ex. 702-Ayagi; Shah at ¶¶ 0034, 0055, 0046, 0033, 0093; Ex. 702-Nikon D3100; Medioni at 3:15–21, 4:46–60, 5:42–56, Abstract, 2:46–61; Staudacher238 at 3:60–4:8, 2:7–33, 5:56–6:12, 2:56–3:2, 5:23–42; Ramesh at ¶¶ 0024, 0025, 0033; Iwane at 4:4–13, Abstract, 1:30–42, 4:48–5:5, 5:35–51; Kosaka at ¶¶ 0099, 0006, 0157, 0054, 0092; Lu at 3:4–14, 9:29–44, 6:22–28, Abstract, 2:17–24; Fredlund at ¶¶ 0048, 0064, 0034, ¶¶ 0063–64; Lv at ¶¶ 0083, 0046, 0042, 0032, 0045; Ex. 702-Samsung WB700; Ex. 702-Canon EOS-1DX; Ex. 702-Pentax K-5; Suzuki at 3:37–67, 4:1–15, 4:16–33, 18:13–46, Claim 20; Ex. 702-Garcia-Molina; Cheatle at ¶¶ 0019, 0040, 0014, 0017; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Chen at 1:25–50, 1:30–50, 4:6–20, 3:52–4:3, 4:13–20; Nepomniachtchi at ¶¶ 296, 210, 297, 100, 131; Kim882 at ¶¶ 0051, 0052, 0006, Abstract, ¶¶ 0052–53; Ex. 702-Sony A33; Koh at 5:52–6:5, 4:8–19, 1:25–30, 9:22–35, 6:6–22; Ex. 702-Nikon S630; Phillips at ¶¶ 0094, 0032, 0008, ¶¶ 0091–93, 0142–43; Anon at 1:59–2:8, Abstract, 5:26–51, 2:64–3:14, 2:9–15; Ex. 702-Panasonic GX1; Ex. 702-Nikon D7000; Jasinski at ¶ 0003, Claim 25, ¶¶ 0018–21; Ex. 702-Liu; Parulski177 at 28:31–57, 5:64–6:22, 34:7–26, 28:16–30, 17:1–13; Walker at ¶¶ 481, 340, 30, 328, 0275; Sarhan at 4:36–5:21, 9:64–10:26, 5:22–44, 1:66–2:26, 4:36–61; Ex. 702-Sony TX55.

Further, the Asserted Claims of the '702 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—*i.e.*, the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe “[a] method for estimating quality of at least one image from a stream of images, for use with a device that comprises in a single enclosure a digital camera module or functionality that comprises at least one optical lens for focusing received light from a scene and an image sensor coupled to at least one optical lens

for capturing an image of the scene; a motion or location sensor for sensing the device motion; and a processor coupled to the image sensor and to the digital camera for receiving data therefrom, the method by the processor comprising use of at least one value from the following QI1 to QI4.” *See, e.g.,* Ex. 702-Nikon D3X at 1[pre]; Ex. 702-Kodak Z990 at 1[pre]; Savakis at 2:5–22, 3:58–4:1, 4:44–63, 4:64–5:29, 2:56–62, Claims 19, 21, 27; Ex. 702-Ayagi at 1[pre]; Shah at Abstract, ¶¶ 0030, 0038, 0039, 0042, 0044, 0052, 0053, 0055, 0056; Ex. 702-Nikon D3100 at 1[pre]; Medioni at 2:46–61, 3:1–14, 3:15–21, 2:1–2, 1:20–27, 1:28–42, 3:22–33; Staudacher238 at Abstract, 1:26–47, 1:48–57, 2:1–6, 2:7–33, 2:34–55, 3:51–59, 3:60–4:8, 4:9–24, 4:25–34; Ramesh at ¶¶ 0004, 0005, 0008, 0021, 0022, 0024, 0025, 0027, 0028; Iwane at 3:40–50, 3:51–60, 4:4–13, 4:39–45, 4:48–5:5, 5:35–51; Kosaka at ¶¶ 0003, 0009, 0011, 0053, 0055, ¶¶ 0049–50, 0051–52, 0061–62; Lu at Abstract, 2:62–3:3, 3:9–14, 5:17–19, 5:30–31, 5:34–36, 6:32–36, 13:13–15; Fredlund at ¶¶ 0034, 0035, 0036, 0037, 0038, 0041, 0042, 0045, 0046, 0048, 0059, 0070, 0071, 0103; Lv at ¶¶ 0006, 0026, 0029, 0031, 0032, 0042, 0044, 0077, 0078, 0079; Ex. 702-Samsung WB700 at 1[pre]; Ex. 702-Canon EOS-1DX at 1[pre]; Ex. 702-Pentax K-5 at 1[pre]; Suzuki at 3:27–36, 3:37–67, 4:1–15, 4:16–33, 4:34–42, Claims 18, 21; Ex. 702-Garcia-Molina at 1[pre]; Cheatle at ¶¶ 0025, 0026, 0027, 0028, 0029, 0019, 0020, 0035; Wu at Abstract, 1:18–20, 2:27–42, 2:56–3:5, 6:20–33, 6:34–40, 6:41–53, 10:20–35; Chen at 1:9–13, 3:52–4:3, 4:6–20, 1:54–57, 1:58–2:3, 4:52–62, Claim 25; Nepomniachtchi at ¶¶ 0062–63, 0181–82, ¶¶ 175, 188, 198, 199, 200, 201, 202, 307; Kim882 at ¶¶ 0002–03, 0047–48, ¶¶ 0006, 0042, 0044, 0050; Ex. 702-Sony A33 at 1[pre]; Koh at 4:8–12, 4:36–37, 5:11–17, 5:36–38, 5:46–51, 5:52–6:5, 6:9–15, 12:24–35; Ex. 702-Nikon S630 at 1[pre]; Phillips at ¶¶ 0142–43, 0146–48, 0149–52, ¶¶ 0162, 0135, 0138, 0139, 0016, 0039; Anon at Abstract, 1:21–32, 1:59–2:8, 2:9–15, 2:16–28, 2:29–44, 2:55–60, 2:64–3:14, 3:15–26, 3:53–4:3, 4:4–23, 4:24–33, 5:53–6:8, 6:42–50, 7:4–14, 10:27–46; Ex. 702-Panasonic GX1 at 1[pre]; Ex.

702-Nikon D7000 at 1[pre]; Jasinski at ¶¶ 0016, 0049, 0050, 0051, 0052, 0053, 0088, ¶¶ 0018–21, 0022–24, 0025–26, 0028–29, 0030–31, 0032–33, 0086–87; Ex. 702-Liu at 1[pre]; Parulski177 at 2:31–41, 13:35–55, 1:26–36, 5:50–63, 1:38–51, 5:64–6:22, 8:45–58, 8:59–64, 8:65–9:12, 9:48–60, 9:61–10:3, 10:21–40, 13:56–14:8, 14:9–21, 14:22–45; Walker at ¶¶ 411, 104, 325, 326, 142, 143, 233, 234, 292, Claim 39; Sarhan at Abstract, 1:66–2:26, 3:17–51, 1:31–48, 4:36–5:21, 1:61–62, 1:23–24; Ex. 702-Sony TX55 at 1[pre].

The prior art references further describe “obtaining a second value (QI2), where value is a measurement of under or over exposure of at least one of a part of image or face exposure.” *See, e.g.,* Ex. 702-Nikon D3X at 1[b]; Ex. 702-Kodak Z990 at 1[b]; Savakis at 8:29–60, 10:42–50, 2:23–36, 6:60–7:9, 7:10–16; Ex. 702-Ayagi at 1[b]; Shah at ¶¶ 0034, 0059, 0069, 0070, 0071, ¶¶ 0072–73, 0078–79; Ex. 702-Nikon D3100 at 1[b]; Medioni at Abstract, 1:20–27, 2:20–30, 3:1–14, 3:15–21, 3:42–45, 4:1–7, 5:57–64, 5:65–6:2, 6:3–5; Staudacher238 at 1:58–67, 2:1–6, 2:7–33, 2:34–55, 2:56–3:2, 4:9–24, 4:25–34, 4:35–50, 5:6–22; Ramesh at ¶¶ 0055, 0023, 0030, 0031, 0004, 0005, 0006; Iwane at 4:4–13, 4:27–30, 4:48–5:5, 5:8–23, 15:51–67; Kosaka at ¶¶ 0039, 0054, 0068, 0069, 0070, 0073, 0077, 0078, 0085, 0086, 0108, ¶¶ 0065–66, 0074–75; Lu at 9:46–51, 9:53–56, 1:8–17, 3:32–42, 6:32–46, 9:38–44, 12:48–55, 3:58–65; Fredlund at ¶¶ 0045, 0047, 0064, 0069, 0081, 0037, 0039, 0044; Lv at ¶¶ 0042, 0045, 0046, 0032, 0041, 0044, 0028, 0035; Ex. 702-Samsung WB700 at 1[b]; Ex. 702-Canon EOS-1DX at 1[b]; Ex. 702-Pentax K-5 at 1[b]; Suzuki at 3:51–63, 12:21–47, 12:50–13:2, 13:21–39, 13:42–59, 13:60–14:9, 14:10–28, 14:29–34, 14:35–55; Ex. 702-Garcia-Molina at 1[b]; Cheatle at ¶¶ 0006, 0011, 0012, 0041, 0042, 0043, ¶¶ 0009–10; Wu at Abstract, 2:27–42, 2:43–48, 3:6–16, 3:34–46, 3:58–67, 4:59–65, 13:4–24; Chen at 1:9–13, 1:15–23, 1:25–50, 7:53–56, 9:50–51; Nepomniachtchi at ¶¶ 186, 350, 351, 352, 353, 354, 343, 346; Kim882 at ¶¶ 0047, 0051, 0052, 0060, 0095, 0096, 0097; Ex. 702-Sony A33 at

1[b]; Koh at 5:27–35, 5:39–45, 4:8–19, 5:46–51, 5:52–6:5, 1:25–30, 4:44–52; Ex. 702-Nikon S630 at 1[b]; Phillips at ¶¶ 0065, 0066, 0031, 0032, 0023, 0024, 0030, 0015, 0029; Anon at 1:59–2:8, 2:9–15, 3:53–4:3, 4:24–33, 5:26–51, 7:64–8:13, 8:15–31, 8:32–43, 9:64–67, 10:27–46, 5:53–6:8, 10:48–50; Ex. 702-Panasonic GX1 at 1[b]; Ex. 702-Nikon D7000 at 1[b]; Jasinski at ¶¶ 0003, 0005, 0089, 0114; Ex. 702-Liu at 1[b]; Parulski177 at 34:7–26, 34:43–49, 34:51–64, 34:65–35:7, 35:53–65, 36:3–9, 36:22–40, 36:41–56, 36:57–61; Walker at ¶¶ 0023, 24, 0151, 0152, 0157, 0174, 0175, 0176, 0180, 0181, 260, 262, 0275, 0276, 0279, 0280, 0281, 0284, 0285, 0286, 0287, 0288, 0289, 0290, 0294, 0295, 0321, 0326, 402, 0430, 439, 479, 480, 481, ¶¶ 0177–79, 0277–78, 0282–83; Sarhan at 11:19–36, 12:1–23, 4:36–5:21, 5:22–44, Abstract, 1:66–2:26, 10:37–48, 10:49–11:18; Ex. 702-Sony TX55 at 1[b].

The prior art references further describe “analyzing the captured image for detecting or recognizing zero or more faces in the picture, calculates properties of at least one of said faces if exist, where said properties are at least one of: looking at camera, smiling, crying, face detection quality, face exposure or subject movement to obtain a third value (QI3).” *See, e.g.*, Ex. 702-Nikon D3X at 1[c]; Ex. 702-Kodak Z990 at 1[c]; Savakis at 8:13–19, 8:21–28, 8:29–60, 8:61–9:5, 9:6–18, 9:22–37, 9:39–46, 9:48–54, 2:23–36, 4:64–5:29, 15:53–59; Ex. 702-Ayagi at 1[c]; Shah at ¶¶ 0036, 0099, 0101, 0102, 0037, 0003, 0001, Abstract; Ex. 702-Nikon D3100 at 1[c]; Medioni at 1:20–27, 1:28–42, 2:20–30, 3:22–33, 4:23–38, 5:57–64, 6:66–7:8, 7:9–11; Staudacher238 at 1:7–15, 1:58–67, 2:1–6, 2:7–33, 2:34–55, 4:9–24, 4:25–34, 4:35–50, 4:51–5:5, 5:6–22; Ramesh at ¶¶ 0062, 0003, 0004, 0060, 0061, 0020, 0024; Iwane at 4:48–5:5, 5:35–51, 5:64–6:8, 6:15–29, 8:40–53, 9:23–29, 11:53–61; Kosaka at ¶¶ 0003, 0054, 0113, 0114, 0117, 0118, 0120, 0121, 0122, 0124, 0134, 0135, ¶¶ 0109–10, 0111–12, 0115–16; Lu at 9:57–62, 9:64–67, 10:2–5, 10:7–15, 10:18–20, 7:20–27, 7:29–31, 3:58–65, 12:48–55; Fredlund at ¶¶ 0065, 0066, 0074, 0076, 0087,

0090, 0099, Claim 22; Lv at Abstract, ¶¶ 0006, 0032, 0035, 0036, 0042, 0043, 0045, 0051; Ex. 702-Samsung WB700 at 1[c]; Ex. 702-Canon EOS-1DX at 1[c]; Ex. 702-Pentax K-5 at 1[c]; Suzuki at 3:37–67, 23:50–24:3, 13:60–14:9, 14:10–28, 14:29–44, 20:9–35, 20:36–55; Ex. 702-Garcia-Molina at 1[c]; Cheatle at ¶¶ 0010, 0033, 0039, 0040, 0041, 0042, 0012, 0009, Claims 18, 13; Wu at Abstract, 4:43–58, 5:53–61, 6:7–19, 6:64–7:5, 7:6–15, 7:16–30, 7:31–46, 7:47–59, 10:4–19, 10:20–35; Nepomniachtchi at ¶¶ 426, 428, 429, 183, 184, 188, 189, 190; Kim882 at Abstract, ¶¶ 0002, 0004, 0006, 0060, 0062, 0063, 0096; Ex. 702-Sony A33 at 1[c]; Koh at 6:9–15, 6:16–27, 6:28–39, 6:40–55, 9:10–21, 11:31–35, 11:36–51, 11:52–58, 9:22–35, 9:36–51, 7:13–25, 7:26–41, 8:56–9:9; Ex. 702-Nikon S630 at 1[c]; Phillips at ¶¶ 0022, 0023, 0024, 0025, 0026, 0027, 0029, 0031; Anon at 1:41–55, 3:27–42, 3:53–4:3, 7:4–14, 8:15–31, 8:65–9:25, 7:43–54, 10:48–50; Ex. 702-Panasonic GX1 at 1[c]; Ex. 702-Nikon D7000 at 1[c]; Jasinski at ¶¶ 0111, 0112, 0113, 0117, 0120, 0092, 0093, 0094; Ex. 702-Liu at 1[c]; Parulski177 at 17:1–13, 17:18–33, 17:34–56, 17:57–18:18, 24:50–63, 24:64–25:13, 25:14–21, 25:22–35, 25:60–26:10, 27:4–13, 27:14–24, 27:25–32; Walker at ¶¶ 0096, 0171, 0172, 0275, 0276, 0279, 0280, 0281, 0284, 0285, 0286, 0287, 290, 186, 30, 0296, ¶¶ 0277–78, 0282–83; Sarhan at 3:17–51, 4:36–5:21, 5:22–44, 1:31–48, 1:49–60, 12:1–23; Ex. 702-Sony TX55 at 1[c].

The prior art references further describe “estimating a forth weight (c4) associated with the forth value.” *See, e.g.*, Ex. 702-Nikon D3X at 1[e]; Ex. 702-Kodak Z990 at 1[e]; Savakis at 4:44–63, 4:64–5:29, 2:45–55, 9:6–20, 10:29–41, 11:30–39, 11:43–56; Ex. 702-Ayagi at 1[e]; Ex. 702-Nikon D3100 at 1[e]; Staudacher238 at 2:34–55, 4:25–34, 4:35–50, 4:51–5:5, 5:6–22, 2:1–6, 2:7–33, Abstract; Ramesh at ¶¶ 0030, 0041, 0006, 0039, 0040, 0051, 0062, Claim 10; Iwane at 4:48–5:5; Kosaka at ¶¶ 0058, 0065, 0098, 0105, 0107, 0122, 0134, 0160; Lu at 4:50–53, 1:63–2:2, 11:8–10, Claim 4; Lv at ¶¶ 0042, 0043, 0044, 0045, 0046, 0047, 0048; Ex. 702-Samsung WB700 at

1[e]; Ex. 702-Canon EOS-1DX at 1[e]; Ex. 702-Pentax K-5 at 1[e]; Suzuki at 8:55–9:8, 9:9–27, 9:28–47, 7:5–18, 7:19–33, 6:33–56, 17:65–18:12, 18:13–46; Ex. 702-Garcia-Molina at 1[e]; Cheatle at ¶¶ 0040, 0041, 0043, 0004, 0011, 0012, 0013, 0042; Wu at 13:56–14:3, 14:4–21, 14:22–26, 11:7–16, 13:39–55, 7:60–8:20, 8:21–30; Chen at 8:52–61, 7:30–33, 9:50–51, 1:58–2:3, 2:17–39, Claim 14; Nepomniachtchi at ¶¶ 111, 125, 300, 301, 330, 354, 407, 409; Ex. 702-Sony A33 at 1[e]; Ex. 702-Nikon S630 at 1[e]; Phillips at ¶¶ 0023, 0026, 0030, 0032, 0128, 0129, 0152; Anon at 3:53–4:3, 4:4–23, 5:26–51, 8:32–35, 9:26–34, 9:56–63, 8:36–43; Ex. 702-Panasonic GX1 at 1[e]; Ex. 702-Nikon D7000 at 1[e]; Jasinski at ¶¶ 0114, 0120, 0121, 0122, 0126, 0032, ¶¶ 0028–29, 0030–31, Abstract, Claim 25; Ex. 702-Liu at 1[e]; Parulski177 at 25:22–35, 31:8–17, 32:5–17, 36:57–61, 23:33–51, 27:61–28:2, 33:40–52, 33:53–34:6; Walker at ¶¶ 292, 0296, 319, 322, 428, 429, 430; Sarhan at 9:19–29, 9:64–10:14, 10:37–48, 3:8–11, 8:45–58, 3:12–16, 5:45–63, 3:17–51; Ex. 702-Sony TX55 at 1[e].

The prior art references further describe “to select, based on values QI1, QI2, QI3, QI4, at least one appropriate suggestion from a pre-stored table of suggestions of how a user of the system may cause at least on said value to be above or below a threshold and to present said appropriate suggestion to the user.” *See, e.g.*, Ex. 702-Nikon D3X at 1[f]; Ex. 702-Kodak Z990 at 1[f]; Savakis at 2:56–62, 12:29–39, 13:18–33, 15:53–59, 2:5–22, 2:23–36, 2:45–55, Claim 1; Ex. 702-Ayagi at 1[f]; Shah at ¶¶ 0086, 0087, 0089, 0090, 0091, 0092, 0093, 0094, 0095, 0096, 0004, 0032, 0040; Ex. 702-Nikon D3100 at 1[f]; Staudacher238 at Abstract, 2:56–3:2, 3:3–8, 3:9–23, 3:24–36, 3:37–50, 5:43–55, 5:56–6:12; Ramesh at ¶¶ 0030, 0041, 0027, 0029, 0040, 0052, 0008, 0025; Iwane at 4:39–45, 5:35–51, 5:52–57, 6:9–14, 6:15–29, 7:58–64, 8:23–26, 14:1–2; Kosaka at ¶¶ 0008, 0089, 0098, 0099, 0146, 0154, 0155, 0157, 0158; Lu at 6:32–46, 11:5, 2:25–27, 3:58–65, 3:66–4:3, 4:50–53, 5:5–13, 12:9–11, 12:28–37; Fredlund at ¶¶ 0085, 0086, 0087, 0088, 0089, 0071, 0072, 0073,

0074, 0075, 0076, 0077, 0078, 0100, 0011, 0001, 0002, 0003, 0004, ¶¶ 0013–16, 0017–19, Abstract; Lv at ¶¶ 0008–09, ¶¶ 0032, 0042, 0044, 0045, 0046, 0078; Ex. 702-Samsung WB700 at 1[f]; Ex. 702-Canon EOS-1DX at 1[f]; Ex. 702-Pentax K-5 at 1[f]; Suzuki at 4:28–33, 7:34–43, 8:33–54, 9:28–47, 19:60–65, 20:36–55, 20:56–67, 23:26–30; Ex. 702-Garcia-Molina at 1[f]; Cheatle at ¶¶ 0004, 0005, 0028, 0029, 0033, 0040, 0044, 0045; Wu at Abstract, 2:27–42, 5:53–61, 5:62–6:6, 9:6–14, 9:15–30, 9:39–43, 11:7–16, 11:17–26; Nepomniachtchi at ¶¶ 0028–29, ¶¶ 125, 129, 130, 302, 303, 332, 407; Kim882 at ¶¶ 0014, 0024, 0088, 0089, 0099, 0100, 0101, 0102, 0077, 0006, ¶¶ 0085–86; Ex. 702-Sony A33 at 1[f]; Koh at 11:52–61, 11:62–12:12, 12:13–23, 12:24–35, 8:56–9:9, 13:35–45, 13:46–55, 13:56–14:3, 14:4–6, 14:7–32, 14:34–46, 12:36–56, 12:57–60, 1:53–60, 1:61–2:4, 2:5–18, 2:48–58, 2:59–67; Ex. 702-Nikon S630 at 1[f]; Phillips at ¶¶ 0082, 0083, 0015, 0022, 0026, 0027, 0029, 0030; Anon at 1:59–2:8, 2:29–44, 4:4–23, 5:26–51, 5:53–6:8, 6:42–50, 7:15–29, 7:30–41, 7:43–54, 7:55–63, 8:65–9:25; Ex. 702-Panasonic GX1 at 1[f]; Ex. 702-Nikon D7000 at 1[f]; Jasinski at ¶¶ 0073, 0088, 0089, 0090, 0031, 0063, 0135, Claim 24; Ex. 702-Liu at 1[f]; Parulski177 at 23:33–51, 24:64–25:13, 25:14–21, 25:22–35, 25:37–44, 25:46–59, 25:60–26:10, 27:25–32, 37:23–40, 38:30–34, 36:62–37:5, 37:6–22, 37:44–52; Walker at ¶¶ 14, 25, 0030, 0031, 173, 174, 0188, 231, 232, 0275, 0286, 313, 319, 320, 326, 375; Sarhan at 6:13–21, 6:52–67, 9:30–51, 9:64–10:14, 10:49–11:18, 4:36–5:21; Ex. 702-Sony TX55 at 1[f].

Other examples of these concepts are cited in the attached charts for the above references. See Appendix A, Exhibits 702-Anon through 702-Wu. It would have been known and simple to take prior art for real time assessment of picture quality by comparison with similar objects, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving picture quality. *Id.*

Samsung is not aware of any secondary considerations supporting non-obviousness of the '702 Patent claims. To the extent SnapAid seeks to introduce any alleged secondary considerations in the future, Samsung reserves the right to respond at that time.

F. Invalidity Under Section 112

Samsung provides an identification of the limitations of the '702 Patent that are invalid based on indefiniteness under pre-AIA 35 U.S.C. § 112 ¶ 2, or enablement or written description under pre-AIA 35 U.S.C. § 112 ¶ 1. These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1, 3–20 of the '702 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). For example, as applied in SnapAid’s Infringement Contentions, the terms “under or over exposure of at least one of a part of image or face exposure,” “face detection quality, face exposure or subject movement,” “obstruction of at least one optical lens,” “recognition value,” “detection value,” “aesthetic quality of image based on composition,” “the first or second value is respectively associated with an estimated error in the first or second values,” “wherein second value (QI2) associated with aesthetic quality is partially based on detected objects,” and “wherein second value (QI2) associated with aesthetic quality is partially” are indefinite because they are not only subjective but also do not have a meaning that can be clearly determined from the patent, and thus fail to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1, 3–20 of the '702 Patent are invalid under § 112 ¶ 1, because the specification as filed does not contain a sufficient written description supporting those claims. For

example, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of SnapAid's contentions. For example, Asserted Claims 1, 3–20 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following reasons: the '702 Patent fails to provide an adequate written description of the phrases “grading the image quality according to, or based on, the total value,” “wherein the first value Q11 is estimated according to, or based on, the recognition value,” “wherein Q11 is estimated according to, or based on, the detection value of at least one face detection,” “a time-dependent confidence level,” “total value is above a threshold,” and “calculating a total image quality according to, or based on, the total value” as applied in SnapAid's Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the '702 Patent. The subject matter of these claims, as described above, is not sufficiently shown in the specification of the '702 Patent. The subject matter of these claims, as described above, is not sufficiently enabled because the '702 patent specification does not teach one skilled in the art how to make and use the alleged invention. For example, the '702 Patent fails to enable the following and thus, Asserted Claims 1, 3–20 of the '702 Patent are invalid: “a time-dependent confidence level.” The foregoing phrase is not described in such a way that one of ordinary skill in the art could implement it to achieve the results sought by the individual named on the face of the '702 Patent as the inventor. The foregoing phrases are not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '702 Patent was in possession of the claimed subject matter. The Asserted Claims of the '702 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on SnapAid in accordance with the Court’s Scheduling Order.

G. Invalidity Under Section 101

The asserted claims of the ’702 patent are invalid under *Alice Corp. Pty. v. CLS Bank Int’l*, 573 U.S. 208 (2014) because they are directed to patent-ineligible subject matter and fail to include an “inventive concept,” *i.e.*, some additional element or combination of elements “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” 573 U.S. 208, 217–18 (2014).

The asserted claims of the ’702 patent are directed to a patent-ineligible concept—namely, the abstract idea of assessing picture quality and suggesting that the photographer take another picture after making an adjustment, such as to the photographer’s location or angle. The claims are directed to a process that photographers conduct in their minds—assessing a picture’s quality and then taking a new picture to try to get a better picture—which renders them abstract under Federal Circuit case law holding that “methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas—the ‘basic tools of scientific and technological work’ that are open to all.” *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)); *PersonalWeb Techs. LLC v. Google LLC*, 8 F.4th 1310, 1316 (Fed. Cir. 2021); *Longitude Licensing Ltd. v. Google LLC*, 2025 WL 1249136, at *2 (Fed. Cir. Apr. 30, 2025); *Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021); *Broadband iTV, Inc. v. Amazon.com, Inc.*, 113 F.4th 1359, 1371 (Fed. Cir. 2024); *USC IP P’ship, L.P. v. Meta Platforms, Inc.*, 2023 WL 5606977, at *2 (Fed. Cir. Aug. 30, 2023). This is further confirmed by the specification, which provides that

the claimed inventions “utilize camera hardware ... to evaluate pictures taken in real time, and actively assist in obtaining the best picture given the circumstances at hand.” ’702 Pat., 2:23-28.

The asserted claims of the ’702 patent also lack any inventive concept and merely implement the abstract idea of taking a better picture using generic camera components—a “digital camera module,” an “optical lens,” an “image sensor,” a “motion or location sensor” and a “processor.” ’702 Pat., Cl. 1. The inventor of the ’702 patent does not purport to have invented these components or described or claimed any specific improvement in their functionality. To the contrary, the specification confirms that these are conventional components. *See, e.g.*, ’702 Pat., 6:29-30 (“Any suitable input device, such as but not limited to a sensor, may be used ...”), 6:34-36 (“Any suitable processor may be employed to compute or generate information as described herein ...”). That these components are known and conventional is further demonstrated by their disclosure throughout the prior art disclosed in these contentions. Further, the dependent claims similarly recite additional generic limitations that fail to add any inventive concept, and are therefore patent-ineligible. *See In re Bd. of Trs. of Leland Stanford Junior Univ.*, 991 F.3d 1245, 1250 (Fed. Cir. 2021); *Braemar Mfg., LLC v. ScottCare Corp.*, 816 F. App’x 465, 470 (Fed. Cir. 2020); *In re TLI Commc’ns LLC Pat. Litig.*, 823 F.3d 607, 611 (Fed Cir. 2016). Accordingly, the asserted claims of the ’702 patent are patent-ineligible under § 101.

VIII. INVALIDITY CONTENTIONS FOR THE ’325 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the “References Cited” on the face of the ’325 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Samsung may rely upon that prior art, including the “References Cited” on the face of the ’325 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of

ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Samsung reserves the right to rely upon additional prior art, information, and/or knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

The claim charts attached in Appendix A as Exhibits 325-Aisaka through 325-Wu identify where each limitation of the Asserted Claims of the '325 Patent is found in the prior art.

C. Identification of the Prior Art

Based on SnapAid's Preliminary Infringement Contentions, Samsung identifies prior art below and in Appendix A as Exhibits 325-Aisaka through 325-Wu, which contain charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits 325-Aisaka through 325-Wu and below, Samsung has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Samsung notes that it has applied the prior art in accordance with SnapAid's improper assertions of infringement and improper applications of the claims. Samsung does not agree with SnapAid's application of the claims and denies infringement.

Samsung further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Samsung reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Samsung has also identified exemplary obviousness combinations further below.

'325 Patent Prior Art Patents / Patent Applications				
Ex. No.	Patent / Publication No.	Country of Origin	Filing Date	Date of Issue / Publication
Ex. 325-Aisaka	U.S. Patent Pub. No. 2010/0246939 A1 ("Aisaka")	U.S.	Aug. 26, 2009	Sept. 30, 2010
Ex. 325-Alhadeef	U.S. Patent No. 8,009,198 ("Alhadeef")	U.S.	Apr. 22, 2004	Aug. 30, 2011
Ex. 325-Anon	U.S. Patent No. 8,508,622 ("Anon")	U.S.	Jan. 18, 2011	Aug. 13, 2013
Ex. 325-Cheatle	U.S. Patent Pub. No. 2002/0110286 A1 ("Cheatle")	U.S.	Jan. 9, 2002	Aug. 15, 2002
Ex. 325-Chen	U.S. Patent No. 6,810,083 ("Chen")	U.S.	Nov. 16, 2001	Oct. 26, 2004
Ex. 325-Fredlund	U.S. Patent Pub. No. 2011/0216209 A1 ("Fredlund")	U.S.	Mar. 3, 2010	Sept. 8, 2011
Ex. 325-Fukuda	U.S. Patent Pub. No. 2010/0177207 A1 ("Fukuda")	U.S.	Jan. 11, 2010	July 15, 2010
Ex. 325-Iwane	U.S. Patent No. 7,660,519 ("Iwane")	U.S.	Aug. 28, 2006	Feb. 9, 2010
Ex. 325-Jasinski	U.S. Patent Pub. No. 2012/0201427 A1 ("Jasinski")	U.S.	Feb. 4, 2011	Aug. 9, 2012
Ex. 325-Kim397	U.S. Patent Pub. No. 2006/0260397 A1 ("Kim397")	U.S.	May 12, 2006	Nov. 23, 2006
Ex. 325-Kim882	U.S. Patent Pub. No. 2011/0187882 A1 ("Kim882")	U.S.	Sept. 10, 2010	Aug. 4, 2011
Ex. 325-Koh	U.S. Patent No. 7,973,848 ("Koh")	U.S.	Mar. 31, 2008	July 5, 2011
Ex. 325-Kosaka	U.S. Patent Pub. No. 2004/0012682 A1 ("Kosaka")	U.S.	July 2, 2003	Jan. 22, 2004
Ex. 325-Lu	U.S. Patent No. 7,590,287 ("Lu")	U.S.	Nov. 6, 2002	Sept. 15, 2009
Ex. 325-Lv	U.S. Patent Pub. No. 2013/0286161 A1 ("Lv")	U.S.	Apr. 25, 2012	Oct. 31, 2013

Ex. 325-Marchesotti	U.S. Patent Pub. No. 2012/0269441 A1 (“Marchesotti”)	U.S.	Apr. 19, 2011	Oct. 25, 2012
Ex. 325-Meguro	U.S. Patent Pub. No. 2009/0251549 A1 (“Meguro”)	U.S.	Aug. 23, 2007	Oct. 8, 2009
Ex. 325-Mori	U.S. Patent Pub. No. 2011/0080494 A1 (“Mori”)	U.S.	Sept. 30, 2010	Apr. 7, 2011
Ex. 325-Parulski177	U.S. Patent No. 6,539,177 (“Parulski177”)	U.S.	July 17, 2001	Mar. 25, 2003
Ex. 325-Phillips	U.S. Patent Pub. No. 2005/0226490 A1 (“Phillips”)	U.S.	Mar. 30, 2005	Oct. 13, 2005
Ex. 325-Pore	U.S. Patent Pub. No. 2009/0290037 A1 (“Pore”)	U.S.	May 22, 2008	Nov. 26, 2009
Ex. 325-Ramesh	U.S. Patent Pub. No. 2009/0296989 A1 (“Ramesh”)	U.S.	May 28, 2009	Feb. 28, 2006
Ex. 325-Sarhan	U.S. Patent No. 9,313,463 (“Sarhan”)	U.S.	June 9, 2010	Apr. 12, 2016
Ex. 325-Savakis	U.S. Patent No. 6,671,405 (“Savakis”)	U.S.	Dec. 14, 1999	Dec. 30, 2003
Ex. 325-Shah	U.S. Patent Pub. No. 2011/0205383 A1 (“Shah”)	U.S.	Feb. 24, 2010	Aug. 25, 2011
Ex. 325-Staudacher	U.S. Patent Pub. No. 2012/0105662 A1 (“Staudacher”)	U.S.	Oct. 29, 2010	May 3, 2012
Ex. 325-Steinberg694	U.S. Patent Pub. No. 2012/0229694 A1 (“Steinberg694”)	U.S.	Sept. 25, 2011	Sept. 13, 2012
Ex. 325-Takeuchi	U.S. Patent Pub. No. 2010/0149361 A1 (“Takeuchi”)	U.S.	Oct. 14, 2009	June 17, 2010
Ex. 325-Wu	U.S. Patent No. 9,036,069 (“Wu”)	U.S.	Sept. 12, 2012	May 19, 2015
Ex. 325-Ayagi	JP Patent No. 4,135,100 (“Ayagi”)	Japan	Mar. 22, 2004	Aug. 20, 2008

'325 Patent Prior Art NPL References				
Ex. No.	Title	Date of Publication	Author	Publisher

Ex. 325-Garcia-Molina	Garcia-Molina, H., Database Systems: The Complete Book (2d ed. 2009) (“Garcia-Molina”)	2009	Garcia-Molina, H. et al.	Pearson Prentice Hall
Ex. 325-Liu	T. Liu, Image Quality Assessment Using Multi-Method Fusion (“Liu”)	May 2013	T. Liu	IEEE Transactions on Image Processing

'325 Patent Prior Art Products/Systems		
Ex. No.	System/Product	Public Disclosure Date
Ex. 325-Canon EOS-1DX	Canon EOS-1DX Digital Camera	March 2012
Ex. 325-Kodak Z990	Kodak Easyshare Max Z990 Digital Camera	May 2011
Ex. 325-Nikon D3100	Nikon D3100 Digital Camera	August 2010
Ex. 325-Nikon D3X	Nikon D3X Digital Camera	December 2008
Ex. 325-Panasonic GX1	Panasonic Lumix DMC-GX1 Digital Camera	January 2012
Ex. 325-Pentax K-5	Pentax K-5 SLR Digital Camera	December 2010
Ex. 325-Samsung WB700	Samsung WB700 Digital Camera	December 2010
Ex. 325-Sony A33	Sony A33 Digital Camera	October 2010

'325 Patent Additional Prior Art/Background Art
U.S. Patent Pub. No. 2010/0214216 A1 (“Nasiri”)
U.S. Patent Pub. No. 2008/0013851 A1 (“Ishiwata”)
U.S. Patent No. 8,264,553 (“Joshi”)
U.S. Patent Pub. No. 2011/0150447 A1 (“Li”)
U.S. Patent Pub. No. 2011/0222724 A1 (“Yang”)
U.S. Patent Pub. No. 2007/0283269 A1 (“Obrador”)
U.S. Patent No. 8,682,097 (“Steinberg”)

U.S. Patent No. 5,831,670 (“Suzuki”)
U.S. Patent Pub. No. 2012/0133746 A1 (“Bigioi”)
U.S. Patent Pub. No. 2013/0076856 A1 (“Wakabayashi”)
U.S. Patent Pub. No. 2008/0192129 A1 (“Walker”)

Discovery is ongoing, and Samsung reserves the right to amend its identification of prior art herein based on additional investigation and third-party discovery.

D. Anticipation

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’325 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by primary references as set forth below and in the attached claim charts. The prior art references or systems listed herein and in the accompanying claim charts may disclose the elements of the Asserted Claims explicitly and/or inherently. To the extent SnapAid asserts that any of the prior art references charted in the attached exhibits fail to explicitly or inherently disclose any element of the Asserted Claims, Samsung contends it would have been obvious to modify such reference to include the allegedly missing element, in view of the knowledge of one of ordinary skill in the art, the admitted prior art of the Asserted Patents, and/or in combination with any of the other prior art references identified in the Exhibits for that respective patent.

E. Obviousness

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’325 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Samsung contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted ’325 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are

provided in the alternative to Samsung’s anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

One of the Following Primary References	In Combination with One or More of the Following References
Aisaka	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Alhadeef	Aisaka, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Anon	Aisaka, Alhadeef, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Ayagi	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Cheatle, Chen, Fredlund,

	Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Canon EOS-1DX	Aisaka, Alhadeh, Anon, Ayagi, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Cheatle	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Chen	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Fredlund	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177,

	Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Fukuda	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Garcia-Molina	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Iwane	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Jasinski	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Kim397	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund,

	Fukuda, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Kim882	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Kodak Z990	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Koh	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Kosaka	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177,

	Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Liu	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Lu	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Lv	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Marchesotti	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis,

	Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Meguro	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Mori	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Nikon D3100	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Nikon D3X	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Panasonic GX1	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund,

	Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Parulski177	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Pentax K-5	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Phillips	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Pore	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips,

	Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Ramesh	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Samsung WB700	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Sarhan	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Savakis	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Shah	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane,

	Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Sony A33, Staudacher, Steinberg694, Takeuchi, Wu
Sony A33	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Staudacher, Steinberg694, Takeuchi, Wu
Staudacher	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Steinberg694, Takeuchi, Wu
Steinberg694	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Takeuchi, Wu
Takeuchi	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips,

	Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Wu
Wu	Aisaka, Alhadeh, Anon, Ayagi, Canon EOS-1DX, Cheatle, Chen, Fredlund, Fukuda, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon D3100, Nikon D3X, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Staudacher, Steinberg694, Takeuchi

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have understood that each of these references are in the same field of endeavor, namely real time assessment of picture quality. *See, e.g.*, Ex. 325-Nikon D3X; Takeuchi at ¶¶ 0108–09, Abstract, ¶¶ 0166, 0147, 0121; Ex. 325-Kodak Z990; Staudacher at ¶¶ 0017, 0019, 0025, 0006, 0029; Mori at ¶¶ 0010, 0035, 0055, 0095, Abstract; Kim397 at ¶¶ 0014, 0044, 0026, ¶¶ 0025–26, Abstract; Shah at ¶¶ 0034, 0055, ¶¶ 0072–74, 0072–73, 0071–72; Ex. 325-Ayagi; Savakis at 5:30–61, 4:6–26, 2:45–55, Claims 18, 27; Aisaka at ¶¶ 371, 304, 11, ¶¶ 0272–73, 0304–05; Ex. 325-Nikon D3100; Steinberg694 at ¶¶ 0176, 0203, 0017, 0177, 0127; Marchesotti at ¶¶ 0026, 0016, 0025, 0079; Ramesh at ¶¶ 24, 25, 3; Kosaka at Abstract, ¶¶ 0067, 0157, 0006, 0162, 0077; Iwane at 4:4–13, 15:17–24, 1:30–42, 2:4–21, 1:53–2:3; Alhadeh at 14:16–30, 15:49–62, 1:49–59, 3:37–48, 14:49–63; Lu at 5:66–6:7, 3:4–14, 3:20–31, 12:28–44, 9:29–44; Fredlund at ¶¶ 0048, 0064, 0069, 0073, ¶¶ 0063–64; Lv at ¶¶ 0083, 0046, 0042, 0027, 0032; Ex. 325-Samsung WB700; Ex. 325-Canon EOS-1DX; Ex. 325-Pentax K-5; Pore at ¶¶ 0037, 0048, 0047, ¶¶ 0018–19, 0110–12; Ex. 325-Garcia-Molina; Cheatle at Abstract, ¶¶ 0019, 0017, 0040, 0004, 0016; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Chen at Abstract, 1:25–50, 4:6–20, 1:16–23, 4:21–51; Kim882

at ¶ 0051, Abstract, ¶¶ 0103–04, 0089–90, 0052–53; Ex. 325-Sony A33; Koh at 5:52–6:5, 7:26–37, 12:24–35, 4:8–19, 2:48–62; Fukuda at ¶¶ 0141–42, 0149–50, 0065–66, ¶¶ 0142, 0066; Meguro at ¶¶ 0021, 0006, 0058, 0032, Abstract; Phillips at ¶¶ 0091, 0080, 0119, 0036, ¶¶ 0091–93; Anon Claim 1, 1:59–2:8, 10:8–25, 5:26–51, Abstract; Ex. 325-Panasonic GX1; Jasinski at ¶¶ 0003, 0131, 0088, Claim 1; Ex. 325-Liu; Parulski177 at Abstract, 34:27–41, 35:8–23, 32:47–33:3, 28:16–30, Claim 20; Sarhan at 4:36–5:21, 9:64–10:26, 5:22–44, 1:66–2:26, 1:31–48.

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, picture quality. *See, e.g.*, Ex. 325-Nikon D3X; Takeuchi at ¶¶ 0108–09, 0012–13, ¶¶ 0282, 0121, Abstract; Ex. 325-Kodak Z990; Staudacher at ¶¶ 0017, 0009, 0011, 0025; Mori at ¶¶ 0010, 0025, Abstract, ¶¶ 0102–03, 0073–74; Kim397 at ¶¶ 0025–26, 0026–27, ¶¶ 0026, 0005, 0028; Shah at ¶¶ 0034, 0055, 0033, 0046, ¶¶ 0072–74; Ex. 325-Ayagi; Savakis at 5:30–61, 3:58–4:5, 4:64–5:29, 4:44–63, Claim 18; Aisaka at ¶¶ 371, 304, 11, ¶¶ 0304–05, 0054–55; Ex. 325-Nikon D3100; Steinberg694 at ¶¶ 0203, 0176, 0073, 0177, 0091; Marchesotti at ¶¶ 0026, 0016, 0079, 0048; Ramesh at ¶¶ 24, 0020, 25, 7; Kosaka at ¶¶ 0099, 0006, 0157, 0067, 0089; Iwane at 4:4–13, 1:30–42, Abstract, 5:35–51, 4:48–5:5; Alhadeif at 14:16–30, 14:49–63, 12:66–13:18, 4:43–55, 13:42–55; Lu at 5:66–6:7, 3:4–14, 1:44–59, 9:29–44, 6:22–28; Fredlund at ¶¶ 0048, 0064, 0034, 0042, ¶¶ 0063–64; Lv at ¶¶ 0083, 0046, 0042, 0032, 0045; Ex. 325-Samsung WB700; Ex. 325-Canon EOS-1DX; Ex. 325-Pentax K-5; Pore at ¶¶ 0037, 0048, 0047, ¶¶ 0018–19, 0004–05; Ex. 325-Garcia-Molina; Cheatle at ¶¶ 0019, 0040, 0017, 0004, 0007; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Chen at 1:25–50, 4:6–20, 3:52–4:3, 1:16–23; Kim882 at ¶¶ 0051, 0052, Abstract, ¶¶ 0052–53, 0093–94; Ex. 325-Sony A33; Koh at 5:52–6:5, 14:47–61, 5:36–51, 4:8–19, 4:13–24; Fukuda at ¶¶ 0141–42, 0065–66, 0055–56, ¶¶ 0066, 0014; Meguro at ¶¶ 0021, 0006, 0071, Abstract; Phillips at ¶¶ 0091, 0094, 0032, ¶¶ 0091–

93, Abstract; Anon Claims 1, 2, 1:59–2:8, 5:26–51, Abstract; Ex. 325-Panasonic GX1; Jasinski at ¶¶ 0003, 0082, 0012, Claim 1; Ex. 325-Liu; Parulski177 at 32:47–33:3, 28:16–30, 34:27–41, 34:7–26, Claim 20; Sarhan at 4:36–5:21, 9:64–10:26, 5:22–44, 1:66–2:26, 4:36–61.

Further, the Asserted Claims of the '325 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—*i.e.*, the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe “[a] method for estimating quality of at least one image from a stream of images, for use with a device that comprises in a single enclosure a digital camera module or functionality that comprises at least one optical lens for focusing received light from a scene and an image sensor coupled to at least one optical lens for capturing an image of the scene; a motion or location sensor for sensing the device motion; and a processor coupled to the image sensor and to the digital camera for receiving data therefrom, the method by the processor comprising use of at least one value and weight.” *See, e.g.*, Ex. 325-Nikon D3X at 1[pre]; Takeuchi at ¶¶ 0033, 0107, 0121, 0156, ¶¶ 0108–09, 0111–12; Ex. 325-Kodak Z990 at 1[pre]; Staudacher at Abstract, ¶¶ 0005, 0006, 0008, 0009, 0010, 0016, Claim 12; Mori at Abstract, ¶¶ 0010, 0025, 0028, 0029, 0030, 0031, 0032, 0033, 0035, 0036, 0069, 0070, 0105, 0106, 0107; Kim397 at ¶¶ 0005, 0006, 0014, 0024, 0029, 0044, ¶¶ 0025–26; Shah at Abstract, ¶¶ 0002, 0038, 0042, 0044, 0052, 0053, 0055, 0056, 0059; Ex. 325-Ayagi at 1[pre]; Savakis at 4:29–43, 4:44–63, 4:64–5:29, 5:30–61, 2:45–55, 2:56–62, 15:53–59, 2:5–22; Aisaka at ¶¶ 14, 18, 65, 66, 67, 109, 110, 111, 112, 113, 114, 115, 0126, 0127, 268, 269, ¶¶ 0054–55, 0056–57, 0124–25; Ex. 325-Nikon D3100 at 1[pre]; Steinberg694 at ¶¶ 0105, 0106, 0108, 0015, 0098, 0099; Marchesotti at ¶¶ 0002, 0014, 0031, 0035, 0065, 0112; Ramesh at ¶¶ 4, 5, 7, 21, 24, 25; Kosaka at ¶¶ 0003, 0005, 0039, 0046, ¶¶ 0013–16, 0047–48, 0049–51; Iwane at 3:40–50, 3:51–

60, 4:4–13, 1:30–42, 3:12–13, 5:35–51, 4:27–30; Alhadeef at Abstract, 1:25–30, 3:14–15, 3:24–26, 4:63–67, 5:1, 5:4–8, 3:53–64, 3:65–4:3, 4:4–6, 5:39–53, 5:54–67, 6:1–6, 12:17–19; Lu at 1:8–17, 2:62–3:3, 3:32–42, 6:66–7:2, 7:16–27, 9:5, 9:17–19, 11:5, 13:13–20; Fredlund at ¶¶ 0034, 0035, 0036, 0037, 0038, 0042, 0048, 0050; Lv at ¶¶ 0002, 0006, 0026, 0029, 0031, 0032, 0044, 0077; Ex. 325-Samsung WB700 at 1[pre]; Ex. 325-Canon EOS-1DX at 1[pre]; Ex. 325-Pentax K-5 at 1[pre]; Pore at ¶¶ 0004–05, 0018–19, ¶¶ 0024, 0027, 0028, 0037, 0117; Ex. 325-Garcia-Molina at 1[pre]; Cheatle at ¶¶ 0025, 0026, 0027, 0028, 0029; Wu at Abstract, 4:25–42, 6:20–33, 6:34–40, 6:41–53, 7:60–8:20, 8:21–30, 9:55–10:3, 10:4–14; Chen at 1:9–13, 3:35–51, 1:15, 3:52–4:3, 1:16–23, 4:4–5, 4:21–51, 1:54–57, 4:52–62, 1:58–2:3, 4:63–5:3, 1:25–50, 4:6–20, 7:57–8:7, Claim 25; Kim882 at Abstract, ¶¶ 0002, 0042, 0047, 0050, 0051, 0092, ¶¶ 0044–45, 0048–49, 0059–60, 0093–94; Ex. 325-Sony A33 at 1[pre]; Koh at 4:36–37, 5:36–51, 5:52–6:5, 6:9–22, 11:31–35, 11:36–51, 11:52–61; Fukuda at ¶¶ 0051, 0066, 0002, 0014, 0122, ¶¶ 0052–53, 0055–56, 0058–59, 0061–62, 0064–65, 0015–16, 0123–24, Abstract; Meguro at Abstract, ¶¶ 0001, 0019, 0020, 0021, 0022, 0023, 0024; Phillips at Abstract, ¶¶ 0015, 0016, 0039, 0134, 0135, 0142, ¶¶ 0146–47, 0148–51; Anon at Abstract, 1:21–32, 1:59–2:8, 2:64–3:14, 3:15–26, 3:53–4:3, 4:24–33, 5:53–6:8, 10:2–7, 10:8–25, 10:27–46, 1:7–10; Ex. 325-Panasonic GX1 at 1[pre]; Jasinski at ¶¶ 0002, 0003, 0048, 0050, 0051, 0052, 0053, 0084; Ex. 325-Liu at 1[pre]; Parulski177 at 5:50–63, 5:64–6:2, 8:53–64, 9:13–27, 10:57–64, 11:3–18; Sarhan at 1:66–2:26, 3:17–51, 4:36–5:21, 10:37–48, 13:5–16, 13:17–23, 1:31–48, 1:49–62.

The prior art references further describe “obtaining a first value (QI1) responsive to the device motion from at least one motion or location sensor.” *See, e.g.*, Ex. 325-Nikon D3X at 1[a]; Takeuchi at Abstract, ¶¶ 0002–04, 0005–06, 0035–38, ¶¶ 0007, 0090, 0033, 0172, 0173, 0174; Ex. 325-Kodak Z990 at 1[a]; Staudacher at ¶¶ 0009, 0018, 0005, 0006, 0010, 0020, 0016, 0017, 0001;

Mori at ¶¶ 0069, 0031, 0035, ¶¶ 0070–71, Abstract; Kim397 at ¶¶ 0005, 0006, 0007, 0029, 0033, 0044, ¶¶ 0042–43, Abstract; Shah at ¶¶ 0038, 0041, 0042, 0043, 0044, 0059, 0035, 0002, 0052, 0053, 0065, 0066, ¶¶ 0072–73; Ex. 325-Ayagi at 1[a]; Savakis at 4:44–63, 4:64–5:29, 5:30–61, 5:66–6:10, 6:56–58, 6:60–7:9, 7:10–16, 8:13–19, 8:21–28, 8:29–60, 8:61–9:5, 9:6–18; Aisaka at ¶¶ 59, 61, 62, 64, 114, 115, 268, 387; Ex. 325-Nikon D3100 at 1[a]; Steinberg694 at ¶¶ 0091, 0092, 0100, 0136, 0163, 0167, ¶¶ 0137–38; Marchesotti at ¶¶ 0027, 0067, 0068, 0071, 0072, 0073, ¶¶ 0069–70; Ramesh at ¶¶ 4, 5, 6, 26, 29, 30, 31; Kosaka at ¶¶ 0066, 0070, 0073, 0076, 0079, 0080, 0083, 0084, 0085, 0063, 0071, 0077, ¶¶ 0074–75; Iwane at 3:40–50, 3:51–60, 4:4–13, 4:27–30, 15:1–10, 15:17–24, 15:26–32; Alhadeef at 7:38–43, 8:15–29, 9:15–17, 9:28–34, 9:35–45, 9:59–64, 9:65–10:3, 10:4–11, 10:12–21, 12:17–19, 14:16–30, 14:46–48, 3:53–64, 3:65–4:3, 4:4–12; Lu at 3:32–42, 3:43–57, 8:23–33, 8:40–47, 9:17–19, 9:29–37, 12:48–55; Fredlund at ¶¶ 0099, 0101, 0075, 0078, 0047, 0035, 0001, 0017; Lv at ¶¶ 0026, 0027, 0029, 0042, 0049, 0050, 0051, 0079, 0083; Ex. 325-Samsung WB700 at 1[a]; Ex. 325-Canon EOS-1DX at 1[a]; Ex. 325-Pentax K-5 at 1[a]; Pore at ¶¶ 0024, 0026, 0027, 0028, 0031, 0033, 0117, 0121; Ex. 325-Garcia-Molina at 1[a]; Cheatle at ¶¶ 0035, 0039, 0025, 0031, 0007, 0033, 0030; Wu at 6:34–40, 7:60–8:20, 8:21–30, 13:7–24, 13:39–44, 4:59–65, 2:43–48, 3:58–67; Chen at 3:52–4:3, 4:6–20, 4:21–51, 7:57–8:7, 8:17–39, 6:53–54, 8:52–61, 7:30–33, 9:50–51; Kim882 at ¶¶ 0043–44, 0047–48, ¶¶ 0051, 0057, 0091, 0093; Ex. 325-Sony A33 at 1[a]; Koh at 5:20–26, 5:46–51, 6:16–22, 6:28–39, 6:40–55, 6:56–7:2, 7:3–7, 7:26–37, 12:24–35, 14:47–55; Meguro at ¶¶ 0023, 0045, 0047, 0067, 0090, 0111; Phillips at ¶¶ 0065, 0016, 0020, 0181, 0182, 0083, 0025; Anon at 4:24–33, 4:34–41, 4:56–5:25, 7:4–14, 7:15–29, 8:15–31, 10:21–25, 10:27–46, 3:53–4:3, 4:4–23, 2:64–3:14, 3:15–26, 5:53–6:8, 6:9–15, 6:16–30, 6:32–41; Ex. 325-Panasonic GX1 at 1[a]; Jasinski at ¶¶ 0008, 0010, 0051, 0061,

0087, 0088, 0128, 0131; Ex. 325-Liu at 1[a]; Parulski177 at 29:56–67, 30:9–20, 31:8–17, 31:18–34, 31:35–55, 31:56–32:4, 37:6–22, 37:23–40.

The prior art references further describe “estimating a first weight (c1) associated with the first.” *See, e.g.*, Ex. 325-Nikon D3X at 1[b]; Takeuchi at ¶¶ 0129, 0130, 0136, 0141, 0260, 0261, 0266, 0267, 0268, 0269, 0273, 0274, 0275, 0276, 0032, ¶¶ 0131–32; Ex. 325-Kodak Z990 at 1[b]; Staudacher at ¶¶ 0010, 0019, 0020, 0021, 0022, 0008, 0009; Mori at ¶¶ 0041, 0043, 0046, 0048, 0069, 0025, ¶¶ 0070–71; Kim397 at ¶¶ 0036–38, ¶¶ 0014, 0044, 0005, 0006, Abstract; Ex. 325-Ayagi at 1[b]; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:18–33, 13:35–40, 13:43–45, 13:47–54, 2:5–22; Aisaka at ¶¶ 20, 24; Ex. 325-Nikon D3100 at 1[b]; Steinberg694 at ¶¶ 0097, 0100, 0139, 0142, 0164, 0169, 0173, 0175; Marchesotti at ¶¶ 0068–69, 0092–93, 0096–97, 0098–99, 0105–06, ¶¶ 0091, 0100, 0101, 0102, 0104, 0042; Ramesh at ¶¶ 30, 41, 62, 6, 29, 31, 42, Claim 10; Kosaka at ¶¶ 0058, 0105, 0107, 0113, 0119, 0120, 0121, 0122; Iwane at 4:48–5:5; Alhadeif at 8:59–62, 9:40–41, 12:47–56, 13:19–25, 14:16–30, 14:46–48; Lu at 4:50–53, 2:25–27, 2:31–39, 3:32–42; Fredlund at ¶¶ 0075, 0087, 0088, 0089, 0090, 0029, 0031; Lv at ¶¶ 0042, 0044, 0045, 0046, 0026, 0032, 0007; Ex. 325-Samsung WB700 at 1[b]; Ex. 325-Canon EOS-1DX at 1[b]; Ex. 325-Pentax K-5 at 1[b]; Pore Claims 10, 14, 20, ¶¶ 0048, 0109, 0110, 0115, 0020, ¶¶ 0111–14, 0018–19, 0021–22; Ex. 325-Garcia-Molina at 1[b]; Cheatle at ¶¶ 0033, 0035, 0039, 0040, 0041, 0043, 0009, 0013; Wu at 11:7–16, 14:4–21, 14:22–26, 7:60–8:20, 13:39–44, 4:43–58, 4:59–65, 5:33–49; Chen at 3:35–51, 5:7–26, 9:28–31, 8:17–39, 6:53–54; Kim882 at ¶¶ 0099, 0077, 0069, 0010, 0020, 0075, 0097, 0067; Ex. 325-Sony A33 at 1[b]; Koh at 7:3–12, 7:13–25, 11:62–12:12, 12:36–56, 2:41–47, 9:52–56, 9:57–10:11; Fukuda at ¶¶ 0100, 0106, 0119, 0025, ¶¶ 0111–12, 0019–20; Meguro at ¶¶ 0041–42, ¶¶ 0043, 0044, 0045, 0047, 0048, 0050, 0051, 0052, 0053, 0054, 0055, 0067, 0068, 0070, 0071, 0072, 0073, 0078, 0079, 0080, 0081, 0082; Phillips at ¶¶ 0023,

0026, 0030, 0032, 0029, 0017, 0018, 0022, 0024; Anon at 8:32–35, 3:53–4:3, 5:26–51, 9:26–34, 9:35–55, 1:59–2:8, 6:42–50, 2:29–38, 10:27–46; Ex. 325-Panasonic GX1 at 1[b]; Jasinski at ¶¶ 0031, 0114, 0120, 0121, 0122, 0123, 0128, 0129; Ex. 325-Liu at 1[b]; Parulski177 at 14:46–15:4, 25:22–35, 33:40–52, 33:53–34:6, 23:33–51, 27:61–28:2, 28:5–15, 28:16–30; Sarhan at 9:19–29, 6:13–21, 9:30–51, 9:64–10:14, 3:8–16, 5:45–63, 6:22–28.

The prior art references further describe “obtaining a second value (QI2), where value is a measurement of under or over exposure of at least one of a part of image or face exposure.” *See, e.g.,* Ex. 325-Nikon D3X at 1[c]; Takeuchi at ¶¶ 0084, 0090, 0147, 0290, 0293, 0283, 0287, 0137, 0112, 0141, 0284; Ex. 325-Kodak Z990 at 1[c]; Staudacher at ¶¶ 0006, 0008, 0009, 0010, 0018, 0019, 0020, 0022; Mori at ¶¶ 0032, 0033, 0040, 0051, 0052, 0094, 0095, 0010, Abstract; Shah at ¶¶ 0033, 0034, 0059, 0078, 0060, ¶¶ 0072–73; Ex. 325-Ayagi at 1[c]; Savakis at 4:64–5:29, 2:23–36, 5:30–61, 2:37–44, 5:62–64, 2:45–55, 6:56–58, 8:21–28, 8:29–60, 9:22–37, 9:39–46; Aisaka at ¶¶ 55, 118, 119, 120, 121, 122, 0126, 0127, 9, 0133, 0136, 60, ¶¶ 0124–25, 0134–35, 0272–73, 0274–75; Ex. 325-Nikon D3100 at 1[c]; Steinberg694 at ¶¶ 0031, 0100, 0161, 0162, 0163, 0077, 0078, 0099; Marchesotti at ¶¶ 0028, 0087, 0088, 0039, 0040, 0041, 0042, 0049, 0023, ¶¶ 0050–52; Ramesh at ¶¶ 29, 30, 53, 24; Kosaka at ¶¶ 0054, 0075, 0078, 0098, 0100, 0107, 0108, 0120, 0155, 0156, 0157, ¶¶ 0105–06; Iwane at 4:4–13, 4:39–45, 4:48–5:5, 15:51–67, 1:43–52, 2:4–21, 13:54–63; Alhadeif at 14:27–30, 14:46–55, 13:56–61, 4:45–51, 2:50, 3:7–15, 3:16–30, 15:1–6, 6:1–6; Lu at 1:51–59, 3:32–42, 6:37–46, 6:48–52, 7:20–27, 7:29–31, 9:46–51, 12:48–55; Fredlund at ¶¶ 0045, 0047, 0064, 0069, 0084, 0098, 0100, 0104; Lv at ¶¶ 0042, 0045, 0046, 0032, 0044, 0047, 0048, 0005; Ex. 325-Samsung WB700 at 1[c]; Ex. 325-Canon EOS-1DX at 1[c]; Ex. 325-Pentax K-5 at 1[c]; Pore at ¶¶ 0018–19, 0058–61, 0062–63, 0050–51, ¶¶ 0020, 0021, 0042, 0043, 0048, 0049, 0052, 0053; Ex. 325-Garcia-Molina at 1[c]; Cheatle at ¶¶ 0006, 0011, 0012, 0042, ¶¶

0009–10; Wu at Abstract, 2:43–48, 3:6–16, 3:34–46, 4:59–65, 7:60–8:20, 8:21–30, Claim 18; Chen at 1:16–23, 1:25–50, 1:54–57, 1:58–2:3, 7:53–56, 9:50–51; Kim882 at ¶¶ 0051, 0052, 0047, 0107, 0084, 0024, ¶¶ 0003–04; Ex. 325-Sony A33 at 1[c]; Koh at 4:8–19, 4:13–24, 5:46–51, 5:52–6:5, 14:38–46, 13:15–34; Fukuda at ¶¶ 0066, 0082, 0085, 0091, 0125, 0130, 0136, ¶¶ 0106–07, 0128–29; Meguro at ¶¶ 0032, 0033, 0034, 0035, 0036, 0107, 0108, ¶¶ 0039–40; Phillips at ¶¶ 0065, 0015, 0031, 0032, 0023, 0029, 0030, 0021; Anon at 1:59–2:8, 2:9–15, 3:15–26, 3:53–4:3, 4:4–23, 8:15–31, 8:32–43, 9:64–67, 1:41–49, 2:45–48, 5:53–6:8, 10:48–50, Claim 2; Ex. 325-Panasonic GX1 at 1[c]; Jasinski at ¶¶ 0003, 0088, 0114, 0126, 0133, 0005, 0089; Ex. 325-Liu at 1[c]; Parulski177 at 36:22–40, 36:41–56, 36:57–61, 36:62–37:5, 34:7–26, 34:43–49, 34:59–64; Sarhan at 4:36–5:21, 5:22–44, 12:1–23, Abstract, 1:66–2:26, 3:17–51.

The prior art references further describe “estimating a second weight (c2) associated with the second value.” *See, e.g.*, Ex. 325-Nikon D3X at 1[d]; Takeuchi at ¶¶ 0141, 0148, 0149, 0126, 0136, Claims 20, 21, 22; Ex. 325-Kodak Z990 at 1[d]; Staudacher at ¶¶ 0010, 0019, 0020, 0021, 0022, Claims 12, 15, 8; Mori at ¶¶ 0033, 0041, 0051, 0054, 0055, 0080, 0081, 0082, 0100, 0101, 0104, ¶¶ 0102–03; Kim397 at Abstract, ¶¶ 0014, 0015, 0044, ¶¶ 0036–38, Claims 8, 9; Shah at ¶¶ 0104, 0034, 0098, 0101, 0102, 0103, ¶¶ 0072–74; Ex. 325-Ayagi at 1[d]; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:4–15, 13:18–24, 2:45–55, 2:37–44, Claims 18, 27; Aisaka at ¶¶ 0120, 0121, 0122, 0123, 20, 22, 0291, 0300, 0301, 352, 353, 354, 0365, 0366, 0367, ¶¶ 0124–25, 0289–90, 0292–93, 0298–99, 0363–64; Ex. 325-Nikon D3100 at 1[d]; Steinberg694 at ¶¶ 0100, 0164, 0169, 0173, 0185, 0199, 0200, 0201; Marchesotti at ¶¶ 0091, 0095, 0100, 0101, 0104, 0105, 0071, 0072, 0073, 0080, 0081, ¶¶ 0092–93, 0096–97, 0098–99, 0069–70; Ramesh at ¶¶ 30, 41, 39, 40, 0034, 0035, 0036, 25, Claim 10, ¶¶ 0037–38; Kosaka at ¶¶ 0058, 0120, 0121, 0122, 0129, 0130, 0131, 0134; Iwane at 4:48–5:5; Alhadeif at 14:28–30, 14:46–55, 12:51–56, 9:40–41, 3:46–52; Lu

at 10:54–57, 11:8–10, 11:30–32, 4:50–53, 11:5; Fredlund at ¶¶ 0068, 0075, 0076, 0077, 0078, ¶¶ 0063–64; Ex. 325-Samsung WB700 at 1[d]; Ex. 325-Canon EOS-1DX at 1[d]; Ex. 325-Pentax K-5 at 1[d]; Pore at ¶¶ 0048, 0109, 0110, 0049, 0007, 0021, Claim 4; Ex. 325-Garcia-Molina at 1[d]; Cheatle at ¶¶ 0004, 0005, 0009, 0011, 0012, 0013, 0041; Wu at 11:7–16, 14:4–21, 14:22–26, 13:39–44, 15:6–23, 15:24–29, 8:21–30, 5:53–61; Chen at 5:10–26, 8:29–39, 3:36–51, 1:58–2:3, 3:35–51; Kim882 at ¶¶ 0006, 0015, 0059, 0062, 0067, 0069, 0077, 0084; Ex. 325-Sony A33 at 1[d]; Koh at 2:5–8, 2:10–12, 2:41–47, 8:56–9:9, 9:47–51, 11:62–12:12, 12:13–16, 13:56–14:3; Fukuda at ¶¶ 0112, 0025, 0133, 0111, 0097, ¶¶ 0019–20; Phillips at ¶¶ 0023, 0026, 0029, 0030, 0032, 0024; Anon at 8:32–35, 3:53–4:3, 4:4–23, 9:26–34, 9:56–63, 10:27–46; Ex. 325-Panasonic GX1 at 1[d]; Jasinski at ¶¶ 0030, 0120, 0121, 0122, 0128, 0129; Ex. 325-Liu at 1[d]; Parulski177 at 14:46–15:4, 24:50–63, 25:22–35, 27:61–28:2, 28:5–15, 28:16–30, 36:57–61; Sarhan at 4:36–5:21, 9:19–29, 9:64–10:26, 10:37–48, 1:66–2:26, 3:17–51, 5:22–44.

The prior art references further describe “analyzing the captured image for detecting or recognizing zero or more faces in the picture, calculates properties of at least one of said faces if exist, where said properties are at least one of.” *See, e.g.*, Ex. 325-Nikon D3X at 1[e]; Takeuchi at ¶¶ 0113, 0115, 0116, 0134, 0136, 0137, 0146, 0147, 0148, 0162, 0292, 0296, 0005, 0309; Ex. 325-Kodak Z990 at 1[e]; Staudacher at ¶¶ 0007, 0008, 0009, 0010, 0018, 0020, 0022, 0023; Mori at ¶¶ 0041, 0034, 0098, 0100, 0101, ¶¶ 0102–03; Shah at ¶¶ 0036, 0099, 0100, 0101, 0102, 0103, 0037, Abstract; Ex. 325-Ayagi at 1[e]; Savakis at 8:13–19, 8:21–28, 8:29–60, 8:61–9:5, 9:6–18, 9:22–37, 9:39–46, 9:48–54, 2:23–36, 2:5–22, 5:8–29; Aisaka at ¶¶ 0177–78, 0182–83, ¶¶ 0179, 0180, 0181, 59, 60, 61, 114, 115, 116, 263, 258; Ex. 325-Nikon D3100 at 1[e]; Steinberg694 at ¶¶ 0076, 0118, 0119, 0165, 0171, 0173, 0183, 0205; Marchesotti at ¶¶ 0082, 0028, 0079, 0081, 0067, 0068, 0071, 0072, 0073, 0091, ¶¶ 0069–70; Ramesh at ¶¶ 3, 4, 5, 6, 59, 61, 62; Kosaka at ¶¶ 0059,

0067, 0083, 0084, 0085, 0098, 0100, 0105, 0134, 0135, ¶¶ 0065–66; Iwane at 4:39–45, 4:48–5:5, 5:64–6:8, 6:9–14, 6:15–29, 6:30–34, 6:62–67; Alhadeef at 12:45–56, 12:57–65, 12:66–13:18, 13:19–25, 13:26–41, 13:42–47, 2:36–50, 3:7–15, 3:16–30, 14:27–30, 14:46–48, 15:1–12, 1:25–30; Lu at 9:57–62, 9:64–67, 10:2–5, 10:7–15, 10:18–20, 3:58–65, 7:16–19, 12:48–55; Fredlund at ¶¶ 0065, 0066, 0071, 0074, 0076, 0086, 0087, 0090; Lv at ¶¶ 0028, 0032, 0035, 0042, 0043, 0045, 0051, 0079; Ex. 325-Samsung WB700 at 1[e]; Ex. 325-Canon EOS-1DX at 1[e]; Ex. 325-Pentax K-5 at 1[e]; Pore at ¶¶ 0004, 0007, 0021, 0047, 0054, 0055, 0056, 0064, 0065, 0068, 0076, 0077, ¶¶ 0066–67; Ex. 325-Garcia-Molina at 1[e]; Cheatle at ¶¶ 0010, 0012, 0033, 0042, 0043; Wu at Abstract, 4:25–42, 4:43–58, 6:64–7:5, 7:6–15, 7:16–30, 7:31–46, 11:54–67, 12:1–13, 12:14–27; Chen at 1:9–13, 1:16–23, 1:25–50, 3:60–4:3, 4:6–20, 4:21–51, 4:52–62, Claim 25; Kim882 at Abstract, ¶¶ 0002, 0004, 0006, 0062, 0109, ¶¶ 0059–60; Ex. 325-Sony A33 at 1[e]; Koh at 6:9–22, 6:28–39, 6:40–55, 6:56–7:2, 9:14–21, 11:52–58; Fukuda at ¶¶ 0087–88, 0106–07, 0023–24, 0170–71, ¶¶ 0117, 0125, 0128; Phillips at ¶¶ 0015, 0016, 0017, 0022, 0023, 0024, 0031, 0032, ¶¶ 0033–34; Anon at 1:41–49, 3:27–42, 3:53–4:3, 7:43–54, 8:15–31, 8:32–35, 8:65–9:25, 10:27–46; Ex. 325-Panasonic GX1 at 1[e]; Jasinski at ¶¶ 0112, 0115, 0118, 0120, ¶¶ 0116–17, 0086–87, Claim 9; Ex. 325-Liu at 1[e]; Parulski177 at 22:59–62, 22:63–23:11, 23:12–22, 23:23–31, 23:33–51, 23:52–67, 24:1–12, 24:13–28, 24:30–35, 24:36–49, 25:60–26:10, 26:42–65, 26:66–27:3; Sarhan at 3:12–16, 3:17–51, 4:16–35, 5:22–44, 11:19–36, 12:1–23.

The prior art references further describe “looking at camera, smiling, crying, face detection quality, face exposure or subject movement to obtain a third value (QI3).” *See, e.g.*, Ex. 325-Nikon D3X at 1[f]; Takeuchi at ¶¶ 0146, 0147, 0134, 0135, 0296, 0299, 0292, 0288; Ex. 325-Kodak Z990 at 1[f]; Staudacher at ¶¶ 0001, 0007, 0009, 0010, 0018, 0020, 0022; Shah at ¶¶ 0101, 0102, 0098, ¶¶ 0036–37, Claims 8, 23; Ex. 325-Ayagi at 1[f]; Savakis at 8:61–9:5, 9:6–18, 9:65–

10:28, 10:42–50; Aisaka at ¶¶ 59, 61, 62, 64, 114, 258, 263, 265; Ex. 325-Nikon D3100 at 1[f]; Steinberg694 at ¶¶ 0033, 0035, 0036, 0076, 0011, 0139, 0140, 0141, 0145, 0146, 0147, 0165, 0166, 0167, 0199, 0200, 0201; Marchesotti at ¶¶ 0028, 0079, 0081, 0082, 0083, 0086, 0087; Ramesh at ¶¶ 62, 63, 64, 4, 5, 7, 61; Kosaka at ¶¶ 0100, 0107, 0108, 0120, 0121, 0134, 0135, 0079, 0080, 0098, 0099, ¶¶ 0105–06, 0114–15, 0118–19; Iwane at 4:48–5:5, 5:8–23, 8:40–53, 8:54–63, 9:54–64, 10:40–50, 13:54–67, 14:22–34; Lu at 9:57–62, 9:64–67, 10:2–5, 10:7–15, 10:18–20, 7:20–27, 3:58–65, 12:48–55; Fredlund at ¶¶ 0099, 0074, 0086, 0087, 0098, Claim 24; Lv at ¶¶ 0032, 0035, 0036, 0042, 0045, 0047, 0079, 0083; Ex. 325-Samsung WB700 at 1[f]; Ex. 325-Canon EOS-1DX at 1[f]; Ex. 325-Pentax K-5 at 1[f]; Ex. 325-Garcia-Molina at 1[f]; Cheatle at ¶¶ 0009–10, ¶¶ 0012, 0039, 0042; Wu at Abstract, 1:52–67, 4:25–42, 4:43–58, 6:7–19, 7:21–30, 7:31–46, 7:47–59, 12:14–27, 15:6–23; Kim882 at Abstract, ¶¶ 0004, 0061, 0062, 0063, 0065, 0095, 0096; Ex. 325-Sony A33 at 1[f]; Koh at 6:9–15, 6:16–27, 6:28–39, 6:40–55, 6:56–7:2, 7:3–12, 9:14–21, 9:22–35, 9:36–46, 9:47–56, 9:57–10:11, 10:12–32, 11:31–35, 11:36–51, 12:36–56, 12:61–67, 13:1–14, 13:15–34; Fukuda at ¶¶ 0107, 0117, 0125, 0140, 0142, 0143, 0144, 0169, ¶¶ 0170–71; Meguro at ¶¶ 0026, 0043, 0044, 0045, 0047, 0048, 0050, 0051, 0052, 0053, 0054, 0055, 0056, 0057, 0078, 0079, 0080, 0082, 0083, 0084, 0085, 0086, ¶¶ 0041–42; Phillips at ¶¶ 0015, 0031, 0032, 0079, 0083, ¶¶ 0033–34, 0175–79; Anon at 1:41–49, 3:27–42, 3:53–4:3, 7:43–54, 8:32–35, 8:65–9:25, 9:26–34; Ex. 325-Panasonic GX1 at 1[f]; Jasinski at ¶¶ 0111, 0112, 0113, 0114, 0117, 0120, 0002, 0017, ¶¶ 0018–19; Ex. 325-Liu at 1[f]; Parulski177 at 17:34–56, 17:57–18:18, 25:22–35, 25:60–26:10, 27:61–28:2, 28:5–15, 28:16–30, 29:49–55, 29:56–67, 30:1–8, 30:9–20, 36:3–9; Sarhan at 3:17–51, 3:52–4:2, 4:36–5:21, 5:22–44, 12:1–23, 8:45–58.

The prior art references further describe “estimating a third weight (c3) associated with the third value.” *See, e.g.*, Ex. 325-Nikon D3X at 1[g]; Takeuchi at ¶¶ 0141, 0132, 0253, 0254, 0255,

0256, 0259, 0260, 0261, 0262, 0263, ¶¶ 0251–52, 0257–58; Ex. 325-Kodak Z990 at 1[g]; Staudacher at ¶¶ 0019, 0020, 0021, 0022, 0009, 0010, 0008, Claim 12; Kim397 at ¶¶ 0014, 0015, 0044, 0005, 0006, 0007, 0035, ¶¶ 0036–37, 0038–39, 0032–34, 0009–10, 0011–13, Abstract; Shah at ¶¶ 0099, 0100, 0101, 0102, 0103, 0003, 0004, 0089, 0090, 0091, ¶¶ 0036–37; Ex. 325-Ayagi at 1[g]; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:4–15, 13:18–33, 13:35–40, 13:43–45, 13:47–54, 2:5–22, 4:64–5:29, 2:23–36, 5:30–61, 2:37–44, 5:62–64, 2:45–55, 8:13–19, 8:21–28, 8:29–60, Claim 38; Aisaka at ¶¶ 19, 20, 24, 117, 118, 119, 298, 301; Ex. 325-Nikon D3100 at 1[g]; Steinberg694 at ¶¶ 0100, 0164, 0169, 0189, 0190, 0208, 0167, 0168, 0073; Marchesotti at ¶¶ 0080, 0099, 0042, 0043, 0044, 0048, 0104, ¶¶ 0045–47, 0105–06, Claim 11; Ramesh at ¶¶ 30, 41, 46, 51, 61, 62, 25, 39, 40; Kosaka at ¶¶ 0006, 0007, 0058, 0069, 0089, 0108, 0112, 0113, 0114, 0130, ¶¶ 0074–75, 0106–07; Iwane at 4:48–5:5, 1:53–2:3, 2:4–21, 2:45–56, 6:15–29, 14:22–34; Alhadeef at 1:25–30, 4:7–9, 1:14–24, 14:16–30, 14:46–48, 7:44–57, 14:54–63, 15:1–6, 12:45–56, 12:66–13:18, 13:19–25; Lu at 4:50–53, Abstract, 2:62–3:3, 3:4–14, 3:66–4:3, 11:54–56, Claim 4; Fredlund at ¶¶ 0087, 0088, 0089, 0090, 0075, 0076, 0077, 0078; Lv at ¶¶ 0026, 0028, 0032, 0042, 0045, 0066, 0077, 0078, 0079, 0083, 0084; Ex. 325-Samsung WB700 at 1[g]; Ex. 325-Canon EOS-1DX at 1[g]; Ex. 325-Pentax K-5 at 1[g]; Pore at ¶ 0110, Claims 4, 14, 20, ¶¶ 0114–15; Ex. 325-Garcia-Molina at 1[g]; Cheatle at ¶¶ 0039, 0040, 0041, 0042, 0043, 0004, 0005, 0011, 0012, 0013; Wu at 14:4–21, 14:22–26, 12:40–61, 11:7–16, 15:39–48, 13:39–44, 9:6–14, 5:53–61; Kim882 at ¶¶ 0062, 0069, 0076, 0078, 0084, ¶¶ 0073–75, 0081–82, 0085–86; Ex. 325-Sony A33 at 1[g]; Koh at 2:48–58, 2:63–65, 7:3–12, 7:13–25, 7:26–37, 11:62–12:12, 12:13–16, 12:36–56, 12:57–67, 13:1–14; Fukuda at ¶¶ 0100, 0112, 0125, 0128, 0139, 0019, ¶¶ 0106–07; Meguro at ¶¶ 0020, 0021, 0022, 0023, 0025, 0043, 0101, 0102, ¶¶ 0041–42; Phillips at ¶¶ 0023, 0026, 0029, 0030, 0032, 0090, 0091; Anon at 3:53–4:3, 4:4–23, 8:15–31, 8:32–35, 8:44–54, 8:55–64, 5:26–

51, 4:24–33; Ex. 325-Panasonic GX1 at 1[g]; Jasinski at ¶¶ 0120, 0121, 0122, 0123, 0126, 0128, 0129, 0130, 0131, 0032, ¶¶ 0028–29, 0030–31; Ex. 325-Liu at 1[g]; Parulski177 at 25:22–35, 17:62–18:18, 18:20–24, 18:60–66, 23:33–45, 24:50–63, 27:61–28:2, 37:23–40; Sarhan at 9:19–29, 9:30–51, 9:64–10:14, 10:37–48, 4:36–61, 5:22–44, 5:45–61, 1:66–2:26, 8:8–30.

The prior art references further describe “obtaining a forth value (QI4) responsive to obstruction of at least one optical lens.” *See, e.g.*, Ex. 325-Nikon D3X at 1[h]; Takeuchi at ¶¶ 0144–45, ¶¶ 0175, 0297, 0298, 0299, 0302, 0303; Ex. 325-Kodak Z990 at 1[h]; Staudacher at ¶¶ 0005, 0011, 0012, 0013, 0017, 0018, 0023, 0009; Mori at Abstract, ¶¶ 0003, 0010, 0058, 0059, 0060, 0063, 0065, 0072, 0073, 0080, 0081, 0082, ¶¶ 0066–67, 0078–79; Kim397 at ¶¶ 0005, 0006, 0024, 0026, 0029, 0033, 0044, Abstract; Shah at ¶¶ 0030, 0038, 0042, 0055, 0056, 0075, 0076; Ex. 325-Ayagi at 1[h]; Aisaka at ¶¶ 105, 106, 107, 108, 109, 110, 111, 193; Ex. 325-Nikon D3100 at 1[h]; Steinberg694 at ¶¶ 0145, 0150, 0077, 0100, 0103, 0073, ¶¶ 0074–75; Ramesh at ¶¶ 24, 30, 44, 61, 26, 39, Claims 11, 9; Kosaka at ¶¶ 0059, 0063, 0076, 0098, 0099, 0100, 0104, 0105, 0117, 0120, 0121, 0134, 0158, ¶¶ 0074–75, 0115–16, 0118–19; Fredlund at ¶¶ 0036, 0045, 0047, 0072, 0011, ¶¶ 0107–08, 0013–17; Ex. 325-Samsung WB700 at 1[h]; Ex. 325-Canon EOS-1DX at 1[h]; Ex. 325-Pentax K-5 at 1[h]; Pore at ¶¶ 0018, 0021, 0036, 0037, 0047, 0053, 0054, ¶¶ 0110–12; Ex. 325-Garcia-Molina at 1[h]; Cheatle at ¶¶ 0042, 0012, 0011, 0038, 0039, 0040, 0041; Wu at 7:31–46, 7:47–59, 2:43–48, 3:6–16, 3:34–46, 3:58–67, 8:44–63, 6:20–33; Ex. 325-Sony A33 at 1[h]; Koh at 5:20–26, 5:36–51, 1:25–30, 3:39–40, 4:38–39, 4:8–12; Anon at 1:41–49, 1:59–2:8, 5:53–6:8, 7:43–54, 7:55–63, 7:64–8:13, 8:15–31, 8:32–35; Ex. 325-Panasonic GX1 at 1[h]; Ex. 325-Liu at 1[h]; Parulski177 at 1:44–51.

The prior art references further describe “estimating a forth weight (c4) associated with the forth value.” *See, e.g.*, Ex. 325-Nikon D3X at 1[i]; Takeuchi at ¶¶ 0132, 0141, 0148, 0279, 0284,

¶¶ 0251–52; Ex. 325-Kodak Z990 at 1[i]; Staudacher at ¶¶ 0020, 0021, 0022, 0009, 0010, Abstract, Claims 12, 15; Mori at Abstract, ¶¶ 0010, 0050, 0051, 0052, 0055, 0056, 0072, 0080, 0081, 0082, ¶¶ 0038–39, 0048–49, 0053–54, 0073–74; Kim397 at Abstract, ¶¶ 0014, 0044, 0005, 0006, 0007, ¶¶ 0036–37, 0038–39; Shah at ¶¶ 0069, 0070, 0055, 0056, 0057, 0058, 0059, 0034, 0035, 0036, 0075, 0076, 0030, 0031, 0032, 0038, ¶¶ 0071–72, 0073–74, 0039–40; Ex. 325-Ayagi at 1[i]; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:18–33, 13:35–40, 13:43–45, 13:47–54, 14:6–17, 4:44–63, 4:64–5:29, 2:45–55; Aisaka at ¶¶ 0190–91, 0202–03, 0205–06, 0116–17, 0042–45, 0046–49, 0356–57, 0362–63, ¶¶ 0204, 0207, 0208, 0209, 105, 106, 107, 0118, 0119, 0268, 0269, 0355; Ex. 325-Nikon D3100 at 1[i]; Steinberg694 at ¶¶ 0100, 0097, 0015, 0074, 0078, Claims 15, 16, 17; Marchesotti at ¶¶ 0096, 0099, 0104, 0105; Ramesh at ¶¶ 30, 41, 0028, 0029, 62, ¶¶ 0026–27, Claim 10; Kosaka at ¶¶ 0058, 0105, 0107, 0108, 0129, 0130, 0134; Iwane at 4:48–5:5, Abstract, 1:43–52, 1:53–2:3, 2:4–21, 13:54–67; Alhadeef at 14:16–30, 14:46–48, 6:31–39, 9:35–43, 12:45–56, 15:1–6, 3:46–52, 3:53–64, 3:65–4:3, 4:4–9, 7:38–43, 7:44–57; Lu at 4:50–53, 5:34–42, 5:43–54, 10:54–57, 11:5, 3:66–4:3, 4:13–19, Claim 4; Fredlund at ¶¶ 0075, 0076, 0077, 0078, 0088, 0089, 0090, ¶¶ 0023–24; Lv at ¶¶ 0042, 0032, 0045, 0046, 0011, 0026, ¶¶ 0008–09; Ex. 325-Samsung WB700 at 1[i]; Ex. 325-Canon EOS-1DX at 1[i]; Ex. 325-Pentax K-5 at 1[i]; Pore at ¶¶ 0058, 0066, 0068, 0069, 0076, 0077; Ex. 325-Garcia-Molina at 1[i]; Cheatle at ¶¶ 0040, 0041, 0043, 0004, 0011, 0012; Wu at 14:4–21, 14:22–26, 11:7–16, 10:61–11:6, 13:56–14:1, 4:43–58, 4:59–65, 5:53–61; Chen Claim 22, 2:17–39, 10:10–22; Kim882 at ¶¶ 0069, 0077, 0090, 0100, 0102, ¶¶ 0085–86; Ex. 325-Sony A33 at 1[i]; Koh at 6:6–22, 6:56–7:2, 7:3–12, 7:13–25, 7:26–37, 9:52–56, 9:57–10:11, 10:12–32, 10:33–42, 11:14–26, 11:27–35, 11:36–51, 11:52–61, 11:62–12:12, 12:13–16, 2:41–47, 2:48–58, 2:66–67, 3:1–12; Fukuda at ¶¶ 0093, 0097, 0116, 0025, ¶¶ 0111–12, 0019–20; Meguro at ¶¶ 0047, 0048, 0050, 0082, 0098, 0104, 0107, 0111; Phillips at ¶¶

0023, 0026, 0030, 0032, 0024, 0029; Anon at 3:53–4:3, 4:4–23, 5:26–51, 7:55–63, 7:64–8:13, 8:15–31, 8:32–35, 9:26–34, 9:35–55, 9:56–63; Ex. 325-Panasonic GX1 at 1[i]; Jasinski at ¶¶ 0028, 0120, 0121, 0122, 0126; Ex. 325-Liu at 1[i]; Parulski177 at 14:46–15:4, 17:34–56, 17:57–18:18, 18:20–24, 25:22–35, 27:61–28:2, 31:56–32:4, 36:57–61, 36:62–37:5, 37:6–22; Sarhan at 9:19–29, 7:64–67, 8:1–5, 8:6–30, 3:8–16, 9:30–51, 9:64–10:14, 9:52–63, 9:64–10:26, 10:27–35.

The prior art references further describe “to select, based on values QI1, QI2, QI3, QI4 and weights c1, c2, c3, c4, at least one appropriate suggestion from a pre-stored table of suggestions of how a user of the system may cause at least on said value to be above or below a threshold and to present said appropriate suggestion to the user.” *See, e.g.*, Ex. 325-Nikon D3X at 1[k]; Takeuchi at ¶¶ 0291, 0293, 0294, 0302, 0303, 0289, 0290, 0301, 0288; Ex. 325-Kodak Z990 at 1[k]; Staudacher at ¶¶ 0011, 0012, 0013, 0014, 0015, 0023, 0024, 0025; Mori at ¶¶ 0072, 0010, 0069, 0076, 0077, 0078, 0032, 0033, 0034, 0045, 0046, ¶¶ 0073–74, 0070–71, 0043–44; Kim397 at ¶¶ 0034, 0041, 0026, 0028, 0005, 0014, 0015, 0038; Shah at ¶¶ 0092, 0093, 0095, 0096, 0004, 0043, Claim 8, ¶¶ 0040–41; Ex. 325-Ayagi at 1[k]; Savakis at 4:6–26, 4:44–63, 4:64–5:29, 2:45–55, 2:56–62, 13:25–33, 13:35–40, 14:42–55; Aisaka at ¶¶ 55, 56, 0126, 0127, 371, 375, 376, 365, 366, 367, 299, 300, 301, ¶¶ 0124–25; Ex. 325-Nikon D3100 at 1[k]; Steinberg694 at ¶¶ 0078, 0015, 0019, 0021, 0204, 0026, 0027, 0201; Marchesotti at ¶¶ 0012, 0107, 0112, Claim 21, ¶¶ 0108–09, 0110–11; Ramesh at ¶¶ 30, 39, 40, 41, 51, 52, 24, 25; Kosaka at ¶¶ 0089, 0099, 0146, 0157, 0158, 0008, 0010, 0060; Iwane at 4:39–45, 5:35–51, 5:52–57, 6:9–14, 6:15–29, 7:58–64, 8:14–22, 16:6–8; Alhadeef at 14:49–63, 15:1–12, 15:13–25, 9:40–41, 13:56–64, 13:65–14:3, 14:4–9, 1:25–30, 1:34–45, 1:49–59, 15:49–62; Lu at 7:29–42, 7:44–48, 10:44–57, 11:30–32, 11:54–56, 12:1–11, 12:28–44, 3:20–31, 3:32–42, 4:50–53, 11:8–10; Fredlund at ¶¶ 0070, 0071, 0072, 0074, 0075, 0076, 0077, 0078; Lv at ¶¶ 0008–09, ¶¶ 0027, 0032, 0044, 0046, Claim 11; Ex. 325-Samsung

WB700 at 1[k]; Ex. 325-Canon EOS-1DX at 1[k]; Ex. 325-Pentax K-5 at 1[k]; Pore at ¶¶ 0036, 0037, 0049, 0050, 0115, 0121, ¶¶ 0110–11; Ex. 325-Garcia-Molina at 1[k]; Cheatle at ¶¶ 0029, 0031, 0033, 0039, 0040, 0043; Wu at Abstract, 2:27–42, 3:22–32, 5:53–61, 5:62–6:6, 10:61–11:6, 11:7–16, 11:17–26, 13:56–14:3, 14:4–21, 14:22–26, 2:49–55, 7:60–8:20, 8:21–30, 8:31–43, 8:44–63; Kim882 at ¶¶ 0069–70, 0085–86, 0089–90, 0016–17, ¶¶ 0071, 0072, 0084, 0088, 0100, 0101, 0102, 0103, 0014, 0015, 0006, 0087; Ex. 325-Sony A33 at 1[k]; Koh at 6:56–7:2, 7:3–12, 7:13–25, 7:26–37, 7:38–47, 7:48–62, 7:63–8:4, 9:52–56, 9:57–10:11, 10:12–32, 10:33–42, 10:43–59, 10:60–11:13, 11:14–18, 11:31–35, 11:36–51, 11:52–61, 11:62–12:12, 12:13–23, 12:24–35, 2:41–47, 2:48–58, 2:59–67; Fukuda at ¶¶ 0119, 0135, 0057, ¶¶ 0121–22, 0136–37, 0160–62; Meguro at ¶¶ 0071, 0080, 0082, 0083, 0084, 0089, 0090, 0091, 0092, 0093, 0094; Phillips at ¶¶ 0134, 0032, 0022, 0023, 0028, 0029, 0030, ¶¶ 0145–46, 0147–49, 0150–52, 0162–64, 0165–66, 0167–68, 0169–70, 0033–34; Anon at Abstract, 1:59–2:8, 1:64–2:8, 2:29–38, 2:64–3:14, 3:15–26, 3:27–42, 5:53–6:8, 6:42–50, 6:51–7:3, 7:15–29, 7:30–41, 7:43–54, 7:55–63, 7:64–8:13, 8:65–9:25, Claim 8; Ex. 325-Panasonic GX1 at 1[k]; Jasinski at ¶¶ 0088, 0089, 0090, 0091, 0081, 0082, 0083, 0005; Ex. 325-Liu at 1[k]; Parulski177 at 27:25–32, 27:40–45, 27:46–60, 23:33–51, 24:1–10, 37:23–40, 2:23–28, 2:42–47; Sarhan at 3:52–4:2, 4:3–15, 4:16–35, 6:13–21, 6:22–36, 13:5–16, Abstract.

Other examples of these concepts are cited in the attached charts for the above references. *See* Appendix A, Exhibits 325-Aisaka through 325-Wu. It would have been known and simple to take prior art for real time assessment of picture quality by comparison with similar objects, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving picture quality. *Id.*

Samsung is not aware of any secondary considerations supporting non-obviousness of the '325 Patent claims. To the extent SnapAid seeks to introduce any alleged secondary considerations in the future, Samsung reserves the right to respond at that time.

F. Invalidity Under Section 112

Samsung provides an identification of the limitations of the '325 Patent that are invalid based on indefiniteness under pre-AIA 35 U.S.C. § 112 ¶ 2, or enablement or written description under pre-AIA 35 U.S.C. § 112 ¶ 1. These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1, 3–20 of the '325 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). For example, as applied in SnapAid’s Infringement Contentions, the terms “under or over exposure of at least one of a part of image or face exposure,” “face detection quality, face exposure or subject movement,” “obstruction of at least one optical lens,” “where object recognition can change importance of certain areas in the image for the purpose calculation of said second value (QI2): over or under exposure value,” and “calculating total quality value” are indefinite because they are not only subjective but also do not have a meaning that can be clearly determined from the patent, and thus fail to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1, 3–20 of the '325 Patent are invalid under § 112 ¶ 1, because the specification as filed does not contain a sufficient written description supporting those claims. For example, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of

SnapAid's contentions. For example, Asserted Claims 1, 3–20 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following reasons: the '325 Patent fails to provide an adequate written description of the phrases “a time-dependent confidence level,” “wherein total value is the threshold,” “calculating total quality value,” and “where the first value (QI1) is based on image stabilization-sensor shift, lens stabilization, gyroscope, accelerometer, Global Positioning (GPS), 9 Degrees of Freedom (DOG) sensing component or 10 Degrees of Freedom (DOF) sensor component” as applied in SnapAid's Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the '325 Patent. The subject matter of these claims, as described above, is not sufficiently shown in the specification of the '325 Patent. The subject matter of these claims, as described above, is not sufficiently enabled because the '325 patent specification does not teach one skilled in the art how to make and use the alleged invention. For example, the '325 Patent fails to enable the following and thus, Asserted Claims 1, 3–20 of the '325 Patent are invalid: “a time-dependent confidence level,” and “calculating total quality value.” The foregoing phrases are not described in such a way that one of ordinary skill in the art could implement them to achieve the results sought by the individual named on the face of the '325 Patent as the inventor. The foregoing phrases are not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '325 Patent was in possession of the claimed subject matter. The Asserted Claims of the '325 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on SnapAid in accordance with the Court’s Scheduling Order.

G. Invalidity Under Section 101

The asserted claims of the ’325 patent are invalid under *Alice Corp. Pty. v. CLS Bank Int’l*, 573 U.S. 208 (2014) because they are directed to patent-ineligible subject matter and fail to include an “inventive concept,” *i.e.*, some additional element or combination of elements “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” 573 U.S. 208, 217–18 (2014).

The asserted claims of the ’325 patent are directed to a patent-ineligible concept—namely, the abstract idea of assessing picture quality and suggesting that the photographer take another picture after making an adjustment, such as to the photographer’s location or angle. The claims are directed to a process that photographers conduct in their minds—assessing a picture’s quality and then taking a new picture to try to get a better picture—which renders them abstract under Federal Circuit case law holding that “methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas—the ‘basic tools of scientific and technological work’ that are open to all.” *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)); *PersonalWeb Techs. LLC v. Google LLC*, 8 F.4th 1310, 1316 (Fed. Cir. 2021); *Longitude Licensing Ltd. v. Google LLC*, 2025 WL 1249136, at *2 (Fed. Cir. Apr. 30, 2025); *Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021); *Broadband iTV, Inc. v. Amazon.com, Inc.*, 113 F.4th 1359, 1371 (Fed. Cir. 2024); *USC IP P’ship, L.P. v. Meta Platforms, Inc.*, 2023 WL 5606977, at *2 (Fed. Cir. Aug. 30, 2023). This is further confirmed by the specification, which provides that

the claimed inventions “utilize camera hardware ... to evaluate pictures taken in real time, and actively assist in obtaining the best picture given the circumstances at hand.” ’325 Pat., 2:20-24.

The asserted claims of the ’325 patent also lack any inventive concept and merely implement the abstract idea of taking a better picture using generic camera components—a “digital camera module,” an “optical lens,” an “image sensor,” a “motion or location sensor,” and a “processor.” ’325 Pat., Cl. 1. The inventor of the ’325 patent does not purport to have invented these components or described or claimed any specific improvement in their functionality. To the contrary, the specification confirms that these are conventional components. *See, e.g.*, ’325 Pat., 6:26-27 (“Any suitable input device, such as but not limited to a sensor, may be used ...”), 6:31-33 (“Any suitable processor may be employed to compute or generate information as described herein ...”). That these components are known and conventional is further demonstrated by their disclosure throughout the prior art disclosed in these contentions. Further, the dependent claims similarly recite additional generic limitations that fail to add any inventive concept, and are therefore patent-ineligible. *See In re Bd. of Trs. of Leland Stanford Junior Univ.*, 991 F.3d 1245, 1250 (Fed. Cir. 2021); *Braemar Mfg., LLC v. ScottCare Corp.*, 816 F. App’x 465, 470 (Fed. Cir. 2020); *In re TLI Commc’ns LLC Pat. Litig.*, 823 F.3d 607, 611 (Fed Cir. 2016). Accordingly, the asserted claims of the ’325 patent are patent-ineligible under § 101.

IX. INVALIDITY CONTENTIONS FOR THE ’901 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the “References Cited” on the face of the ’901 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Samsung may rely upon that prior art, including the “References Cited” on the face of the ’901 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of

ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Samsung reserves the right to rely upon additional prior art, information, and/or knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

The claim charts attached in Appendix A as Exhibits 901-Alhadeh through 901-Wu identify where each limitation of the Asserted Claims of the '901 Patent is found in the prior art.

C. Identification of the Prior Art

Based on SnapAid's Preliminary Infringement Contentions, Samsung identifies prior art below and in Appendix A as Exhibits 901-Alhadeh through 901-Wu, which contain charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits 901-Alhadeh through 901-Wu and below, Samsung has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Samsung notes that it has applied the prior art in accordance with SnapAid's improper assertions of infringement and improper applications of the claims. Samsung does not agree with SnapAid's application of the claims and denies infringement.

Samsung further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Samsung reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Samsung has also identified exemplary obviousness combinations further below.

'901 Patent Prior Art Patents / Patent Applications				
Ex. No.	Patent / Publication No.	Country of Origin	Filing Date	Date of Issue / Publication
Ex. 901-Alhadeh	U.S. Patent No. 8,009,198 ("Alhadeh")	U.S.	Apr. 22, 2004	Aug. 30, 2011
Ex. 901-Anon	U.S. Patent No. 8,508,622 ("Anon")	U.S.	Jan. 18, 2011	Aug. 13, 2013
Ex. 901-Chen	U.S. Patent No. 6,810,083 ("Chen")	U.S.	Nov. 16, 2001	Oct. 26, 2004
Ex. 901-Fredlund	U.S. Patent Pub. No. 2011/0216209 A1 ("Fredlund")	U.S.	Mar. 3, 2010	Sept. 8, 2011
Ex. 901-Iwane	U.S. Patent No. 7,660,519 ("Iwane")	U.S.	Aug. 28, 2006	Feb. 9, 2010
Ex. 901-Jasinski	U.S. Patent Pub. No. 2012/0201427 A1 ("Jasinski")	U.S.	Feb. 4, 2011	Aug. 9, 2012
Ex. 901-Kim397	U.S. Patent Pub. No. 2006/0260397 A1 ("Kim397")	U.S.	May 12, 2006	Nov. 23, 2006
Ex. 901-Kim882	U.S. Patent Pub. No. 2011/0187882 A1 ("Kim882")	U.S.	Sept. 10, 2010	Aug. 4, 2011
Ex. 901-Koh	U.S. Patent No. 7,973,848 ("Koh")	U.S.	Mar. 31, 2008	July 5, 2011
Ex. 901-Kosaka	U.S. Patent Pub. No. 2004/0012682 A1 ("Kosaka")	U.S.	July 2, 2003	Jan. 22, 2004
Ex. 901-Lu	U.S. Patent No. 7,590,287 ("Lu")	U.S.	Nov. 6, 2002	Sept. 15, 2009
Ex. 901-Lv	U.S. Patent Pub. No. 2013/0286161 A1 ("Lv")	U.S.	Apr. 25, 2012	Oct. 31, 2013
Ex. 901-Marchesotti	U.S. Patent Pub. No. 2012/0269441 A1 ("Marchesotti")	U.S.	Apr. 19, 2011	Oct. 25, 2012
Ex. 901-Meguro	U.S. Patent Pub. No. 2009/0251549 A1 ("Meguro")	U.S.	Aug. 23, 2007	Oct. 8, 2009
Ex. 901-Mori	U.S. Patent Pub. No. 2011/0080494 A1 ("Mori")	U.S.	Sept. 30, 2010	Apr. 7, 2011

Ex. 901-Nepomniachtchi	U.S. Patent Pub. No. 2013/0085935 A1 (“Nepomniachtchi”)	U.S.	May 1, 2012	Apr. 4, 2013
Ex. 901-Parulski177	U.S. Patent No. 6,539,177 (“Parulski177”)	U.S.	July 17, 2001	Mar. 25, 2003
Ex. 901-Phillips	U.S. Patent Pub. No. 2005/0226490 A1 (“Phillips”)	U.S.	Mar. 30, 2005	Oct. 13, 2005
Ex. 901-Pore	U.S. Patent Pub. No. 2009/0290037 A1 (“Pore”)	U.S.	May 22, 2008	Nov. 26, 2009
Ex. 901-Ramesh	U.S. Patent Pub. No. 2009/0296989 A1 (“Ramesh”)	U.S.	May 28, 2009	Feb. 28, 2006
Ex. 901-Sarhan	U.S. Patent No. 9,313,463 (“Sarhan”)	U.S.	June 9, 2010	Apr. 12, 2016
Ex. 901-Savakis	U.S. Patent No. 6,671,405 (“Savakis”)	U.S.	Dec. 14, 1999	Dec. 30, 2003
Ex. 901-Shah	U.S. Patent Pub. No. 2011/0205383 A1 (“Shah”)	U.S.	Feb. 24, 2010	Aug. 25, 2011
Ex. 901-Staudacher238	U.S. Patent No. 9,282,238 (“Staudacher238”)	U.S.	Oct. 29, 2010	Mar. 8, 2016
Ex. 901-Suzuki	U.S. Patent No. 5,831,670 (“Suzuki”)	U.S.	June 18, 1996	Nov. 3, 1998
Ex. 901-Takeuchi	U.S. Patent Pub. No. 2010/0149361 A1 (“Takeuchi”)	U.S.	Oct. 14, 2009	June 17, 2010
Ex. 901-Wu	U.S. Patent No. 9,036,069 (“Wu”)	U.S.	Sept. 12, 2012	May 19, 2015
Ex. 901-Ayagi	JP Patent No. 4,135,100 (“Ayagi”)	Japan	Mar. 22, 2004	Aug. 20, 2008
Ex. 901-Miyashita	JP Patent No. 3,896,505 (“Miyashita”)	Japan	Mar. 12, 2001	Mar. 22, 2007

'901 Patent Prior Art NPL References				
Ex. No.	Title	Date of Publication	Author	Publisher
Ex. 901-Garcia-Molina	Garcia-Molina, H., Database Systems: The Complete Book (2d ed. 2009) (“Garcia-Molina”)	2009	Garcia-Molina, H. et al.	Pearson Prentice Hall

Ex. 901-Liu	T. Liu, Image Quality Assessment Using Multi-Method Fusion (“Liu”)	May 2013	T. Liu	IEEE Transactions on Image Processing
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'901 Patent Prior Art Products/Systems		
Ex. No.	System/Product	Public Disclosure Date
Ex. 901-Canon EOS-1DX	Canon EOS-1DX Digital Camera	March 2012
Ex. 901-Canon SX210 IS	Canon Powershot SX210 IS Digital Camera	June 2010
Ex. 901-Kodak Z990	Kodak Easyshare Max Z990 Digital Camera	May 2011
Ex. 901-Nikon D3100	Nikon D3100 Digital Camera	August 2010
Ex. 901-Nikon D3X	Nikon D3X Digital Camera	December 2008
Ex. 901-Nikon D7000	Nikon D7000 Digital Camera	October 2010
Ex. 901-Nikon S630	Nikon Coolpix S630 Digital Camera	February 2009
Ex. 901-Panasonic GX1	Panasonic Lumix DMC-GX1 Digital Camera	January 2012
Ex. 901-Pentax K-5	Pentax K-5 SLR Digital Camera	December 2010
Ex. 901-ProCamera	IPhone ProCamera Application	2009
Ex. 901-Samsung WB700	Samsung WB700 Digital Camera	December 2010
Ex. 901-Sony A33	Sony A33 Digital Camera	October 2010
Ex. 901-Sony NEX-3 NEX-5	Sony NEX-3/NEX-5 Digital Camera	May 2010
Ex. 901-Sony TX55	Sony DSC-TX55 Digital Camera	2011

'901 Patent Additional Prior Art/Background Art

U.S. Patent Pub. No. 2002/0110286 A1 (“Cheatle”)
U.S. Patent Pub. No. 2010/0214216 A1 (“Nasiri”)
U.S. Patent Pub. No. 2010/0246939 A1 (“Aisaka”)
U.S. Patent Pub. No. 2012/0105662 A1 (“Staudacher”)
U.S. Patent Pub. No. 2008/0013851 A1 (“Ishiwata”)
U.S. Patent No. 8,264,553 (“Joshi”)
U.S. Patent Pub. No. 2011/0150447 A1 (“Li”)
U.S. Patent Pub. No. 2011/0222724 A1 (“Yang”)
U.S. Patent Pub. No. 2007/0283269 A1 (“Obrador”)
U.S. Patent No. 8,682,097 (“Steinberg”)
U.S. Patent Pub. No. 2012/0133746 A1 (“Bigioi”)
U.S. Patent Pub. No. 2013/0076856 A1 (“Wakabayashi”)
U.S. Patent Pub. No. 2008/0192129 A1 (“Walker”)

Discovery is ongoing, and Samsung reserves the right to amend its identification of prior art herein based on additional investigation and third-party discovery.

D. Anticipation

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’901 Patent are anticipated, either expressly or inherently as understood by a person having ordinary skill in the art, by primary references as set forth below and in the attached claim charts. The prior art references or systems listed herein and in the accompanying claim charts may disclose the elements of the Asserted Claims explicitly and/or inherently. To the extent SnapAid asserts that any of the prior art references charted in the attached exhibits fail to explicitly or inherently disclose any element of the Asserted Claims, Samsung contends it would have been obvious to modify such reference to include the allegedly missing element, in view of the knowledge of one of ordinary skill in the art, the admitted prior art of the Asserted Patents, and/or in combination with any of the other prior art references identified in the Exhibits for that respective patent.

E. Obviousness

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’901 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Samsung contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted ’901 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Samsung’s anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

One of the Following Primary References	In Combination with One or More of the Following References
Alhadeef	Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Anon	Alhadeef, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax

	K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Ayagi	Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Canon EOS-1DX	Alhadeef, Anon, Ayagi, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Canon SX210 IS	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Chen	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti,

	Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Fredlund	Alhadeh, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Garcia-Molina	Alhadeh, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Iwane	Alhadeh, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu

Jasinski	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Kim397	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Kim882	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Kodak Z990	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax

	K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Koh	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Kosaka	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Liu	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Lu	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane,

	Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Lv	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Marchesotti	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Meguro	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3

	NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Miyashita	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Mori	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Nepomniachtchi	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Nikon D3100	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori,

	Nepomniachtchi, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Nikon D3X	Alhadeh, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Nikon D7000	Alhadeh, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Nikon S630	Alhadeh, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu

Panasonic GX1	Alhadeh, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Parulski177	Alhadeh, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Pentax K-5	Alhadeh, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Phillips	Alhadeh, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax

	K-5, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Pore	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
ProCamera	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Ramesh	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Samsung WB700	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane,

	Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Sarhan	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Savakis	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Shah	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Sony A33, Sony NEX-3

	NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Sony A33	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Sony NEX-3 NEX-5	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Suzuki, Takeuchi, Wu
Sony TX55	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Staudacher238, Suzuki, Takeuchi, Wu
Staudacher238	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon

	D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Suzuki, Takeuchi, Wu
Suzuki	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Takeuchi, Wu
Takeuchi	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Wu
Wu	Alhadeef, Anon, Ayagi, Canon EOS-1DX, Canon SX210 IS, Chen, Fredlund, Garcia-Molina, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Kosaka, Liu, Lu, Lv, Marchesotti, Meguro, Miyashita, Mori, Nepomniachtchi, Nikon D3100, Nikon D3X, Nikon D7000, Nikon S630, Panasonic GX1, Parulski177, Pentax K-5, Phillips, Pore, ProCamera, Ramesh, Samsung WB700, Sarhan, Savakis, Shah, Sony A33, Sony NEX-3 NEX-5, Sony TX55, Staudacher238, Suzuki, Takeuchi

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have understood that each of these references are in the same field of endeavor, namely real time assessment of picture quality. *See, e.g.*, Ex. 901-Kodak Z990; Ex. 901-Nikon D3X; Takeuchi at ¶¶ 0176, 0147, 0166, ¶¶ 0006–07, Abstract; Kim397 at ¶¶ 0033–35, 0025–26, ¶¶ 0014, 0026, 0015; Mori at ¶¶ 10, 35, 55, 95, Abstract; Savakis at 5:30–61, 4:6–26, 2:45–55, Claims 18, 1; Shah at ¶¶ 0034, 0055, ¶¶ 0072–74, 0072–73, 0071–72; Ex. 901-Ayagi; Ex. 901-Nikon D3100; Ex. 901-ProCamera; Staudacher238 at 3:60–4:8, 4:25–34, 5:56–6:12, 1:48–57, 6:56–7:4; Marchesotti at ¶¶ 0026, 0016, 0025, 0037; Ramesh at ¶¶ 0024, 0025, 0053; Kosaka at Abstract, ¶¶ 0067, 0006, 0099, Abstract; Iwane at 4:4–13, 15:17–24, Abstract, 2:4–21, 1:53–2:3; Alhadeif at 15:7–22, 15:49–62, 3:39–52, 15:52–62, 14:16–30; Lu at 5:66–6:7, 3:20–31, 3:4–14, 12:28–44, Abstract; Fredlund at ¶¶ 0048, 0064, 0069, 0073, ¶¶ 0063–64; Lv at ¶¶ 0083, 0046, 0042, 0027, 0061; Ex. 901-Samsung WB700; Ex. 901-Canon EOS-1DX; Ex. 901-Pentax K-5; Pore Claim 18, ¶¶ 37, 47, Abstract, ¶¶ 0110–11; Suzuki at 18:13–46, 7:19–33, 5:32–48, 16:26–48, 7:44–8:7; Ex. 901-Garcia-Molina; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Chen at Abstract, 1:25–50, 4:6–20, 4:4–20, 4:21–51, 1:16–23; Nepomniachtchi at ¶¶ 0011, 0100, 0010, 0151, 0116; Kim882 at ¶¶ 0051, 0102, 0095, Abstract, ¶¶ 0089–90; Ex. 901-Sony A33; Koh at 5:52–6:5, 12:24–35, 7:26–37, 4:8–19, 14:34–46; Ex. 901-Sony NEX-3 NEX-5; Meguro at ¶¶ 21, 29, 58, 32, Abstract; Ex. 901-Nikon S630; Phillips at ¶¶ 0012, 0080, 0091, 0036, ¶¶ 0091–93; Anon at 1:59–2:8, Abstract, 10:8–25, 5:26–51, 7:55–63; Ex. 901-Panasonic GX1; Ex. 901-Nikon D7000; Jasinski at ¶¶ 0003, 0131, 0088, Claim 25; Ex. 901-Liu; Parulski177 at Abstract, 28:31–57, 34:27–41, 35:8–23, 34:7–26, 28:16–30; Ex. 901-Miyashita; Sarhan at 4:36–5:21, 9:64–10:26, 5:22–44, 1:66–2:26, 1:31–48; Ex. 901-Canon SX210 IS; Ex. 901-Sony TX55.

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, picture quality. *See, e.g.*, Ex. 901-Kodak Z990; Ex. 901-Nikon D3X; Takeuchi at ¶¶ 0176, 0121, ¶¶ 0108–09, 0006–07, Abstract; Kim397 at ¶¶ 0025–26, 0026–27, ¶¶ 0026, 0005, 0025; Mori at ¶¶ 10, 25, Abstract, ¶¶ 0102–03, 0073–74; Savakis at 5:30–61, 3:58–4:5, 4:64–5:29, 4:44–63, Claim 18; Shah at ¶¶ 0034, 0055, 0033, 0093, ¶¶ 0072–74; Ex. 901-Ayagi; Ex. 901-Nikon D3100; Ex. 901-ProCamera; Staudacher238 at 3:60–4:8, 2:7–33, 5:56–6:12, 2:56–3:2, Claim 11; Marchesotti at ¶¶ 0026, 0016, 0037, 0079; Ramesh at ¶¶ 0024, 0020, 0025; Kosaka at ¶¶ 0099, 0006, 0157, 0054, 0067; Iwane at 4:4–13, Abstract, 1:30–42, 4:48–5:5, 5:35–51; Alhadeif at 15:7–22, 14:16–30, 7:3–13, 12:66–13:18, 4:43–55; Lu at 5:66–6:7, 3:4–14, 6:22–28, Abstract, 2:17–24; Fredlund at ¶¶ 0048, 0064, 0034, 0042, ¶¶ 0063–64; Lv at ¶¶ 0083, 0046, 0042, 0045, 0032; Ex. 901-Samsung WB700; Ex. 901-Canon EOS-1DX; Ex. 901-Pentax K-5; Pore Claim 18, ¶¶ 37, 47, 48, Abstract; Suzuki at 3:37–67, 4:16–33, Abstract, 18:13–46, Claim 20; Ex. 901-Garcia-Molina; Wu at 7:60–8:20, 5:17–32, 8:44–63, 4:66–5:16, 5:33–52; Chen at 1:25–50, 4:6–20, 4:4–20, 3:52–4:3, 1:16–23; Nepomniachtchi at ¶¶ 0100, 0011, 0154, 0184, 0212; Kim882 at ¶¶ 0051, 0052, 0006, Abstract; Ex. 901-Sony A33; Koh at 5:52–6:5, 5:36–51, 4:8–19, 6:56–7:2, 6:6–22; Ex. 901-Sony NEX-3 NEX-5; Meguro at ¶¶ 21, 6, 64, 80, Abstract; Ex. 901-Nikon S630; Phillips at ¶¶ 0012, 0091, 0094, 0008, ¶¶ 0091–93; Anon at 1:59–2:8, Abstract, 5:26–51, 2:64–3:14, 2:9–15; Ex. 901-Panasonic GX1; Ex. 901-Nikon D7000; Jasinski at ¶¶ 0003, 0063, 0082, Claim 25; Ex. 901-Liu; Parulski177 at 28:31–57, 28:31–52, 28:16–30, 34:27–41, 34:7–26; Ex. 901-Miyashita; Sarhan at 4:36–5:21, 9:64–10:26, 5:22–44, 1:66–2:26, 4:36–61; Ex. 901-Canon SX210 IS; Ex. 901-Sony TX55.

Further, the Asserted Claims of the '901 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—

i.e., the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe “[a] method for estimating quality of at least one image from a plurality of images, for use with a device that comprises in a single enclosure a digital camera module or functionality that comprises at least one optical lens for focusing received light from a scene and an image sensor coupled to the optical lens for capturing an image of the scene; a motion sensor for sensing the device motion; wherein the motion sensor consists of, or comprises, an accelerometer, a gyroscope or both, and a processor coupled to at least one image sensor and to the digital camera for receiving data therefrom, the method by the processor comprising use of at least one value and weight.” *See, e.g.*, Ex. 901-Kodak Z990 at 1[pre]; Ex. 901-Nikon D3X at 1[pre]; Takeuchi at ¶¶ 0006–07, 0087–88, 0095–96, Claim 6, ¶¶ 0086, 0089, 0102, 0103, 0094, 0097, 0137, 0138, 0153, 0154, 0304; Kim397 at ¶¶ 0005, 0006, 0007, 0022, 0024, 0029, ¶¶ 0025–26; Mori at Abstract, ¶¶ 10, 25, 26, 31, 33, 35, 0069, 0072, ¶¶ 0070–71; Savakis at 2:5–22, 2:45–55, 2:56–62, 12:29–39, 13:4–15, 13:25–33, 15:39–52, 16:3–40; Shah at ¶¶ 0030, 0038, 0039, 0041, 0042, 0044, 0052, 0053, 0054, 0055, 0056, 0069, 0070, 0075, 0076, ¶¶ 0071–72; Ex. 901-Ayagi at 1[pre]; Ex. 901-Nikon D3100 at 1[pre]; Ex. 901-ProCamera at 1[pre]; Staudacher238 at 1:26–47, 2:1–6, 2:7–33, 2:34–55, 3:51–59, 3:60–4:8, 4:9–24, 4:25–34, Abstract, 1:7–15; Marchesotti at ¶¶ 0002, 0023, 0025, 0031, 0035, 0037; Ramesh at ¶¶ 0021, 0004, 0005, 0024, 0025, 0029, 0030, Abstract; Kosaka at ¶¶ 0008, 0005, 0006, 0011, 0054, 0055, 0056, 0058, 0059, 0060, Claims 16, 1, ¶¶ 0013–17, 0061–62; Iwane at Abstract, 3:40–50, 3:51–60, 4:4–13, 4:39–45, 4:48–5:5, 5:8–23; Alhadeif at 3:10–11, 3:14–21, 3:22–30, 3:53–64, 3:65–4:3, 4:4–6, 7:38–52, 9:59–64, 9:65–10:3, 10:4–14, 15:37–41; Lu at Abstract, 3:32–42, 6:66–7:2, 7:16–23, 10:54–57, 13:13–20; Fredlund at ¶¶ 0033, 0034, 0035, 0036, 0037, 0038, 0041, 0042, 0045, 0047, 0048, 0049, 0058, 0059, 0060; Lv at ¶¶ 0002, 0006, 0026, 0029, 0049, 0050, 0051, 0079, 0080,

0083; Ex. 901-Samsung WB700 at 1[pre]; Ex. 901-Canon EOS-1DX at 1[pre]; Ex. 901-Pentax K-5 at 1[pre]; Pore at ¶¶ 4, 7, 18, 24, 27, 28, 31, 37; Suzuki Claims 21, 18, 16, 3:27–36, 3:37–67, 4:1–12, 1:49–58, 7:34–43; Ex. 901-Garcia-Molina at 1[pre]; Wu at 2:27–37, 2:56–3:5, 5:17–32, 6:34–40, 6:41–53, 7:60–8:20, 9:55–10:3, 10:20–35; Chen at 1:9–13, 3:52–4:3, 1:54–57, 2:17–39, Claim 25; Nepomniachtchi at ¶¶ 0108, 0109, 0110, 0124, 0125, 0175, 0178, 0174; Kim882 at Abstract, ¶¶ 0002, 0042, 0044, 0050, 0108, ¶¶ 0047–48; Ex. 901-Sony A33 at 1[pre]; Koh at 4:8–12, 4:36–37, 5:36–51, 5:52–6:5, 6:16–22, 7:3–7; Ex. 901-Sony NEX-3 NEX-5 at 1[pre]; Meguro at Abstract, ¶¶ 19, 20, 21, 22, 23, 6, 45; Ex. 901-Nikon S630 at 1[pre]; Phillips at ¶¶ 0065, 0015, 0016, 0021, 0141, 0185, 0008, 0022, 0023, ¶¶ 0142–43; Anon at Abstract, 1:14–17, 1:21–32, 1:59–2:8, 2:64–3:14, 3:15–26, 4:24–33, 5:53–6:8, 6:9–15, 10:2–7, 10:8–25, 10:27–46; Ex. 901-Panasonic GX1 at 1[pre]; Ex. 901-Nikon D7000 at 1[pre]; Jasinski at ¶¶ 0002, 0003, 0045, 0051, 0052, 0053, 0061, 0073, 0084, 0085, 0135, 0136; Ex. 901-Liu at 1[pre]; Parulski177 at 5:50–63, 8:53–58, 9:13–27, 10:57–64, 10:65–11:2, 11:3–18, 11:19–31, 11:33–39, 11:40–50, 24:36–49, 27:14–24, 32:34–46; Ex. 901-Miyashita at 1[pre]; Sarhan at Abstract, 1:66–2:26, 3:17–51, 4:16–23, 4:36–5:21; Ex. 901-Canon SX210 IS at 1[pre]; Ex. 901-Sony TX55 at 1[pre].

The prior art references further describe “obtaining a first value (QI1) responsive to the device angle to the horizon.” *See, e.g.*, Ex. 901-Kodak Z990 at 1[a]; Ex. 901-Nikon D3X at 1[a]; Takeuchi at Abstract, ¶¶ 0176, 0177, 0103, 0104, 0085, 0086, 0089, 0090, 0091, 0112, 0298, 0299, 0300; Kim397 at ¶¶ 0009, 0014, 0015, 0025, 0035, 0039, ¶¶ 0032–34; Mori at ¶¶ 0069, 0072, 79, 80, 81, 105, 106, 107, ¶¶ 0070–71; Ex. 901-Ayagi at 1[a]; Ex. 901-Nikon D3100 at 1[a]; Ex. 901-ProCamera at 1[a]; Staudacher238 at 1:26–47, 1:48–57, 2:1–6, 2:7–33, 2:34–55, 4:25–34, 4:35–50, 5:6–22; Ramesh at ¶¶ 0039, 0035, 0033, 0034, 0036, ¶¶ 0037–38; Kosaka at ¶¶ 0043–44, ¶¶ 0058, 0061, 0066, 0083, 0085, 0128, 0129; Alhadeif at 1:16–24, 1:34–45, 4:28–31, 4:33–35, 7:63–

8:14, 8:15–29, 9:59–64, 14:56–63, 1:9–10; Fredlund at ¶¶ 0047, 0071, 0074, 0075, 0078, 0017, 0022, 0070; Lv at ¶¶ 0045, 0046, 0049, 0050, 0051, 0032, 0035, 0079, 0083; Ex. 901-Samsung WB700 at 1[a]; Ex. 901-Canon EOS-1DX at 1[a]; Ex. 901-Pentax K-5 at 1[a]; Pore at ¶¶ 31, 32, 38, 41, 42, 45, 47, 48; Suzuki at Abstract, 1:12–32, 1:33–46, 1:49–58, 3:27–36, 4:16–33, 6:12–18, 6:19–32, 6:33–56, 7:34–43, 8:55–9:8, 9:9–27, 9:28–47, 9:48–51, 9:52–10:5, 10:6–18, 19:7–15, 19:16–42, 21:40–56; Ex. 901-Garcia-Molina at 1[a]; Wu at 6:34–40, 7:60–8:20, 8:21–30, 2:43–48, 3:58–67, 13:4–24, 13:25–38, 13:39–44, 10:51–60, 10:61–11:6, 11:7–16; Chen at 3:52–4:3, 4:21–51, 4:63–5:6, 5:7–26, 6:53–54, 8:52–61, 1:9–13; Nepomniachtchi at ¶¶ 0108, 0109, 0119, 0198, 0199, 0300, 0130, 0184; Kim882 at ¶¶ 0066, 0067, 0068, 0062, 0039, ¶¶ 0018–19, 0008–09, 0091–92; Ex. 901-Sony A33 at 1[a]; Koh at 6:34–39, 6:40–55, 6:56–7:2, 7:3–7, 11:36–51, 13:15–34; Ex. 901-Sony NEX-3 NEX-5 at 1[a]; Meguro at ¶¶ 45, 47, 61, 64, 65, 66, 67, 68, 70, 80, 81, 82; Ex. 901-Nikon S630 at 1[a]; Anon at 1:14–17, 4:24–33, 7:4–14, 7:30–41, 7:43–54, 7:55–63, 7:64–8:13, 8:15–31, 8:32–43, 8:44–54, 8:65–9:25, 9:35–55; Ex. 901-Panasonic GX1 at 1[a]; Ex. 901-Nikon D7000 at 1[a]; Jasinski at ¶¶ 0051, 0052, 0010, 0034, 0136, ¶¶ 0008–09; Ex. 901-Liu at 1[a]; Parulski177 at 24:5–12, 21:40–54, 21:55–63, 22:9–17, 22:63–23:11, 23:12–22, 20:19–36; Ex. 901-Miyashita at 1[a]; Sarhan at 6:37–51, 3:17–51, 6:13–21, 1:31–48, 1:49–62, 1:66–2:26; Ex. 901-Canon SX210 IS at 1[a]; Ex. 901-Sony TX55 at 1[a].

The prior art references further describe “estimating a first weight (c1) associated with the first value.” *See, e.g.*, Ex. 901-Kodak Z990 at 1[b]; Ex. 901-Nikon D3X at 1[b]; Takeuchi at ¶¶ 0132, 0234, 0227, 0253, 0254, 0260, 0261, 0269, 0262, 0263, ¶¶ 0256–57; Kim397 at Abstract, ¶¶ 0014, 0015, 0038, 0044; Mori at ¶¶ 33, 40, 51, 54, 55, 72, 80, 81, 82, 100, 101, 102; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:35–40, 13:43–45, 13:47–54, 13:18–33; Ex. 901-Ayagi at 1[b]; Ex. 901-Nikon D3100 at 1[b]; Ex. 901-ProCamera at 1[b]; Staudacher238 at 2:34–55, 4:25–

34, 4:35–50, 4:51–5:5, 5:6–22, Claims 7, 14, 11; Marchesotti at ¶¶ 0099, 0101, 0104, 0105, 0091, 0080, 0042, ¶¶ 0092–93, 0096–97; Ramesh at ¶¶ 0030, 0039, 0040, 0041, 0006, 0034, 0031, 0062, Claim 10; Kosaka at ¶¶ 0058, 0107, 0108, 0112, 0113, 0120, 0121, 0153, 0154; Iwane at 4:48–5:5, 13:54–67, 14:48–57, 14:58–67, 2:4–21; Alhadeef at 11:40–54, 12:45–56, 14:27–30, 14:46–55, 9:35–43, 8:59–62, 12:57–65, 12:66–13:18, 13:19–25; Lu at 4:50–53, 7:16–19, 10:54–57, 11:8–10; Fredlund at ¶¶ 0087, 0088, 0089, 0075, 0076, 0079, 0080; Lv at ¶¶ 0006, 0032, 0042, 0044, 0045, 0046, 0047, 0048, 0049, 0050, 0051, 0061, 0062, 0063, 0066, 0068; Ex. 901-Samsung WB700 at 1[b]; Ex. 901-Canon EOS-1DX at 1[b]; Ex. 901-Pentax K-5 at 1[b]; Pore at ¶¶ 0110–11, 0008–09, ¶¶ 48, 7, 21, 19; Suzuki at 5:4–13, 6:33–56, 7:5–18, 7:44–8:7, 8:55–9:8, 9:9–27, 9:28–49, 21:1–8; Ex. 901-Garcia-Molina at 1[b]; Wu at 14:4–21, 14:22–26, 11:7–16, 5:53–61, 9:6–14, 5:33–52, 13:56–14:1, 14:27–41; Chen at 8:52–61; Nepomniachtchi at ¶¶ 0267, 0151, 0152, 0189, 0191, 0356, 0153; Kim882 at ¶¶ 0067, 0077, 0097, 0099, 0100, 0006, 0010, 0062; Ex. 901-Sony A33 at 1[b]; Koh at 6:56–7:2, 7:3–12, 7:13–25, 11:14–18, 11:59–61, 11:62–12:12, 12:36–56; Ex. 901-Sony NEX-3 NEX-5 at 1[b]; Meguro at ¶¶ 102, 103, 104, 67, 54, 98, 82, 72; Ex. 901-Nikon S630 at 1[b]; Phillips at ¶¶ 0023, 0026, 0029, 0030, 0032, 0181, 0182; Anon at 1:59–2:8, 5:26–51, 7:4–14, 7:15–29, 8:32–35, 3:53–4:3, 4:4–23, 4:24–33, 4:42–55, 9:26–34, 9:56–63, 10:48–50, 12:1–8; Ex. 901-Panasonic GX1 at 1[b]; Ex. 901-Nikon D7000 at 1[b]; Jasinski at ¶¶ 0031, 0114, 0120, 0121, 0122, 0123, 0126, 0019; Ex. 901-Liu at 1[b]; Parulski177 at 14:48–15:4, 15:5–11, 15:13–46, 15:47–53, 25:22–35, 25:14–21, 14:46–15:4; Ex. 901-Miyashita at 1[b]; Sarhan at 9:19–29, 9:64–10:14, 10:37–48, 4:36–5:21, 9:30–51, 3:8–16, 5:45–61; Ex. 901-Canon SX210 IS at 1[b]; Ex. 901-Sony TX55 at 1[b].

The prior art references further describe “obtaining a second value (QI2) associated with an aesthetic quality of image based on the composition.” *See, e.g.*, Ex. 901-Kodak Z990 at 1[c];

Ex. 901-Nikon D3X at 1[c]; Takeuchi at ¶¶ 0164, 0121, 0123, 0124, 0125, 0139, 0201, 0202; Kim397 at ¶¶ 0005, 0026, 0028, 0035, 0044, ¶¶ 0032–34, 0038–39; Mori at ¶¶ 0100, 0101, 0060, 0061, ¶¶ 0102–03, 0062–63; Savakis at 2:23–36, 9:56–63, 9:65–10:28, 11:30–39, 11:43–56, 11:60–12:4, 12:8, 12:10–24, 12:27, Claim 38; Shah at ¶¶ 0036–37, ¶¶ 0040, 0091, 0101, 0102; Ex. 901-Ayagi at 1[c]; Ex. 901-Nikon D3100 at 1[c]; Ex. 901-ProCamera at 1[c]; Staudacher238 at 2:1–6, 2:7–33, 2:34–55, 4:9–24, 4:25–34, 4:35–50, 5:6–22, 6:56–7:4; Marchesotti at ¶¶ 0005, 0028, 0077, 0078, 0079, 0076, 0051; Ramesh at Abstract, ¶¶ 0004, 0005, 0006, 0029, 0030, 0031, 0056, ¶¶ 0057–58; Kosaka at ¶¶ 0063, 0066, 0067, 0070, 0077, 0080, 0083, 0084, 0085, 0141, 0105, 0113, ¶¶ 0078–79, 0142–44, 0103–04, 0111–12; Iwane at 4:48–5:5, 5:35–51, 6:9–14, 6:15–29, 14:22–34; Alhadeef at 14:28–30, 14:46–55, 14:56–63, 15:7–22, 4:7–12, 7:44–57, 15:1–6, 2:36–50, 3:7–15, 3:16–30, 12:45–56, 12:57–65, 12:66–13:18, 13:19–25; Lu at 7:20–27, 3:43–52, 9:46–51, 9:53–62, 9:64–67, 10:2–5, 10:7–15, 10:18–20, 10:22–24, 10:36–42, 10:44–53, 7:16–19, 3:32–42, 9:38–44, 11:5; Fredlund at ¶¶ 0086, 0087, 0089, 0026, 0051, 0071, 0090, 0024; Lv at ¶¶ 0042, 0043, 0045, 0032, 0036, 0051, ¶¶ 0071–72; Ex. 901-Samsung WB700 at 1[c]; Ex. 901-Canon EOS-1DX at 1[c]; Ex. 901-Pentax K-5 at 1[c]; Pore at ¶¶ 7, 19, 21, 47, 48, 51, 53, 54, 109, 110; Suzuki at 1:9–10, 1:49–58, 6:57–7:4, 7:5–18, 7:44–8:7, 8:18–32, 24:11–23, 24:24–38, 19:7–15, 19:16–28; Ex. 901-Garcia-Molina at 1[c]; Wu at Abstract, 4:25–42, 4:43–58, 4:59–65, 6:7–19, 7:31–46, 7:47–59, 14:56–15:5, 15:6–23; Chen at 1:16–23, 1:25–50, 1:54–57, 4:52–62, 1:58–2:3, 4:63–5:3, 9:50–51, 7:53–56; Nepomniachtchi at ¶¶ 0100, 0102, 0111, 0122, 0125, 0130, 0332, ¶¶ 0120–21, 0330–31; Kim882 at ¶¶ 0003–04, ¶¶ 0006, 0072, 0077, 0082, 0107, 0109; Ex. 901-Sony A33 at 1[c]; Koh at 1:53–60, 2:5–8, 2:48–58, 3:1–12, 6:6–22, 9:22–35, 11:52–61, 11:62–12:12, 12:36–56, 12:57–67, 13:1–14; Ex. 901-Sony NEX-3 NEX-5 at 1[c]; Meguro at ¶¶ 0041–42, 0030–31, ¶¶ 0043, 0044, 0045, 68, 101, 102, 7, 8; Ex. 901-Nikon S630 at 1[c]; Phillips at ¶¶ 0022, 0023,

0027, 0028, 0029, 0030, 0031, 0032, 0034, 0066, 0083, 0152; Anon at 1:33–40, 2:64–3:14, 3:43–52, 3:53–4:3, 4:4–23, 4:24–33, 4:34–41, 4:42–55, 4:56–5:25, 5:26–51, 6:42–50, 7:4–14, 8:15–31, 10:27–46; Ex. 901-Panasonic GX1 at 1[c]; Ex. 901-Nikon D7000 at 1[c]; Jasinski at ¶¶ 0111, 0112, 0113, 0114, 0115, 0118, 0120, 0121, 0062, 0063, 0064, ¶¶ 0116–17; Ex. 901-Liu at 1[c]; Parulski177 at 17:18–33, 17:34–56, 20:62–21:5, 21:6–16, 21:64–22:8, 22:9–17, 25:60–26:10, 27:61–28:2; Ex. 901-Miyashita at 1[c]; Sarhan at 4:36–5:21, 5:22–44, 12:1–23, Abstract, 1:66–2:26, 3:17–51; Ex. 901-Canon SX210 IS at 1[c]; Ex. 901-Sony TX55 at 1[c].

The prior art references further describe “estimating a second weight (c2) associated with the second value.” *See, e.g.*, Ex. 901-Kodak Z990 at 1[d]; Ex. 901-Nikon D3X at 1[d]; Takeuchi at ¶¶ 0260, 0261, 0262, 0263, 0032, 0026, 0027, 0028; Kim397 at Abstract, ¶¶ 0014, 0015, 0044, ¶¶ 0038–39; Mori at ¶¶ 33, 40, 51, 55, 95, 32, 41; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:35–40, 13:43–45, 13:47–54, 14:6–17, 2:5–22, 4:64–5:29, 2:23–36, 5:30–61, 2:37–44, 5:62–64, 2:45–55; Shah at ¶¶ 0028, 0034, 0089, 0090, 0091, 0098, ¶¶ 0072–74; Ex. 901-Ayagi at 1[d]; Ex. 901-Nikon D3100 at 1[d]; Ex. 901-ProCamera at 1[d]; Staudacher238 at 2:34–55, 4:25–34, 4:35–50, 4:51–5:5, 5:6–22, Abstract, 2:1–6, 3:24–36; Marchesotti at ¶¶ 0080, 0091, 0100, 0104, 0105, 0030, 0042, 0023, ¶¶ 0092–93, 0096–97, 0098–99; Ramesh at ¶¶ 0006, 0030, 0041, 0034, 0039, 0029, Claim 10; Kosaka at ¶¶ 0058, 0129, 0130, 0112, 0113, 0114, 0120, 0121; Iwane at 4:48–5:5; Alhadeef at 7:53–57, 8:59–62, 9:35–39, 12:45–56, 13:19–25, 14:16–30, 14:46–48; Lu at 4:50–53, 1:33–35, 2:25–27, 3:66–4:3, Claim 4; Fredlund at ¶¶ 0058, 0059, 0061, 0064, 0067, 0068, 0075, 0087; Ex. 901-Samsung WB700 at 1[d]; Ex. 901-Canon EOS-1DX at 1[d]; Ex. 901-Pentax K-5 at 1[d]; Pore at ¶¶ 48, 0109, 0110, 49, 21, 0007, ¶¶ 0111–14, 0008–09; Suzuki at 5:4–13, 6:10, 6:12–18, 6:33–53, 7:5–18, 7:44–8:7, 17:40–64, 17:65–18:12; Ex. 901-Garcia-Molina at 1[d]; Wu at 12:40–61, 13:4–24, 13:25–38, 13:39–44, 5:17–32, 5:33–52, 5:53–61, 5:62–6:6, 14:4–21, 14:22–

26, 14:27–41, 4:43–58, 4:59–65, 2:27–42, 2:43–55, 2:56–3:5, 3:6–16, 7:47–59, 7:60–8:20; Chen at 8:17–39, 6:53–54, 8:52–61, 7:4–8, 7:30–33, 9:50–51, 7:57–8:7; Nepomniachtchi at ¶¶ 0267, 0268, 0330, 0335, 0407, ¶¶ 0395–96, 0398–99; Kim882 at ¶¶ 0077, 0016, 0020, 0021, 0069, 0006, ¶¶ 0075–76, 0081–82; Ex. 901-Sony A33 at 1[d]; Ex. 901-Sony NEX-3 NEX-5 at 1[d]; Meguro at ¶¶ 42, 43, 44, 45, 47, 48, 50, 51, 52, 53, 54, 55, 67, 68, 71, 72, 82, 83, 84, 85, 86, 103, 104; Ex. 901-Nikon S630 at 1[d]; Phillips at ¶¶ 0023, 0029, 0030, 0032, 0079, 0080, 0090, 0091, 0095; Anon at 4:42–51, 8:32–35, 3:53–4:3, 4:4–23, 4:52–55, 5:26–51, 8:15–31, 9:26–34, 10:27–46; Ex. 901-Panasonic GX1 at 1[d]; Ex. 901-Nikon D7000 at 1[d]; Jasinski at ¶¶ 0028, 0030, 0120, 0121, 0122, 0126, 0128, 0129, 0130, 0131; Ex. 901-Liu at 1[d]; Parulski177 at 19:1–19, 37:23–40, 37:44–52, 20:33–36, 20:38–60, 20:62–21:5, 27:61–28:2; Ex. 901-Miyashita at 1[d]; Sarhan at 6:52–7:26, 7:27–38, 9:19–29, 9:64–10:26, 1:66–2:26; Ex. 901-Canon SX210 IS at 1[d]; Ex. 901-Sony TX55 at 1[d].

The prior art references further describe “wherein at least one of said values is below threshold, to select, at least one appropriate suggestion from a pre-stored table of suggestions of how a user may cause at least one of QI1 or QI2, to be above said threshold and to present said appropriate suggestion to the user.” *See, e.g.*, Ex. 901-Kodak Z990 at 1[e]; Ex. 901-Nikon D3X at 1[e]; Takeuchi at ¶¶ 0290, 0291, 0293, 0294, 0302, 0303, 0011, 0012, 0176, 0177, 0178, 0179, 0304, Claim 25; Kim397 at ¶¶ 0033–35, 0041–43, 0024–25, 0026–27, ¶¶ 0005, 0006, 0007, 0028, 0044; Mori at ¶¶ 0072, 81, 5, 6, 100, 101, 102, 3, ¶¶ 0073–74, Abstract; Shah at ¶¶ 0086, 0087, 0091, 0092, 0093, 0004, ¶¶ 0088–89; Ex. 901-Ayagi at 1[e]; Ex. 901-Nikon D3100 at 1[e]; Ex. 901-ProCamera at 1[e]; Staudacher238 at 3:3–8, 3:9–23, 3:24–36, 3:37–50, 5:23–42, 5:43–55, 5:56–6:3, 6:13–33; Marchesotti at ¶¶ 0112, 0107, 0048, 0091, 0026, 0027, 0028, 0029, 0106, ¶¶ 0108–09, 0110–11; Ramesh at ¶¶ 0030, 0040, 0041, 0024, 0025, 0027; Kosaka at ¶¶ 0081, 0083,

0084, 0085, 0086, 0089, 0090, 0091, 0092, 0098, 0099, 0100, 0149, 0156, 0157, 0158, 0162, 0163, ¶¶ 0087–88, 0150–51, 0160–61; Iwane at 5:52–57, 6:9–14, 6:15–29, 7:58–64, 8:14–26, 16:6–8; Alhadeif at 14:46–55, 14:56–63, 15:1–12, 15:13–25, 15:35–48, 15:49–62, 4:43–55, 4:56–67, 5:1, 5:4–14, 12:17–19, 3:46–52, 3:53–64, 3:65–4:3, 4:4–6; Lu at 6:37–46, 6:48–59, 10:44–57, 11:5, 3:20–31, 3:32–42, 3:43–52, 9:38–44, 9:46–51, 9:53–62, 12:28–44, 13:1–10, 13:11–20; Fredlund at ¶¶ 0080, 0085, 0086, 0087, 0088, 0089, 0075, 0100; Lv at ¶¶ 0007, 0042, 0044, 0046, 0047, 0048, 0078, 0079, 0080, 0081, 0082, 0083, ¶¶ 0008–09; Ex. 901-Samsung WB700 at 1[e]; Ex. 901-Canon EOS-1DX at 1[e]; Ex. 901-Pentax K-5 at 1[e]; Pore at ¶¶ 109, 110, 50, 36, 37, 18, 48, 49; Suzuki at 1:12–32, 1:33–46, 4:34–42, 6:27–32, 6:33–56, 6:57–7:4, 7:34–43, 9:28–47, 19:7–15, 19:16–28, 20:36–55, 20:56–67, 22:1–20, 23:13–30, 23:50–24:3, 24:54–67; Ex. 901-Garcia-Molina at 1[e]; Wu at Abstract, 2:27–42, 5:17–32, 5:33–52, 5:53–61, 10:36–50, 10:51–60, 10:61–11:6, 11:7–16, 11:17–26, 8:31–43, 8:44–63, 8:64–9:5, 9:6–14, 9:15–30, 9:31–43, 14:56–15:2; Chen at 7:30–33, 9:50–51, 1:58–2:3, 2:4–16, 9:52–10:9, 1:54–57, 7:53–56; Nepomniachtchi at ¶¶ 0125, 0129, 0130, 0188, 0189, 0190, 0205, 0349, 0350, 0388, 0389, 0407, 0409, 0410, 0419, ¶¶ 0126–28, 0386–87, 0417–18; Kim882 Claim 20, ¶¶ 0024, 0084, 0088, 0099, 0100, 0101, 0102, 0006, 0007, 0014, ¶¶ 0085–86, 0089–90; Ex. 901-Sony A33 at 1[e]; Koh at 8:56–9:9, 11:62–12:12, 12:13–23, 12:24–35, 12:36–56, 9:57–10:11, 10:12–32, 10:43–59, 10:60–11:13, 11:14–18, 2:48–58, 2:59–67; Ex. 901-Sony NEX-3 NEX-5 at 1[e]; Meguro at ¶¶ 94, 71, 72, 48, 79, 54, 103, 106, 107; Ex. 901-Nikon S630 at 1[e]; Phillips at ¶¶ 0024, 0030, 0080, 0081, 0185; Anon at 1:59–2:8, 2:29–38, 4:4–23, 5:53–6:8, 6:9–15, 6:42–50, 7:15–29, 7:30–41, 7:43–54, 7:55–63, 7:64–8:13, 8:65–9:25; Ex. 901-Panasonic GX1 at 1[e]; Ex. 901-Nikon D7000 at 1[e]; Jasinski at ¶¶ 0081, 0082, 0083, 0084, 0087, 0088, 0028, 0130; Ex. 901-Liu at 1[e]; Parulski177 at 31:18–34, 31:56–32:4, 36:10–16, 36:57–61, 36:62–37:5, 37:6–22, 37:23–40, 27:25–32, 23:33–51, 28:5–15, 28:16–

30; Ex. 901-Miyashita at 1[e]; Sarhan at 3:52–4:2, 4:3–15, 9:30–51, 10:49–11:18, 4:36–5:21, 12:1–23, 3:17–51, 6:29–36; Ex. 901-Canon SX210 IS at 1[e]; Ex. 901-Sony TX55 at 1[e].

Other examples of these concepts are cited in the attached charts for the above references. See Appendix A, Exhibits 901-Alhadeh through 901-Wu. It would have been known and simple to take prior art for real time assessment of picture quality by comparison with similar objects, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving picture quality. *Id.*

Samsung is not aware of any secondary considerations supporting non-obviousness of the '901 Patent claims. To the extent SnapAid seeks to introduce any alleged secondary considerations in the future, Samsung reserves the right to respond at that time.

F. Invalidity Under Section 112

Samsung provides an identification of the limitations of the '901 Patent that are invalid based on indefiniteness under pre-AIA 35 U.S.C. § 112 ¶ 2, or enablement or written description under pre-AIA 35 U.S.C. § 112 ¶ 1. These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1–11, 13–20 of the '901 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). For example, as applied in SnapAid’s Infringement Contentions, the terms “an aesthetic quality of image based on the composition,” “appropriate suggestion,” “obstruction of at least one optical lens,” “wherein the second value (QI2) associated with the aesthetic quality is partially based on detected objects,” “grading the image quality according to, or based on, a total value,” “under or over exposure of the image,”

“calculating a total image quality,” and “where the object recognition can change importance of certain areas in the image for calculating purpose of said second value (QI2): over or under exposure value” are indefinite because they are not only subjective but also do not have a meaning that can be clearly determined from the patent, and thus fail to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1–11, 13–20 of the '901 Patent are invalid under § 112 ¶ 1, because the specification as filed does not contain a sufficient written description supporting those claims. For example, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of SnapAid’s contentions. For example, Asserted Claims 1–11, 13–20 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following reasons: the '901 Patent fails to provide an adequate written description of the phrases “obtaining a second value (QI2) associated with an aesthetic quality of image based on the composition,” “calculating a total image quality,” “a time-dependent confidence level,” “a probability distribution function,” “multiple motion or location sensors for sensing the device motion selected from a group consisting of a gyroscope, accelerometer, Global Positioning System (GPS), 9 Degrees of Freedom (DOF) sensing component, and 10 Degrees of Freedom (DOG) sensing component,” “grading the image quality according to, or based on, a total value,” and “wherein the first weight (c1) is estimated according to, or based on, a precision error, reading resolution, or drift in time, of the motion or location sensor, and wherein the motion or location sensor consists of, or comprises, an accelerometer, a gyroscope, a Global Positioning System (GPS), or a step counter” as applied in SnapAid’s Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the '901 Patent. The subject matter of these claims, as described above, is not sufficiently shown in the specification of the '901 Patent. The subject matter of these claims, as described above, is not sufficiently enabled because the '901 patent specification does not teach one skilled in the art how to make and use the alleged invention. For example, the '901 Patent fails to enable the following and thus, Asserted Claims 1–11, 13–20 of the '901 Patent are invalid: “estimating a first weight (c1) associated with the first value,” “estimating a second weight (c2) associated with the second value,” “obtaining a second value (QI2) associated with an aesthetic quality of image based on the composition,” “calculating a total image quality,” and “a time-dependent confidence level.” The foregoing phrases are not described in such a way that one of ordinary skill in the art could implement them to achieve the results sought by the individual named on the face of the '901 Patent as the inventor. The foregoing phrases are not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '901 Patent was in possession of the claimed subject matter. The Asserted Claims of the '901 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on SnapAid in accordance with the Court’s Scheduling Order.

G. Invalidity Under Section 101

The asserted claims of the '901 patent are invalid under *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208 (2014) because they are directed to patent-ineligible subject matter and fail to include an “inventive concept,” *i.e.*, some additional element or combination of elements “sufficient to

ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” 573 U.S. 208, 217–18 (2014).

The asserted claims of the ’901 patent are directed to a patent-ineligible concept—namely, the abstract idea of assessing picture quality and suggesting that the photographer take another picture after making an adjustment, such as to the photographer’s location or angle. The claims are directed to a process that photographers conduct in their minds—assessing a picture’s quality and then taking a new picture to try to get a better picture—which renders them abstract under Federal Circuit case law holding that “methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas—the ‘basic tools of scientific and technological work’ that are open to all.” *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)); *PersonalWeb Techs. LLC v. Google LLC*, 8 F.4th 1310, 1316 (Fed. Cir. 2021); *Longitude Licensing Ltd. v. Google LLC*, 2025 WL 1249136, at *2 (Fed. Cir. Apr. 30, 2025); *Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021); *Broadband iTV, Inc. v. Amazon.com, Inc.*, 113 F.4th 1359, 1371 (Fed. Cir. 2024); *USC IP P’ship, L.P. v. Meta Platforms, Inc.*, 2023 WL 5606977, at *2 (Fed. Cir. Aug. 30, 2023). This is further confirmed by the specification, which provides that the claimed inventions “utilize camera hardware ... to evaluate pictures taken in real time, and actively assist in obtaining the best picture given the circumstances at hand.” ’901 Pat., 2:19-23.

The asserted claims of the ’901 patent also lack any inventive concept and merely implement the abstract idea of taking a better picture using generic camera components—an “image sensor,” an “optical lens,” a “motion sensor,” and a “processor.” ’901 Pat., Cl. 1. The inventor of the ’901 patent does not purport to have invented these components or described or claimed any specific improvement in their functionality. To the contrary, the specification

confirms that these are conventional components. *See, e.g.*, '901 Pat., 6:26-27 (“Any suitable input device, such as but not limited to a sensor, may be used ...”), 6:31-32 (“Any suitable processor may be employed to compute or generate information as described herein ...”). That these components are known and conventional is further demonstrated by their disclosure throughout the prior art disclosed in these contentions. Further, the dependent claims similarly recite additional generic limitations that fail to add any inventive concept, and are therefore patent-ineligible. *See In re Bd. of Trs. of Leland Stanford Junior Univ.*, 991 F.3d 1245, 1250 (Fed. Cir. 2021); *Braemar Mfg., LLC v. ScottCare Corp.*, 816 F. App'x 465, 470 (Fed. Cir. 2020); *In re TLI Commc'ns LLC Pat. Litig.*, 823 F.3d 607, 611 (Fed Cir. 2016). Accordingly, the asserted claims of the '901 patent are patent-ineligible under § 101.

X. INVALIDITY CONTENTIONS FOR THE '682 PATENT

A. General State of the Art at the Time of the Alleged Inventions

The prior art references identified in these Invalidity Contentions, and the “References Cited” on the face of the '682 Patent, may provide background and context pertinent to the teachings in, and interpretation of, the prior art referenced by the attached claim charts. Samsung may rely upon that prior art, including the “References Cited” on the face of the '682 Patent, to demonstrate the general state of the art at the time of the alleged inventions and what one of ordinary skill in the art would have understood at a time prior to the date of the alleged invention of the Asserted Claims. This prior art is exemplary only and is not in any way intended to limit the scope of what one of ordinary skill in the art would have understood at the times of the alleged inventions. Samsung reserves the right to rely upon additional prior art, information, and/or knowledge to demonstrate what one of ordinary skill would have understood at any time prior to the date of alleged invention of the Asserted Claims.

B. Claim Charts

The claim charts attached in Appendix A as Exhibits 682-Aisaka through 682-Yang identify where each limitation of the Asserted Claims of the '682 Patent is found in the prior art.

C. Identification of the Prior Art

Based on SnapAid's Preliminary Infringement Contentions, Samsung identifies prior art below and in Appendix A as Exhibits 682-Aisaka through 682-Yang, which contain charts disclosing the identity of each item of prior art that anticipates each claim and/or renders it obvious. As shown in Appendix A as Exhibits 682-Aisaka through 682-Yang and below, Samsung has identified each prior art reference by its number, country of origin, author, and date of issue (where applicable). Samsung notes that it has applied the prior art in accordance with SnapAid's improper assertions of infringement and improper applications of the claims. Samsung does not agree with SnapAid's application of the claims and denies infringement.

Samsung further contends that all claims that are anticipated by a particular reference are also rendered obvious by that same reference alone, in combination with the other references, and/or in combination with the knowledge of a person of ordinary skill in the art. Samsung reserves the right to rely upon any combination of the charted prior art under 35 U.S.C. § 103, yet Samsung has also identified exemplary obviousness combinations further below.

'682 Patent Prior Art Patents / Patent Applications				
Ex. No.	Patent / Publication No.	Country of Origin	Filing Date	Date of Issue / Publication
Ex. 682-Aisaka	U.S. Patent Pub. No. 2010/0246939 A1 ("Aisaka")	U.S.	Aug. 26, 2009	Sept. 30, 2010
Ex. 682-Alhadeef	U.S. Patent No. 8,009,198 ("Alhadeef")	U.S.	Apr. 22, 2004	Aug. 30, 2011
Ex. 682-Anon	U.S. Patent No. 8,508,622 ("Anon")	U.S.	Jan. 18, 2011	Aug. 13, 2013

Ex. 682-Cheatle	U.S. Patent Pub. No. 2002/0110286 A1 (“Cheatle”)	U.S.	Jan. 9, 2002	Aug. 15, 2002
Ex. 682-Chen	U.S. Patent No. 6,810,083 (“Chen”)	U.S.	Nov. 16, 2001	Oct. 26, 2004
Ex. 682-Fredlund	U.S. Patent Pub. No. 2011/0216209 A1 (“Fredlund”)	U.S.	Mar. 3, 2010	Sept. 8, 2011
Ex. 682-Ishiwata	U.S. Patent Pub. No. 2008/0013851 A1 (“Ishiwata”)	U.S.	July 3, 2007	Jan. 17, 2008
Ex. 682-Iwamoto	U.S. Patent No. 5,005,086 (“Iwamoto”)	U.S.	Mar. 2, 1989	Apr. 2, 1991
Ex. 682-Iwane	U.S. Patent No. 7,660,519 (“Iwane”)	U.S.	Aug. 28, 2006	Feb. 9, 2010
Ex. 682-Jasinski	U.S. Patent Pub. No. 2012/0201427 A1 (“Jasinski”)	U.S.	Feb. 4, 2011	Aug. 9, 2012
Ex. 682-Kim397	U.S. Patent Pub. No. 2006/0260397 A1 (“Kim397”)	U.S.	May 12, 2006	Nov. 23, 2006
Ex. 682-Kim882	U.S. Patent Pub. No. 2011/0187882 A1 (“Kim882”)	U.S.	Sept. 10, 2010	Aug. 4, 2011
Ex. 682-Koh	U.S. Patent No. 7,973,848 (“Koh”)	U.S.	Mar. 31, 2008	July 5, 2011
Ex. 682-Lu	U.S. Patent No. 7,590,287 (“Lu”)	U.S.	Nov. 6, 2002	Sept. 15, 2009
Ex. 682-Lv	U.S. Patent Pub. No. 2013/0286161 A1 (“Lv”)	U.S.	Apr. 25, 2012	Oct. 31, 2013
Ex. 682-Marchesotti	U.S. Patent Pub. No. 2012/0269441 A1 (“Marchesotti”)	U.S.	Apr. 19, 2011	Oct. 25, 2012
Ex. 682-Meguro	U.S. Patent Pub. No. 2009/0251549 A1 (“Meguro”)	U.S.	Aug. 23, 2007	Oct. 8, 2009
Ex. 682-Mori	U.S. Patent Pub. No. 2011/0080494 A1 (“Mori”)	U.S.	Sept. 30, 2010	Apr. 7, 2011
Ex. 682-Ohmiya	U.S. Patent Pub. No. 2010/0245604 A1 (“Ohmiya”)	U.S.	Dec. 2, 2008	Sept. 30, 2010
Ex. 682-Parulski177	U.S. Patent No. 6,539,177 (“Parulski177”)	U.S.	July 17, 2001	Mar. 25, 2003

Ex. 682-Phillips	U.S. Patent Pub. No. 2005/0226490 A1 (“Phillips”)	U.S.	Mar. 30, 2005	Oct. 13, 2005
Ex. 682-Pore	U.S. Patent Pub. No. 2009/0290037 A1 (“Pore”)	U.S.	May 22, 2008	Nov. 26, 2009
Ex. 682-Ramesh	U.S. Patent Pub. No. 2009/0296989 A1 (“Ramesh”)	U.S.	May 28, 2009	Feb. 28, 2006
Ex. 682-Roux	U.S. Patent Pub. No. 2011/0033122 A1 (“Roux”)	U.S.	Aug. 4, 2009	Feb. 10, 2011
Ex. 682-Savakis	U.S. Patent No. 6,671,405 (“Savakis”)	U.S.	Dec. 14, 1999	Dec. 30, 2003
Ex. 682-Shah	U.S. Patent Pub. No. 2011/0205383 A1 (“Shah”)	U.S.	Feb. 24, 2010	Aug. 25, 2011
Ex. 682-Staudacher238	U.S. Patent No. 9,282,238 (“Staudacher238”)	U.S.	Oct. 29, 2010	Mar. 8, 2016
Ex. 682-Steinberg	U.S. Patent No. 8,682,097 (“Steinberg”)	U.S.	June 16, 2008	Mar. 25, 2014
Ex. 682-Takeuchi	U.S. Patent Pub. No. 2010/0149361 A1 (“Takeuchi”)	U.S.	Oct. 14, 2009	June 17, 2010
Ex. 682-Wu	U.S. Patent No. 9,036,069 (“Wu”)	U.S.	Sept. 12, 2012	May 19, 2015
Ex. 682-Yang	U.S. Patent Pub. No. 2011/0222724 A1 (“Yang”)	U.S.	May 31, 2010	Sept. 15, 2011

'682 Patent Prior Art NPL References				
Ex. No.	Title	Date of Publication	Author	Publisher
Ex. 682-Liu	T. Liu, Image Quality Assessment Using Multi-Method Fusion (“Liu”)	May 2013	T. Liu	IEEE Transactions on Image Processing

'682 Patent Prior Art Products/Systems		
Ex. No.	System/Product	Public Disclosure Date
Ex. 682-Canon EOS-1DX	Canon EOS-1DX Digital Camera	March 2012

Ex. 682-Canon SX210 IS	Canon Powershot SX210 IS Digital Camera	June 2010
Ex. 682-Kodak Z990	Kodak Easyshare Max Z990 Digital Camera	May 2011
Ex. 682-Nikon S630	Nikon Coolpix S630 Digital Camera	February 2009
Ex. 682-Pentax K-5	Pentax K-5 SLR Digital Camera	December 2010
Ex. 682-Samsung WB700	Samsung WB700 Digital Camera	December 2010
Ex. 682-Sony A33	Sony A33 Digital Camera	October 2010
Ex. 682-Sony TX55	Sony DSC-TX55 Digital Camera	2011

'682 Patent Additional Prior Art/Background Art
U.S. Patent Pub. No. 2010/0214216 A1 (“Nasiri”)
U.S. Patent Pub. No. 2012/0105662 A1 (“Staudacher”)
U.S. Patent No. 8,264,553 (“Joshi”)
U.S. Patent Pub. No. 2007/0283269 A1 (“Obrador”)
U.S. Patent Pub. No. 2011/0150447 A1 (“Li”)
U.S. Patent Pub. No. 2012/0133746 A1 (“Bigioi”)
U.S. Patent Pub. No. 2013/0076856 A1 (“Wakabayashi”)
U.S. Patent No. 5,831,670 (“Suzuki”)
Garcia-Molina, H., Database Systems: The Complete Book (2d ed. 2009) (“Garcia-Molina”)
U.S. Patent Pub. No. 2008/0192129 A1 (“Walker”)
U.S. Patent Pub. No. 2004/0012682 A1 (“Kosaka”)

Discovery is ongoing, and Samsung reserves the right to amend its identification of prior art herein based on additional investigation and third-party discovery.

D. Anticipation

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’682 Patent are anticipated, either expressly or inherently as understood by a person having ordinary

skill in the art, by primary references as set forth below and in the attached claim charts. The prior art references or systems listed herein and in the accompanying claim charts may disclose the elements of the Asserted Claims explicitly and/or inherently. To the extent SnapAid asserts that any of the prior art references charted in the attached exhibits fail to explicitly or inherently disclose any element of the Asserted Claims, Samsung contends it would have been obvious to modify such reference to include the allegedly missing element, in view of the knowledge of one of ordinary skill in the art, the admitted prior art of the Asserted Patents, and/or in combination with any of the other prior art references identified in the Exhibits for that respective patent.

E. Obviousness

At least under SnapAid’s apparent infringement theory, the Asserted Claims of the ’682 Patent are rendered obvious by the references identified in the attached claim charts, either alone or in the combinations with other prior art references as identified below. Samsung contends that one of ordinary skill in the art, at the time of the alleged invention of the Asserted ’682 Patent Claims, would have been motivated to combine the references disclosed herein in such a way to reach the alleged inventions. In certain instances, the suggested obviousness combinations are provided in the alternative to Samsung’s anticipation contentions, which shall not be construed to suggest that any reference included in the combinations is not by itself anticipatory. The combinations evidencing teachings, suggestions, and/or motivations to combine the prior-art references in a way that renders the Asserted Claims obvious are merely exemplary.

One of the Following Primary References	In Combination with One or More of the Following References
Aisaka	Alhadeif, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya,

	Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Alhadeef	Aisaka, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Anon	Aisaka, Alhadeef, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Canon EOS-1DX	Aisaka, Alhadeef, Anon, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Canon SX210 IS	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Cheatle	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Chen,

	Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Chen	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Fredlund	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Ishiwata	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Iwamoto	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung

	WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Iwane	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Jasinski	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Kim397	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Kim882	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Kodak Z990	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane,

	Jasinski, Kim397, Kim882, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Koh	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Liu	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Lu	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Lv	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33,

	Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Marchesotti	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Meguro	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Mori	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Nikon S630	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Ohmiya	Aisaka, Alhadeh, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak

	Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Parulski177	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Pentax K-5	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Phillips	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Pore	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55,

	Staudacher238, Steinberg, Takeuchi, Wu, Yang
Ramesh	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Roux	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Samsung WB700	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Savakis	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Shah	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti,

	Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Sony A33	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Sony TX55	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Staudacher238, Steinberg, Takeuchi, Wu, Yang
Staudacher238	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Steinberg, Takeuchi, Wu, Yang
Steinberg	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Takeuchi, Wu, Yang

Takeuchi	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Wu, Yang
Wu	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Yang
Yang	Aisaka, Alhadeef, Anon, Canon EOS-1DX, Canon SX210 IS, Cheatle, Chen, Fredlund, Ishiwata, Iwamoto, Iwane, Jasinski, Kim397, Kim882, Kodak Z990, Koh, Liu, Lu, Lv, Marchesotti, Meguro, Mori, Nikon S630, Ohmiya, Parulski177, Pentax K-5, Phillips, Pore, Ramesh, Roux, Samsung WB700, Savakis, Shah, Sony A33, Sony TX55, Staudacher238, Steinberg, Takeuchi, Wu

One of ordinary skill in the art would be motivated to combine these references in the above combinations for at least the following reasons. One of ordinary skill in the art would have understood that each of these references are in the same field of endeavor, namely real time assessment of picture quality. *See, e.g.*, Roux at ¶¶ 0024, 0003, 0060, 0038; Iwamoto at Abstract, 7:65–8:16, 8:45–61, 3:35–57, 9:12–30, 8:17–28; Ex. 682-Kodak Z990; Takeuchi at ¶¶ 0176, 0166, 0147, ¶¶ 0006–07, Abstract; Aisaka at ¶¶ 0098, 0371, 0269, ¶¶ 0271–73, 0369–70; Savakis at 5:30–61, 4:6–26, 2:45–55, Claims 18, 1; Mori at ¶¶ 0010, 0035, 0055, 0095, Abstract; Shah at ¶¶ 0034, 0055, ¶¶ 0072–74, 0072–73, 0071–72; Kim397 at ¶¶ 0033–35, 0025–26, ¶¶ 0015, 0026,

Abstract; Yang at ¶¶ 28, 8, 3, 5, ¶¶ 0002–03; Staudacher238 at 3:60–4:8, 4:25–34, 5:56–6:12, 1:48–57, 6:56–7:4; Marchesotti at ¶¶ 0026, 0016, 0025, 0037; Ramesh at ¶¶ 0024, 0025, 0003; Iwane at 4:4–13, 15:17–24, 1:30–42, 1:53–2:3, 2:4–21; Ohmiya at ¶¶ 0114, 0113, 0007, 0105; Alhadeif at 14:16–30, 15:49–62, 1:49–59, 3:37–48, 7:3–17; Lu at 5:66–6:7, 3:20–31, 6:22–28, 9:29–44, 2:25–39; Fredlund at ¶¶ 0048, 0064, 0069, 0073, ¶¶ 0063–64; Lv at ¶¶ 0046, 0083, 0042, 0027, 0061; Ex. 682-Samsung WB700; Ex. 682-Canon EOS-1DX; Ex. 682-Pentax K-5; Pore Claims 18, 2, 12, ¶ 0047, ¶¶ 0110–11; Cheatle at Abstract, ¶¶ 0019, 0017, 0040, 0004, Claim 24; Wu at 7:60–8:20, 5:17–32, 5:33–52, 4:66–5:16, 8:31–43; Chen at Abstract, 1:25–50, 4:6–20, 1:16–23, 4:21–51; Kim882 at ¶¶ 0051, 0095, 0102, Abstract, ¶¶ 0052–53; Ex. 682-Sony A33; Koh at 12:24–35, 7:26–37, 5:52–6:5, 4:8–19, 2:48–62; Meguro at ¶¶ 0021, 0029, 0058, 0032, Abstract; Ex. 682-Nikon S630; Phillips at ¶¶ 0091–93, ¶¶ 0080, 0094, 0119, 0036; Anon Claim 1, 1:59–2:8, 5:26–51, Abstract, 7:55–63; Jasinski at ¶¶ 3, 131, 88, ¶¶ 0079–80; Ex. 682-Liu; Ishiwata at ¶¶ 0052, 0049, 0071, 0086, ¶¶ 0077–79; Parulski177 at Abstract, 30:50–31:7, 34:27–41, 35:8–23, 32:47–33:3, 17:1–17; Steinberg Claims 15, 1, 19, 28:15–29; Ex. 682-Canon SX210 IS; Ex. 682-Sony TX55.

One of ordinary skill in the art would have recognized that these references are directed to addressing the same problem, in particular, picture quality. *See, e.g.*, Roux at ¶¶ 0024, 0003, 0038, 0063; Iwamoto at 3:35–57, 7:65–8:16, 7:41–43, 5:51–67, 7:40–58; Ex. 682-Kodak Z990; Takeuchi at ¶¶ 0176, 0121, ¶¶ 0108–09, 0139–40, 0006–07; Aisaka at ¶¶ 0371, 0098, 0055, ¶¶ 0369–70, 0146–47; Savakis at 5:30–61, 3:58–4:5, 4:64–5:29, 4:44–63, Claim 18; Mori at ¶¶ 0010, 0025, Abstract, ¶¶ 0102–03, 0073–74; Shah at ¶¶ 0034, 0055, 0033, 0093, ¶¶ 0072–74; Kim397 at ¶¶ 0025–26, 0024–25, ¶¶ 0026, 0005, 0028; Yang at ¶¶ 28, 8, 3, ¶¶ 0002–03; Staudacher238 at 3:60–4:8, 2:7–33, 5:56–6:12, 2:56–3:2, 5:23–42; Marchesotti at ¶¶ 0016, 0026, 0037, 0079;

Ramesh at ¶¶ 0024, 0025, 0007; Iwane at 4:4–13, 1:30–42, Abstract, 4:48–5:5, 5:35–51; Ohmiya at ¶¶ 0007, 0114, 0113, 0169, Claim 15; Alhadeef at 14:16–30, 15:7–22, 7:3–17, 7:3–13, 12:66–13:18; Lu at 5:66–6:7, 9:29–44, 1:44–59, 2:25–39, Abstract; Fredlund at ¶¶ 0048, 0064, 0034, 0042, ¶¶ 0063–64; Lv at ¶¶ 0046, 0083, 0042, 0032, 0045; Ex. 682-Samsung WB700; Ex. 682-Canon EOS-1DX; Ex. 682-Pentax K-5; Pore Claims 18, 2, 12, ¶ 0047, Abstract; Cheatle at ¶¶ 0019, 0040, 0014, 0017; Wu at 7:60–8:20, 5:17–32, 5:33–52, 4:66–5:16, 8:31–43; Chen at 1:25–50, 4:6–20, 3:52–4:3, 1:16–23; Kim882 at ¶¶ 0051, 0052, Abstract, ¶¶ 0052–53, 0093–94; Ex. 682-Sony A33; Koh at 5:52–6:5, 5:36–51, 4:8–19, 4:38–52, 6:56–7:2; Meguro at ¶¶ 0021, 0006, 0064, Abstract; Ex. 682-Nikon S630; Phillips at ¶¶ 0091–93, 0142–43, ¶¶ 0094, 0032, 0008; Anon Claims 1, 2, 1:59–2:8, 5:26–51, Abstract; Jasinski at ¶¶ 3, 63, 84, ¶¶ 0079–80; Ex. 682-Liu; Ishiwata at ¶¶ 0052, 0101, 0046, 0049, 0053; Parulski177 at 28:31–57, 32:47–33:3, 5:64–6:22, 28:16–30, 28:31–52; Steinberg Claims 15, 1, 19, 33:19–32; Ex. 682-Canon SX210 IS; Ex. 682-Sony TX55.

Further, the Asserted Claims of the '682 Patent contain merely a duplication of concepts known in the prior art and have no patentable significance given that no unexpected results occur—*i.e.*, the patentee merely combines known prior art elements according to known methods to yield predictable results. For example, the prior art references describe “[a] method for estimating quality of at least one image from a plurality of images, for use with a device that comprises in a single enclosure a digital camera module or functionality that comprises at least one optical lens for focusing received light from a scene and an image sensor coupled to the optical lens for capturing an image of the scene; a motion or location sensor for sensing the device motion; and a processor coupled to at least one image sensor and to the digital camera for receiving data therefrom, the method by the processor comprising use of at least one value and weight.” *See*,

e.g., Roux at ¶¶ 0023, 0024, 0072, 0073, 0007, 0008, 0016, ¶¶ 0070–71, 0010–11; Iwamoto at 1:7–9, 1:11–31, 1:32–48, 1:49–65, 4:31–45, 4:46–51, 5:17–23; Ex. 682-Kodak Z990 at 1[pre]; Takeuchi at ¶¶ 0002–04, 0108–09, 0110–11, ¶¶ 0286, 0287, 0288, 0007, 0033, 0107, 0112, 0089, 0090, 0105, 0296, 0297, 0298, 0299, 0300, 0301; Aisaka at ¶¶ 0055, 0067, 0120, 0121, 0129, 0130, 0183, ¶¶ 0056–57, 0124–25, 0184–85; Savakis at 4:44–63, 2:5–22, 4:64–5:29, 2:23–36, 5:30–61, 2:37–44, 5:62–64, 2:45–55, 2:56–62, 5:66–6:10, 3:58–4:1, 12:29–39, 13:18–33, 15:39–52, 15:53–59, 1:7–9, 3:32–48, 3:49–57, 1:13–30, 3:58–4:5; Mori at Abstract, ¶¶ 0010, 0029, 0030, 0031, 0033, 0034, 0035, 0040, 0041, 0050, 0051, 0052, 0069, 0105, 0106, 0107, 0108, ¶¶ 0038–39, 0042–43, 0048–49, 0070–71; Shah at Abstract, ¶¶ 0028, 0030, 0031, 0032, 0041, 0042, 0044, 0048, 0049, 0052, 0053, 0054, 0055, 0056; Kim397 at ¶¶ 0005, 0015, 0022, 0029, ¶¶ 0024–25, 0036–37, 0038–39, Abstract; Yang at Abstract, ¶¶ 6, 7, 17, 19, 20, 29, 30; Staudacher238 at 1:26–47, 1:48–57, 3:51–59, 3:60–4:8, 2:7–33, 2:34–55, 4:25–34, 4:35–50; Marchesotti at ¶¶ 0002, 0014, 0023, 0031, 0035, 0112; Ramesh at ¶¶ 0021, 0004, 0005, 0025, 0022, 0023, 0020, Abstract; Iwane at 3:40–50, 3:51–60, 4:4–13, 1:30–42, 2:57–59; Ohmiya at ¶¶ 0007, 0071, 0075, 0076, ¶¶ 0068–69, 0073–74, Claim 11; Alhadeh at 4:45–55, 4:56–62, 5:15–26, 5:39–53, 5:54–67, 6:1–6, 7:44–52; Lu at Abstract, 2:62–3:3, 3:9–14, 6:32–36, 7:16–19, 10:54–57, 11:8–10, 11:30–32, 13:13–15; Fredlund at ¶¶ 0011, 0034, 0036, 0037, 0038, 0047, ¶¶ 0013–14; Lv at ¶¶ 0002, 0006, 0026, 0027, 0029, 0035, 0077, 0080; Ex. 682-Samsung WB700 at 1[pre]; Ex. 682-Canon EOS-1DX at 1[pre]; Ex. 682-Pentax K-5 at 1[pre]; Pore at ¶¶ 0019, 0020, 0021, 0024, 0025, 0026, 0027, 0035, 0036, 0037, 0038, 0039, 0040, 0045, 0046, 0047, 0048, 0049, 0117, 0109, ¶¶ 0110–11; Cheatle at ¶¶ 0004, 0017, 0019, 0025, 0028, 0029, 0039, 0040, 0046, 0047; Wu at Abstract, 1:18–20, 2:27–42, 2:56–3:5, 6:20–33, 6:34–40, 6:41–53, 7:60–8:20, 8:21–30, 8:31–43, 10:4–19, 10:20–35, 10:36–50, 13:4–24, 13:25–38, 13:39–44; Chen at 1:9–13, 1:54–57, 2:17–39, 3:52–4:3, 4:6–20, 4:21–51,

Claims 25, 1; Kim882 at Abstract, ¶¶ 0002–03, 0042–44, 0047–48; Ex. 682-Sony A33 at 1[pre]; Koh at 4:8–12, 4:36–37, 5:11–17, 5:36–38, 5:46–51, 6:16–22, 7:3–12, 12:24–35; Meguro at Abstract, ¶¶ 0019, 0020, 0021, 0022, 0023, 0024, 0042; Ex. 682-Nikon S630 at 1[pre]; Phillips at ¶¶ 0135, 0136, 0137, 0138, 0139, 0038, 0039, 0040, 0032, 0033, 0023, 0024, ¶¶ 0142–43, 0144–45, 0146–47, 0148–51; Anon at Abstract, 1:59–2:8, 2:45–48, 2:64–3:14, 3:15–26, 3:53–4:3, 4:4–23, 4:24–33, 5:53–6:8, 6:42–50, 10:8–20; Jasinski at ¶¶ 0034–36, ¶¶ 69, 73, 84, 86, 88; Ex. 682-Liu at 1[pre]; Ishiwata at ¶¶ 0056, 0057, 0115, 0116, 0117, 0032, 0045, 0046, 0005, 0006, 0007, 0111, 0112, 0119, 0120, 0121, 0122, ¶¶ 0043–44; Parulski177 at 5:50–63, 5:64–6:2, 8:59–64, 9:13–27, 9:28–35, 13:35–55, 14:9–21; Steinberg at 6:59–7:3, 8:33–55, 9:7–21, 2:9–11, 2:15–21, 10:32–41, 29:22–34, Claim 19; Ex. 682-Canon SX210 IS at 1[pre]; Ex. 682-Sony TX55 at 1[pre].

The prior art references further describe “obtaining a first value (QI1) responsive to the device motion from the motion or location sensor.” *See, e.g.*, Roux at ¶¶ 0071, 0072, 0023, 0024, 0007, 0059, 0060, Abstract; Iwamoto at 2:15–25, 2:66–3:3, 3:12–20, 3:35–57, 8:17–28, 8:29–44, 8:45–61, 9:12–30; Ex. 682-Kodak Z990 at 1[a]; Takeuchi at ¶¶ 0144, 0288, 0302, 0303, 0284, 0145, 0190, 0166; Aisaka at ¶¶ 0185–86, 0056–57, ¶¶ 0187, 0188, 0189, 0113, 0114, 0115, 0059, 0060, 0061, 0062, 0184, 0190, 0001, 0055, 0058, Abstract; Mori at ¶¶ 0069, 0070, 0080, 0098, 0099, 0100, 0106; Shah at ¶¶ 0042, 0044, 0058, 0059, 0047, 0048, 0049, 0051, 0052, 0053, 0055; Kim397 at ¶¶ 0005, 0006, 0007, 0029, 0044, ¶¶ 0024–25, 0032–33, 0042–43; Yang at ¶¶ 2, 19, 7, 17, 6, 3, 8, 18; Staudacher238 at 1:7–15, 1:58–67, 2:7–33, 4:9–24, 4:35–50, 5:6–22, 5:23–42, 3:9–23; Marchesotti at ¶¶ 0024, 0031, 0035, 0036, 0037, 0038, 0112; Ramesh at Abstract, ¶¶ 0004, 0024, 0025, 0029, 0030, 0039, 0040, 0064, ¶¶ 0041–42; Iwane at 3:40–50, 3:51–60, 4:4–13, 5:8–23, 8:23–26; Ohmiya at ¶¶ 0072, 0075, 0085, 0090, 0007, 0003, 0100, 0130; Alhadeef at 3:24–26, 3:53–64, 3:65–4:3, 4:4–6, 4:52–62, 7:38–43, 7:44–57, 9:15–23, 9:59–64, 9:65–10:3, 10:4–14,

12:17–19; Lu at 3:32–42, 3:43–57, 8:19–21, 8:23–33, 9:17–19, 12:48–55; Fredlund at ¶¶ 0047, 0072, 0099, 0104, 0031, 0034, 0036, 0045; Lv at ¶¶ 0026, 0027, 0028, 0030, 0031, 0042, 0049, 0050; Ex. 682-Samsung WB700 at 1[a]; Ex. 682-Canon EOS-1DX at 1[a]; Ex. 682-Pentax K-5 at 1[a]; Pore at ¶¶ 0024, 0026, 0027, 0028, 0031, 0044, 0047, 0117; Cheatle at ¶¶ 0035, 0036, 0039, 0030, 0031, 0025, 0007, 0029; Wu at 3:6–16, 4:59–65, 7:60–8:20, 13:4–24, 13:39–44; Chen at 3:52–4:3, 1:54–57, 1:58–2:3, 2:4–16, 1:9–13, 1:25–50, 9:50–51; Kim882 at ¶¶ 0042, 0050, 0051, 0092, 0095, 0096, 0097, 0006, 0016, ¶¶ 0044–45, 0046–47, 0048–49, 0057–60, 0093–94, 0098–99, 0007–08, 0009–10, 0018–19; Ex. 682-Sony A33 at 1[a]; Koh at 4:38–52, 4:53–60, 5:11–19, 5:36–51, 5:52–6:5, 6:6–15, 6:16–27, 6:28–39, 6:40–55, 6:56–7:2, 7:3–12, 7:13–25, 7:26–37; Meguro at ¶¶ 0023, 0045, 0047, 0048, 0050, 0051, 0052, 0053, 0055, 0060, 0061, 0064, 0090, 0111; Ex. 682-Nikon S630 at 1[a]; Phillips at ¶¶ 0146–48, 0149–52, 0142–43, 0033–34, ¶¶ 0141, 0015, 0016, 0020, 0021, 0022, 0023, 0024, 0025, 0026, 0032; Anon at 4:24–33, 4:56–5:25, 7:4–14, 7:15–29, 8:15–31, 10:27–46, 3:53–4:3, 4:4–23, 4:34–41, 8:65–9:25, 9:35–55; Jasinski at ¶¶ 69, 73, 0010, 12, ¶¶ 0008–09; Ex. 682-Liu at 1[a]; Ishiwata at ¶¶ 0057, 0006, 0044, 0045, 0046, 0012, 0084, 0085, 0103, 0104; Parulski177 at 13:56–14:8, 14:9–21, 14:22–45, 30:9–20, 31:8–17, 31:18–34, 31:35–55, 31:56–32:4, 32:5–17; Steinberg at 28:15–29, 23:58–24:9, 24:10–29, 26:46–59, 26:60–67, 27:36–41, 29:22–34; Ex. 682-Canon SX210 IS at 1[a]; Ex. 682-Sony TX55 at 1[a].

The prior art references further describe “estimating a first weight (c1) associated with the first.” *See, e.g.*, Roux at ¶¶ 0034, 0035, 0036, 0056, 0058, 0042, 0043; Iwamoto at 5:40–50, 3:35–57, 7:40, 3:58–60, 7:41–43, 7:18, 7:44–58, 3:64–4:3, 7:59–64, 3:4–11, 6:52–66, 3:12–20, 6:67–7:9, 3:21–22, 7:10–16, 3:24–26, 3:27–34, 9:31–47, 9:48–56, 2:15–35; Ex. 682-Kodak Z990 at 1[b]; Takeuchi at ¶¶ 0131–32, 0251–52, 0257–58, ¶¶ 0253, 0254, 0255, 0256, 0260, 0279, 0227, 0228, 0229, 0230; Aisaka at ¶¶ 0310, 0313, 0316, 0333, 0325, 0326, 0327, 0328, 0349, 0350,

0351, 0355, 0268, 0300, 0301, ¶¶ 0311–12, 0314–15, 0323–24, 0298–99; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:4–15, 13:18–24, 13:35–40, 13:43–45, 13:47–54; Mori at ¶¶ 0040, 0041, 0069, 0072, 0100, 0101, ¶¶ 0070–71; Shah at ¶¶ 0091, 0092, 0093, 0095, 0096, 0102, 0089; Kim397 at ¶¶ 0036–38, 0042–43, 0033–35, ¶¶ 0044, 0014, 0015, 0005, 0006, Abstract; Yang at ¶¶ 21, 15, 8, 28; Staudacher238 at 2:34–55, 4:25–34, 4:35–50, 4:51–5:5, 5:6–22, 2:7–33, 3:24–36, 1:58–67; Marchesotti at ¶¶ 0096, 0099, 0101, 0042, 0073, 0080; Ramesh at ¶¶ 0006, 0024, 0030, 0041, 0051, 0062, 0039, 0040; Iwane at 4:48–5:5, 1:30–42, 1:53–2:3, 13:54–67, 12:16–25; Ohmiya at ¶¶ 0004, 0080, 0081, 0163, Claims 3, 4, 7, 10; Alhadeef at 11:40–54, 12:45–46, 12:51–56, 14:16–30, 14:46–48, 9:35–43, 12:47–50; Lu at 3:32–42, 3:66–4:3, 4:50–53, 9:38–44, Claim 4; Fredlund at ¶¶ 0058, 0059, 0067, 0068, 0075, 0085, 0087, 0101; Ex. 682-Samsung WB700 at 1[b]; Ex. 682-Canon EOS-1DX at 1[b]; Ex. 682-Pentax K-5 at 1[b]; Pore at ¶¶ 0110, 0048, 0111, 0007, 0019, 0053, 0018, Abstract; Cheatle at ¶¶ 0041, 0043, 0011, 0012, 0013, 0039, 0004, 0029; Wu at 13:39–44, 11:7–16, 13:56–14:3, 14:4–21, 14:22–26, 15:6–23, 15:24–29, 10:61–11:6, 7:60–8:20, 8:21–30, 13:25–38; Chen at 2:17–39, 2:40–60, 8:52–61; Kim882 at ¶¶ 0062, 0067, 0069, 0077, 0078, 0100, 0020, 0021; Ex. 682-Sony A33 at 1[b]; Koh at 6:56–7:2, 7:3–12, 7:13–25, 11:52–61, 11:62–12:12, 13:35–45; Meguro at ¶¶ 0045, 0047, 0103, 0104, 0090, 0098, 0054, 0038; Ex. 682-Nikon S630 at 1[b]; Phillips at ¶¶ 0023, 0026, 0030, 0032, 0033, 0029, 0017, 0022; Anon at 1:59–2:8, 3:53–4:3, 4:4–12, 8:32–35, 5:26–51, 9:26–34, 10:27–46, 2:9–15, 2:16–28; Jasinski at ¶¶ 0031, 0114, 120, 0121, 0122, 126, 128, 129, 130, 131; Ex. 682-Liu at 1[b]; Ishiwata at ¶¶ 0084, 0085, 0086, 0088, 0089, 0090, 0112, 0116; Parulski177 at 25:22–35, 23:33–51, 32:5–17, 36:22–40, 36:41–56, 36:57–61, 28:5–15, 28:16–30, 35:34–52; Steinberg at 32:37–48, 32:49–60, 36:19–27, 36:28–43, 27:36–41, 27:42–57; Ex. 682-Canon SX210 IS at 1[b]; Ex. 682-Sony TX55 at 1[b].

The prior art references further describe “obtaining a second value (QI2) associated with the digital camera.” *See, e.g.*, Roux at ¶¶ 0049, 0050, 0055, 0056, 0059, 0060, 0063, 0064, 0068, 0069, 0071, 0072, 0073; Iwamoto at 1:32–48, 1:49–65, 4:46–51, 5:5–13, 5:17–23, 5:40–50, 4:66–5:4, 6:1–14; Ex. 682-Kodak Z990 at 1[c]; Takeuchi at ¶¶ 0112, 0107, 0137, 0173, 0174, ¶¶ 0108–09; Aisaka at ¶¶ 0055, 0056, 0065, 0105, 0106, 0107, 0112; Savakis at 4:64–5:29, 2:5–22, 2:23–36, Claims 1, 3, 4, 20, 21; Mori at ¶¶ 0032, 0033, 0035, 0041, 0051, 0054, 0077, 0080; Shah at ¶¶ 0055, 0056, 0059, 0065, 0068, 0070, 0071, 0075, 0076, 0030, 0031, 0032, ¶¶ 0066–67, 0072–73; Kim397 at ¶¶ 0005, 0007, 0026, 0028, 0044; Yang at ¶¶ 7, 16, 17, 19, 20, 21, 30, 31; Staudacher238 at 1:26–47, 1:48–57, 3:60–4:8, 4:9–24, 4:25–34, 2:1–6, 2:7–33, 2:34–55; Marchesotti at ¶¶ 0014, 0023, 0025, 0028, 0078, 0081, ¶¶ 0076–77; Ramesh at Abstract, ¶¶ 0004, 0005, 0021, 0024, 0025, 0028; Iwane at Abstract, 3:40–50, 4:4–13, 4:48–5:5, 5:8–23, 5:24–34; Ohmiya at ¶¶ 0073–74, ¶¶ 0075, 0079, 0080, 0102, 0110, 0112, 0125, 0131; Alhadeef at 15:37–41, 7:53–57, 8:30–31, 10:8–14, 13:56–61, 4:45–51; Lu at 5:66–6:7, 6:22–28, 7:20–27, 9:46–51, 9:53–56, 10:36–42, 10:49–57, 11:5, 12:28–37; Fredlund at ¶¶ 0069, 0045, 0049, 0054, 0061, 0067, 0081; Lv at ¶¶ 0053, 0054, 0055, 0061, 0029, 0031, 0032, 0079; Ex. 682-Samsung WB700 at 1[c]; Ex. 682-Canon EOS-1DX at 1[c]; Ex. 682-Pentax K-5 at 1[c]; Pore at ¶¶ 0038, 0042, 0043, 0044, 0117, 0118, Claims 17, 18; Cheatle at ¶¶ 0025, 0026, 0004, 0028, 0029, 0005, 0007, 0033; Wu at 2:27–42, 2:56–3:5, 3:6–16, 3:22–32, 4:43–58, 4:59–65, 7:60–8:20, 13:4–24, 13:25–38, 13:39–44; Chen at 3:52–4:3, 4:6–20, 4:21–51, 8:17–39, 6:53–54, 1:58–2:3, 2:17–39, Claims 1, 25; Kim882 at ¶¶ 0047, 0050, 0051, ¶¶ 0048–49, 0058–60; Ex. 682-Sony A33 at 1[c]; Koh at 5:36–51, 5:52–6:5, 4:44–52, 6:16–22, 6:56–7:2, 9:36–46; Meguro at Abstract, ¶¶ 0006, 0032, 0033, 0035, ¶¶ 0041–42; Ex. 682-Nikon S630 at 1[c]; Phillips at ¶¶ 0065, 0015, 0016, 0021, 0182, 0183, 0066, 0185, ¶¶ 0060–61, 0063–64; Anon at 3:53–4:3, 4:24–33, 5:53–6:8, 6:32–41, 6:42–50, 6:51–7:3,

7:4–14, 7:43–54, 7:55–63, 7:64–8:13, 8:15–31; Jasinski at ¶¶ 62, 63, 73, 88, 3, 5, 61, 89, 90; Ex. 682-Liu at 1[c]; Ishiwata at ¶¶ 0048, 0049, 0056, 0057, 0058, 0060, 0061, 0032; Parulski177 at 21:17–38, 42:53–59, 42:60–43:5, 8:45–58, 8:59–64, 8:65–9:12, 9:61–10:3, 15:13–46, 24:50–63, 33:40–52, 44:27–54; Steinberg at 6:59–7:3, 9:7–21, 10:26–31, 10:55–65, 11:29–48, 14:53–63, 17:65–18:8; Ex. 682-Canon SX210 IS at 1[c]; Ex. 682-Sony TX55 at 1[c].

The prior art references further describe “estimating a second weight (c2) associated with the second value.” *See, e.g.*, Roux at ¶¶ 0026, 0034, 0036, 0042, 0056, 0064, ¶¶ 0043–44; Iwamoto at 5:40–50, 8:17–28, 8:29–44, 8:45–61, 9:12–30, 9:31–47, 6:67–7:9, 7:44–58; Ex. 682-Kodak Z990 at 1[d]; Takeuchi at ¶¶ 0253, 0254, 0255, 0258, 0032, 0136, 0141, ¶¶ 0131–32; Aisaka at ¶¶ 0020, 0021, 0022, 0300, 0365, 0366, 0367, 0371, 0375, 0024, ¶¶ 0298–99, 0301–02, 0363–64; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:35–40, 13:43–45, 13:47–54, 2:45–55, 13:18–24; Mori at ¶¶ 0033, 0051, 0054, 0055, 0094, 0095, 0032, 0080, 0081, 0100, 0101, 0102, 0072; Shah at ¶¶ 0072–74, ¶¶ 0034, 0035, 0059, 0069, 0070, 0054; Kim397 at ¶¶ 0036–38, ¶¶ 0044, 0014, 0015, 0039, 0005, 0006, 0007, Abstract; Yang at ¶¶ 15, 21, 14, 16, 17, 18; Staudacher238 at 2:34–55, 4:25–34, 4:35–50, 4:51–5:5, 5:6–22, 3:24–36, 4:9–24; Marchesotti at ¶¶ 0091, 0093, 0095, 0100, 0101, 0102, 0104, 0105, 0080, 0081, ¶¶ 0096–97, 0098–99; Ramesh at ¶¶ 0030, 0041, 0006, 0034, 0039, 0024, Claim 10; Iwane at 4:48–5:5; Ohmiya at ¶¶ 0092, 0094, 0095, Abstract, Claims 4, 7; Alhadeif at 14:10–15, 14:16–30, 14:46–55, 7:53–62, 7:63–8:14, 8:15–31, 12:17–19, 12:66–13:18, 13:19–25, 13:26–41, 9:59–64, 9:65–10:3, 10:4–11, 10:12–21, 9:14–23, 9:28–43, 1:6–15, 1:16–30, 3:46–52, 3:53–64, 3:65–4:3, 4:4–6; Lu at 4:50–53; Fredlund at ¶¶ 0064, 0067, 0068, 0075, 0085, 0087; Ex. 682-Samsung WB700 at 1[d]; Ex. 682-Canon EOS-1DX at 1[d]; Ex. 682-Pentax K-5 at 1[d]; Pore at ¶¶ 0048, 0109, 0110, 0049, 0007, 0021; Cheatle at ¶¶ 0004, 0005, 0011, 0012, 0013, 0041, 0043, 0024; Wu at 13:39–44, 14:4–21, 14:22–26, 12:40–61, 13:4–24, 13:25–

38; Chen at 3:35–51, 5:7–30, 5:40–54, 8:17–39, 4:6–20, 7:57–8:7, 8:52–61, 7:4–8; Kim882 at ¶¶ 0051, 0059, 0069, 0077, 0099, 0100, 0101, 0109; Ex. 682-Sony A33 at 1[d]; Koh at 6:9–15, 7:3–12, 7:13–25, 9:52–56, 9:57–10:11, 10:12–32, 11:62–12:12; Meguro at ¶¶ 0041–42, ¶¶ 0043, 0044, 0045, 0047, 0048, 0050, 0051, 0052, 0053, 0054, 0058, 0059, 0067, 0068, 0072, 0100, 0101, 0102, 0103, 0104; Ex. 682-Nikon S630 at 1[d]; Phillips at ¶¶ 0023, 0026, 0030, 0032, 0029, 0022; Anon at 3:53–4:3, 5:26–51, 8:32–35, 9:26–34, 9:35–55, 4:52–55, 4:56–5:25, 8:15–31, 9:56–67; Jasinski at ¶¶ 120, 121, 122, 126, 28, 30; Ex. 682-Liu at 1[d]; Ishiwata at ¶¶ 0049, 0050, 0069, 0070, 0084, 0085, 0086, 0088, 0089, 0090, 0091, 0119, 0120, 0121, Claim 11; Parulski177 at 17:24–33, 17:34–56, 17:57–18:18, 25:60–26:10, 27:25–32, 28:5–15, 28:16–30; Steinberg at 27:36–41, 27:42–57, 27:58–28:7, 28:8–14, 23:58–24:9, 24:10–29, 18:25–33; Ex. 682-Canon SX210 IS at 1[d]; Ex. 682-Sony TX55 at 1[d].

The prior art references further describe “analyzing the captured image for detecting or recognizing one or more objects in the image and obtaining a third value (QI3) associated with motion of at least one of said objects.” *See, e.g.*, Roux at ¶¶ 0004, 0023, 0045, 0047, 0063, 0064, 0065, 0066, 0067, 0068; Iwamoto at 6:1–18, 6:19–51, 1:32–48, 1:49–65, 1:66–2:14, 7:65–8:16, 1:7–9, 1:11–31; Ex. 682-Kodak Z990 at 1[e]; Takeuchi Claims 20, 22, ¶¶ 0113, 0114, 0115, 0121, 0122, 0123, 0124, 0132, 0134, 0136, 0142, 0162, 0163, 0165, 0166, 0167, 0168, 0171, 0172, 0173, 0174, 0175, 0176, 0177, 0200, 0201, 0202, 0203; Aisaka at ¶¶ 0187, 0188, 0189, 0058, 0059, 0060, 0061, 0062, 0063, 0064, 0114, 0115, 0100, 0261, 0262, 0055, ¶¶ 0190–91, 0056–57; Savakis at 9:65–10:28, 10:29–41, 10:42–51, 2:5–22, 4:64–5:29, 2:23–36, 5:30–61, 8:13–19, 8:21–28, 8:29–60, 8:61–9:5, 9:6–18, 9:22–37, 9:39–46, 9:48–54, 9:56–63, 15:53–59, 1:13–30; Mori at ¶¶ 0034, 0060, 0061, 0062, 0100, 0101, ¶¶ 0102–03; Shah at ¶¶ 0036–37, 0008–09, 0039–40, ¶¶ 0101, 0102, 0038, 0041, 0042, 0043, 0044, Abstract; Kim397 at ¶¶ 0005, 0007, 0026, 0033, 0035,

0044, ¶¶ 0028–29; Yang at ¶¶ 17, 18, 19, 7, 8, 20, 6, Abstract; Staudacher238 at 2:1–6, 2:7–33, 2:34–55, 4:9–24, 4:25–34, 4:35–50, 5:6–22, 1:58–67; Marchesotti at ¶¶ 0023, 0027, 0067, 0068, 0071, 0072, 0073, 0040, ¶¶ 0069–70, 0049–50; Ramesh at ¶¶ 0004, 0007, 0029, 0030, 0043, 0046, 0056, 0057, 0060, 0061, 0009, ¶¶ 0041–42, 0047–48, 0058–59; Iwane at 4:48–5:5, 5:8–23, 5:64–6:8, 8:28–39, 8:40–53, 14:35–47, 15:17–24, 15:26–32; Ohmiya at ¶¶ 0109–10, ¶¶ 0111, 0112, 0113, 0081, 0114, 0115, 0116, 0117, 0120, 0121, 0122, 0123; Alhadeif at 12:45–56, 12:57–65, 12:66–13:18, 13:19–25, 13:26–41, 13:42–47, 4:28–31, 4:33–40, 7:44–52, 7:53–62, 7:63–8:14; Lu at 7:44–52, 8:1–2, 8:19–21, 8:23–29, 8:32–33, 8:40–47, 9:5, 9:17–19, 9:29–37, 10:7–15, 10:18–20; Fredlund at ¶¶ 0065, 0066, 0071, 0074, 0087, 0088, ¶¶ 0021–24, 0025–27; Lv at Abstract, ¶¶ 0026, 0028, 0036, 0043, 0045, 0051, 0079; Ex. 682-Samsung WB700 at 1[e]; Ex. 682-Canon EOS-1DX at 1[e]; Ex. 682-Pentax K-5 at 1[e]; Pore at ¶¶ 0064, 0065, 0076, 0077, ¶¶ 0086–88, 0090–91, 0093–95, 0097–98; Cheatle at ¶¶ 0007, 0030, 0033, 0035, 0038, 0011, ¶¶ 0008–09; Wu at 4:43–58, 6:54–63, 6:64–7:5, 7:6–15, 7:16–30, 7:31–46, 7:47–59, 10:4–19, 10:20–35; Chen at 9:52–10:9, 2:17–39, 5:40–53, 2:40–60, 9:28–31, 2:4–16, 1:54–57, 4:52–62, 1:58–2:3, 4:63–5:3, Claims 25, 8, 1; Kim882 at ¶¶ 0051, 0061, 0062, 0063, 0064, 0065, 0066, 0067, 0068, 0083, 0095, 0096, 0097, 0109, ¶¶ 0059–60, 0075–76, 0081–82; Ex. 682-Sony A33 at 1[e]; Koh at 6:16–27, 6:28–39, 6:40–55, 9:36–51, 10:43–59, 10:60–11:13, 11:31–35, 11:36–51, 11:52–61, 11:62–12:12, 12:13–16; Meguro at ¶¶ 0041–42, ¶¶ 0043, 0044, 0045, 0047, 0048, 0057, 0058, 0059, 0060, 0064, 0065, 0066, 0079, 0080, 0089, 0090, 0093; Ex. 682-Nikon S630 at 1[e]; Phillips at ¶¶ 0016, 0017, 0020, 0022, 0023, 0024, 0025, 0026, 0027, 0028, 0029, 0030, 0031, 0032, 0039, 0098; Anon at 3:53–4:3, 7:43–54, 8:15–31, 1:41–49, 2:9–15, 4:4–23; Jasinski at ¶¶ 2, 7, 93, 94, 95, 96, 97, 99, 100, 104, 110, 112, 113, 114, 115; Ex. 682-Liu at 1[e]; Ishiwata at ¶¶ 0044, 0045, 0046, 0060, 0061, 0062, 0063, 0064, 0076, 0083, 0084, 0085, 0086, 0088, 0089, 0090, 0091, 0092, ¶¶ 0077–

79, 0080–82; Parulski177 at 30:9–20, 30:21–37, 30:44–49, 30:50–31:7, 31:8–17, 31:18–34, 31:35–55, 31:56–32:4, 29:49–55, 29:56–67, 30:1–8, 32:5–17, 32:18–23, 28:5–15, 28:16–30; Steinberg at 26:9–22, 26:23–33, 26:34–45, 26:46–59, 26:60–67, 22:63–23:3, 23:4–8, 11:29–48, 23:58–24:9, 24:10–29, 28:17–29, 19:53–67, 20:1–8, 20:12–29, 20:30–44, 20:45–61; Ex. 682-Canon SX210 IS at 1[e]; Ex. 682-Sony TX55 at 1[e].

The prior art references further describe “estimating a third weight (c3) associated with the third value.” *See, e.g.*, Roux at ¶¶ 0026, 0037, 0042, 0047, ¶¶ 0043–44; Iwamoto at 6:67–7:9, 7:10–16, 7:18, 7:44–58, 7:59–64, 9:31–47, 9:48–56, 5:40–50; Ex. 682-Kodak Z990 at 1[f]; Takeuchi at ¶¶ 0131–32, 0139–40, ¶¶ 0141, 0163, 0166, 0217; Aisaka at ¶¶ 0268, 0269, 0345, 0346, 0347, 0352, 0353, 0354, 0328, 0366, ¶¶ 0364–65; Savakis at 4:44–63, 4:64–5:29, 5:30–38, 2:45–55, 9:6–20, 10:29–41, 10:42–51, 2:37–44; Mori at ¶¶ 0040, 0041, 0072, 0081, 0106, Claims 2, 3; Shah at ¶¶ 0072–74, 0088–89, 0097–98, ¶¶ 0086, 0087, 0090, 0091, 0092, 0093, 0094, 0095, 0096; Kim397 at ¶¶ 0036–37, 0038–39, 0033–35, ¶¶ 0014, 0015, 0044, Abstract; Yang at ¶¶ 16, 17, 18, 25; Staudacher238 at 4:25–34, 4:35–50, 4:51–5:5, 2:7–33, 2:34–55, 1:58–67, 4:9–24, 2:1–6; Marchesotti at ¶¶ 0080, 0042, 0104, 0023, 0099, 0100, 0101, 0102, 0014, 0015, 0016, 0025, ¶¶ 0105–06; Ramesh at ¶¶ 0024, 0030, 0039, 0041, 0026, 0053, 0062, Claim 10; Iwane at 4:48–5:5; Ohmiya at ¶¶ 0163, 0007, 0006, 0012, 0074, 0079, 0100, 0164; Alhadeef at 12:51–65, 12:66–13:18, 13:19–25, 13:26–42, 14:16–30, 14:46–48, 9:59–64, 9:65–10:3, 10:4–11, 10:12–21, 12:45–50, 14:49–53, 15:1–6, 15:63–67, 16:1–7; Lu at 4:50–53, 5:5–13, 5:34–36, 10:54–57, 11:8–10, 3:66–4:3, 5:37–39; Fredlund at ¶¶ 0065, 0066, 0071, 0074, 0075, 0087, 0089, 0099; Lv at ¶¶ 0032, 0042, 0045, 0047, 0051, 0063, 0075, 0079; Ex. 682-Samsung WB700 at 1[f]; Ex. 682-Canon EOS-1DX at 1[f]; Ex. 682-Pentax K-5 at 1[f]; Pore at ¶¶ 0110, 0048, 0053, 0054, 0065, 0076, 0077, 0099, 0107, 0108, 0019, 0020, 0021, ¶¶ 0111–14, 0097–98; Cheatle at ¶¶ 0040, 0041, 0043, 0011, 0012,

0039, 0029, 0004; Wu at 13:56–14:1, 14:4–21, 14:22–26, 11:7–16, 13:39–44, 5:33–52, 5:53–61, 15:6–23; Chen at 5:40–54, 6:53–54, 8:52–61, 7:30–33, 9:50–51, 1:58–2:3, 2:17–39, Claim 14; Kim882 at ¶¶ 0062, 0067, 0077, 0099, 0100, 0016, 0006, ¶¶ 0018–19; Ex. 682-Sony A33 at 1[f]; Koh at 11:62–12:12, 12:13–16, 7:3–12, 7:13–25, 2:63–67, 2:41–47, 10:33–36; Meguro at ¶¶ 0044, 0045, 0047, 0067, 0102, 0103, 0104, 0107; Ex. 682-Nikon S630 at 1[f]; Phillips at ¶¶ 0023, 0026, 0029, 0030, 0032, 0117, 0118, 0033; Anon at 3:53–4:3, 4:4–23, 4:52–55, 8:32–35, 9:26–34, 9:56–67, 10:27–46; Jasinski at ¶¶ 28, 126, 123, 124, 0032, ¶¶ 0019–22, 0023–24, 0025–26, 0030–31, Abstract; Ex. 682-Liu at 1[f]; Ishiwata at ¶¶ 0070, 0083, 0084, 0085, 0086, 0111, 0112, 0011; Parulski177 at 30:9–20, 31:18–34, 31:35–55, 31:56–32:4, 32:5–17, 36:57–61, 28:5–15, 28:16–30; Steinberg at 23:58–24:9, 24:10–29, 26:23–33, 27:36–41, 27:42–57, 27:58–28:7, 28:8–14; Ex. 682-Canon SX210 IS at 1[f]; Ex. 682-Sony TX55 at 1[f].

The prior art references further describe “obtaining a fourth value (QI4) associated with recognition of object characteristics.” *See, e.g.*, Roux at ¶¶ 0065, 0067, 0068, 0041, 0047, 0048, 0003, 0004, 0007, ¶¶ 0052–53; Iwamoto at 4:46–58, 4:59–65, 5:5–13, 5:40–50, 6:1–18, 4:66–5:4, 5:14–16; Ex. 682-Kodak Z990 at 1[g]; Takeuchi at ¶¶ 0141, 0142, 0143, 0146, 0147, 0116, 0117, 0134, 0135, 0136, 0005, 0149, 0164, 0292, 0296, 0297, 0298, 0299, ¶¶ 0144–45; Aisaka at ¶¶ 0062, 0063, 0183, 0189, 0267, 0268, 0387; Savakis at 2:23–36, 8:13–19, 8:21–28, 8:29–60, 8:61–9:5, 9:6–18, 10:29–41, 10:42–51, 15:53–59; Mori at ¶¶ 0025, 0031, 0034, 0100, 0101, 0105, 0106, 0083, 0084, 0085, 0086, 0060, 0061, ¶¶ 0102–03, 0062–63; Shah at ¶¶ 0036–37, ¶¶ 0098, 0101, 0102, 0003, Abstract; Kim397 at ¶¶ 0005, 0007, 0026, 0028, 0035, 0039, ¶¶ 0032–33, 0036–37; Yang at Abstract, ¶¶ 5, 6, 7, 8, 17, 19, 28; Staudacher238 at 1:58–67, 2:1–6, 2:7–33, 4:9–24, 5:6–22, 5:23–42, 2:56–3:2, 3:3–8, 3:9–23; Marchesotti at ¶¶ 0027, 0067, 0070, 0071, 0072, 0073, 0075, 0023; Ramesh at ¶¶ 0004, 0005, 0006, 0020, 0024, 0028, 0029, 0031; Iwane at 4:48–5:5, 8:27–39,

8:40–53, 1:53–2:3, 2:4–21, 2:22–28; Ohmiya at ¶¶ 0102, 0103, 0104, 0105, 0110, 0112, 0113, 0073; Alhadeef at 13:56–64, 13:65–14:3, 14:4–15, 14:16–30, 14:46–53, 12:45–56, 12:57–65, 12:66–13:18, 13:19–25, 13:26–41, 13:42–47, 1:34–45, 14:54–63, 15:1–6, 2:36–50, 3:7–15, 3:16–30, 15:7–22; Lu at 9:57–62, 9:64–67, 10:2–5, 10:7–15, 10:18–20, 10:22–24, 3:58–65, 12:48–55, 3:32–42; Fredlund at ¶¶ 0065, 0066, 0071, 0074, 0075, 0101, 0102; Lv at Abstract, ¶¶ 0043, 0045, 0051, 0032, 0035, 0036, 0083, ¶¶ 0071–72; Ex. 682-Samsung WB700 at 1[g]; Ex. 682-Canon EOS-1DX at 1[g]; Ex. 682-Pentax K-5 at 1[g]; Pore at ¶¶ 0053, 0054, 0055, 0056, 0064, 0065, 0068, 0076, 0109, 0007, 0020, ¶¶ 0057–60, 0061–63, 0066–67, 0069–71, 0072–75, 0077–78, 0080–81, 0094–96, 0097–98, 0110–11, 0008–09, 0010–13, 0014–16, 0018–19, 0021–22; Cheatle at ¶¶ 0011, 0012, 0013, 0035, 0036, 0037, 0041, 0042; Wu at 4:25–42, 4:43–58, 10:36–50, 10:51–60, 10:61–11:6, 8:21–30, 10:20–35, 12:40–61, 14:56–15:2; Chen at 1:9–13, 1:54–57, 1:58–2:3, 2:4–16, Claims 1, 8, 25; Kim882 at ¶¶ 0051, 0059, 0061, 0062, 0063, 0064, 0066, 0067, 0068, 0110; Ex. 682-Sony A33 at 1[g]; Koh at 6:16–22, 6:28–39, 6:40–55, 6:56–7:2, 11:36–41, 13:15–34, 2:35–38; Meguro at ¶¶ 0042, 0043, 0044, 0045, 0047, 0057, 0071, 0072; Ex. 682-Nikon S630 at 1[g]; Phillips at ¶¶ 0031, 0032, 0015, 0008, 0023, 0029, 0033, 0066; Anon at 3:53–4:3, 1:41–49, 3:27–42, 6:42–50, 8:15–31, 8:65–9:25, 2:9–15, 1:59–2:8, 10:48–50; Jasinski at ¶¶ 120, 121, 111, 112, 113, 92, 93; Ex. 682-Liu at 1[g]; Ishiwata at ¶¶ 0063, 0064, 0065, 0072, 0074, 0059, 0061, 0051; Parulski177 at 17:57–18:18, 18:20–24, 16:23–36, 17:18–23, 25:22–35, 25:60–26:10, 27:61–28:2; Steinberg at 11:29–48, 11:57–12:5, 12:41–48, 20:66–21:24, 25:1–13, 32:37–48, 33:19–32, 39:58–65; Ex. 682-Canon SX210 IS at 1[g]; Ex. 682-Sony TX55 at 1[g].

The prior art references further describe “estimating a fourth weight (c4) associated with the fourth value.” *See, e.g.*, Roux at ¶¶ 0026, 0034, 0037, 0042, 0047, ¶¶ 0043–44; Iwamoto at 5:40–50, 6:1–18, 6:19–51, 6:52–66, 6:67–7:9, 3:35–57, 7:40, 3:58–60, 7:41–43, 7:18, 7:44–58,

7:59–64, 9:31–47; Ex. 682-Kodak Z990 at 1[h]; Takeuchi at ¶¶ 0148, 0136, 0132, 0140, 0124, 0125, 0127, 0203; Aisaka at ¶¶ 0020, 0021, 0022, 0024, 0284, 0285, 0286, 0291, 0300, 0301, ¶¶ 0287–88, 0289–90, 0292–93, 0298–99; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:4–15, 13:18–33, 13:35–40, 13:43–45, 13:47–54, 2:23–36, 2:5–22; Mori at ¶¶ 0033, 0034, 0041, 0031, 0032, 0040, 0042, ¶¶ 0038–39; Shah at ¶¶ 0028, 0069, 0070, 0075, 0076, 0086, 0087, 0090, 0091, ¶¶ 0071–72, 0073–74; Kim397 at Abstract, ¶¶ 0014, 0015, 0036, 0044, 0009, ¶¶ 0038–39; Yang at ¶¶ 8, 7, 27, 32, 14; Staudacher238 at 4:35–50, 4:25–34, 4:51–5:5, 2:34–55, 2:7–33, Abstract, 4:9–24; Marchesotti at ¶¶ 0068–69, ¶¶ 0073, 0080, 0091, 0096, 0099, 0104; Ramesh at ¶¶ 0029, 0030, 0039, 0040, 0041, 0062, 0020, 0024, 0028, ¶¶ 0026–27, Abstract; Iwane at 4:48–5:5, 5:8–23, Abstract, 1:53–2:3, 2:4–21, 15:35–41, 15:44–50, 15:51–67; Ohmiya at ¶¶ 0163, 0007, 0079, 0080, Abstract, Claims 4, 7, ¶¶ 0081–82; Alhadeif at 14:27–30, 14:46–55, 8:59–62, 9:35–39, 12:51–56, 12:59–65, 12:66–13:18, 13:19–25, 13:26–42; Lu Claim 4, 4:50–53, 10:54–57, 3:66–4:3; Fredlund at ¶¶ 0058, 0059, 0061, 0064, 0067, 0068, 0075; Lv at ¶¶ 0088, 0006, 0028, 0032, 0051, ¶¶ 0071–72; Ex. 682-Samsung WB700 at 1[h]; Ex. 682-Canon EOS-1DX at 1[h]; Ex. 682-Pentax K-5 at 1[h]; Pore at ¶¶ 0110–11, ¶¶ 0048, 0007, 0021, 0064, 0076, 0077, 0010; Cheatle at ¶¶ 0011, 0012, 0013, 0029, 0039, 0040, 0041, 0043; Wu at 13:39–44, 13:56–14:3, 14:4–21, 14:22–26, 11:7–16, 9:6–14, 5:53–61, 2:27–42; Chen at 1:58–2:3, 2:17–39, 8:17–39, 6:53–54, 8:52–61, 7:30–33, 9:50–51, Claims 14, 22; Kim882 at ¶¶ 0006, 0016, 0062, 0066, 0067, 0068, 0069, 0077, 0020, 0021; Ex. 682-Sony A33 at 1[h]; Koh at 6:9–15, 7:3–12, 11:52–61, 11:62–12:12, 12:13–23, 12:24–35, 13:35–45, 13:46–55, 13:56–67, 14:4–6, 14:7–32, 14:34–46, 2:41–47, 2:48–58, 2:59–67, 3:1–12; Meguro at ¶¶ 0100, 0101, 0102, 0103, 0104, 0106, 0107, 0108; Ex. 682-Nikon S630 at 1[h]; Phillips at ¶¶ 0023, 0026, 0029, 0030, 0032, 0086, 0087, 0088; Anon at 3:53–4:3, 4:4–23, 4:24–33, 4:42–51, 7:4–14, 8:15–31, 8:32–35, 9:56–67; Jasinski at ¶¶ 122, 123, 124, 126, 128, ¶¶

0028–29, 0030–31, 0019–22, 0023–24, 0025–26; Ex. 682-Liu at 1[h]; Ishiwata at ¶¶ 0021, 0103, 0104, 0049, 0064, 0065, 0017, 0071, Claim 11, ¶¶ 0015–16; Parulski177 at 25:22–35, 25:37–44, 25:60–26:10, 27:61–28:2, 28:16–30, 36:57–61, 23:33–51; Steinberg at 26:16–22, 26:46–51, 26:60–67, 39:58–65, 40:10–23, 31:1–33, 31:34–47, 31:48–56; Ex. 682-Canon SX210 IS at 1[h]; Ex. 682-Sony TX55 at 1[h].

The prior art references further describe “obtaining a fifth value (QI5) associated with aesthetic quality of image based on composition.” *See, e.g.*, Roux at ¶¶ 0064, 0065, 0067, 0068, 0069, 0007, 0024, 0054; Ex. 682-Kodak Z990 at 1[i]; Takeuchi at ¶¶ 0005–06, 0139–40, ¶¶ 0122, 0164, 0125, 0141, 0177, 0226, 0296, 0299, 0220, 0221; Aisaka at ¶¶ 0055, 0056, 0063, 0127, 0267, 0268, 0058, 0126, ¶¶ 0124–25; Savakis at 9:56–63, 4:64–5:8, 2:23–36, 4:64–5:29, 11:8–17, 11:19–29, 11:30–39, Claim 38; Mori at ¶¶ 0034, 0040, 0041, 0100, 0101, 0104, ¶¶ 0102–03; Shah at ¶¶ 0003, 0004, 0090, 0091, 0092, 0093, 0094, 0095, 0096, 0103, 0104, 0105, 0106, ¶¶ 0088–89, 0001–02; Yang at ¶¶ 8, 14, 15, 19, 21, 27, 28; Staudacher238 at 1:58–67, 2:1–6, 2:7–33, 2:34–55, 2:56–3:2, 3:24–36, 4:25–34, 5:6–22; Marchesotti at ¶¶ 0005, 0028, 0078, 0079, 0081, 0041; Ramesh at Abstract, ¶¶ 0004, 0005, 0024, 0025, 0028, 0029, 0030; Iwane at 4:48–5:5, 5:35–51, 6:9–14, 6:15–29, 14:22–34, 15:35–41, 15:44–50; Ohmiya at ¶¶ 0105, 0106; Alhadeef at 4:10–12, 7:44–52, 14:28–30, 14:46–55, 14:56–63, 15:13–22, 15:49–62; Lu at 1:44–50, 2:62–3:3, 3:4–8, 3:32–42, 9:38–44, 10:7–15, 10:18–20, 10:44–53; Fredlund at ¶¶ 0086, 0087, 0088, 0089, 0090, 0026, 0070, 0071, 0103; Lv at ¶¶ 0032, 0042, 0045, 0046, 0048, 0051, 0070, 0072; Ex. 682-Samsung WB700 at 1[i]; Ex. 682-Canon EOS-1DX at 1[i]; Ex. 682-Pentax K-5 at 1[i]; Pore at ¶¶ 0007, 0019, 0048, 0053, 0054, 0064, 0065, 0076, 0077, 0109, ¶¶ 0110–11, Claim 20; Cheatle at ¶¶ 0002, 0005, 0006, 0011, 0013, 0029, 0040, 0047; Wu at Abstract, 1:52–67, 2:1–10, 4:25–42, 4:43–58, 4:59–65, 5:17–32, 6:7–19; Chen at 1:16–23, 4:4–5, 1:25–50, 4:6–20, 1:54–57, 4:52–62,

1:58–2:3, 4:63–5:3, 7:53–56, 7:57–8:7, 9:50–51, 9:52–10:9, 10:10–22, 2:4–16; Kim882 at ¶¶ 0003–04, ¶¶ 0005, 0007, 0071, 0072, 0084, 0100, 0101, 0107; Ex. 682-Sony A33 at 1[i]; Koh at Abstract, 1:53–60, 2:5–8, 3:1–12, 2:31–34, 6:56–7:2, 9:52–56, 11:14–18; Meguro at Abstract, ¶¶ 0002, 0006, 0007, 0043, 0044, 0045, 0047, 0101, 0102, ¶¶ 0041–42; Ex. 682-Nikon S630 at 1[i]; Phillips at ¶¶ 0015, 0031, 0066, 0079, 0080, 0094, 0095, ¶¶ 0091–93; Anon at 1:33–40, 2:29–44, 2:64–3:14, 3:43–52, 3:53–4:3, 4:4–23, 4:24–33, 4:56–5:25, 5:26–51, 7:4–14, 7:30–41, 8:15–31, 8:32–43, 8:44–54, 8:65–9:25, 9:26–34, 10:8–20; Jasinski at ¶¶ 85, 86, 111, 114, 118, 4, 31; Ex. 682-Liu at 1[i]; Ishiwata at ¶¶ 0008, 0032, 0044, 0046, 0053, 0054, 0113, 0114; Parulski177 at 17:1–13, 17:18–33, 17:34–56, 18:25–36, 18:37–44, 20:62–21:5, 21:6–16, 21:64–22:8, 22:9–17; Steinberg at 5:65–6:7, 11:29–48, 8:33–60, 8:61–9:6, 12:41–48, 14:45–52, 18:50–60, 18:61–19:4; Ex. 682-Canon SX210 IS at 1[i]; Ex. 682-Sony TX55 at 1[i].

The prior art references further describe “estimating a fifth weight (c5) associated with the fifth value.” *See, e.g.*, Roux at Abstract, ¶¶ 0023, 0034, 0052, 0063, 0067, 0068, 0071; Iwamoto at 5:40–50, 5:5–13, 5:24–39, 7:18, 7:44–58, 3:64–4:3, 7:59–64, 3:35–57, 7:40, 3:58–60, 7:41–43, 9:31–47, 9:48–56, 3:4–11, 6:52–66, 3:12–20, 6:67–7:9; Ex. 682-Kodak Z990 at 1[j]; Takeuchi at ¶¶ 0148, 0187, 0256, 0261, 0267, 0026, 0027, 0028; Aisaka at ¶¶ 0276, 0277, 0300, 0301, 0295, 0326, 0327, 0328, 0365, 0366, 0367, ¶¶ 0278–79, 0298–99, 0293–94, 0296–97, 0363–64; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:4–15, 13:18–33, 2:23–36, 5:30–61, 2:37–44, 5:62–64, 2:45–55, 9:56–63, 11:8–17, 11:19–29, 11:30–39, 11:43–56, 11:60–12:4; Mori at Abstract, ¶¶ 0010, 0025, 0033, 0034, 0040, 0041, 0049, 0050, 0064, 0065, 0066; Shah at ¶¶ 0028, 0090, 0091, 0092, 0093, 0103, 0104, 0105; Kim397 at ¶¶ 0036–38, ¶¶ 0044, 0014, 0015, Abstract; Yang at ¶¶ 14, 15, 21, 25; Staudacher238 at 2:34–55, 4:25–34, 4:35–50, 4:51–5:5, 5:6–22, 2:7–33, Abstract, 3:24–36; Marchesotti at ¶¶ 0099, 0104, 0105, 0080, 0042, ¶¶ 0096–98; Ramesh at ¶¶ 0010, 0030,

0034, 0039, 0041, 0062, 0024, 0053; Iwane at 4:48–5:5; Ohmiya Claim 5; Alhadeef at 14:28–30, 14:46–55, 14:56–63, 12:45–56, 12:57–65, 12:66–13:18, 13:19–25, 13:26–41, 1:27–30, 1:34–45, 1:49–59, 4:7–12, 7:44–52, 7:53–62, 15:1–6, 12:17–19, 14:16–27; Lu at 10:36–42, 10:44–57, 11:8–10, 11:30–32, 3:66–4:3, 4:4–12, 4:13–22, 4:50–53, 2:25–39; Fredlund at ¶¶ 0099, 0100, 0080, 0065, 0070, 0071, 0072, Claim 11; Lv at ¶¶ 0042, 0045, 0046, 0061, 0062, 0063, 0066, 0068, 0072, 0075, 0076; Ex. 682-Samsung WB700 at 1[j]; Ex. 682-Canon EOS-1DX at 1[j]; Ex. 682-Pentax K-5 at 1[j]; Pore at ¶¶ 0109, 0110, 0048, 0053, 0054, 0064, 0065, 0068, ¶¶ 0111–14, 0066–67; Cheatle at ¶¶ 0004, 0005, 0011, 0012, 0040, 0041, 0043, Claim 24; Wu at 13:56–14:3, 14:4–21, 14:22–37, 12:40–61, 13:39–44, 7:60–8:20, 8:21–30, 4:43–58, 4:59–65, 5:33–52, 5:53–61; Chen at 3:35–51, 5:7–26, 8:17–39, 1:58–2:3, 4:63–5:3, 2:4–16, 5:7–29, 4:44–51, Claim 25; Kim882 at ¶¶ 0051, 0052, 0072, 0077, 0084, 0088, 0107, 0109; Ex. 682-Sony A33 at 1[j]; Koh at Abstract, 1:53–60, 2:5–8, 2:48–58, 3:1–12, 6:16–27, 6:56–7:2, 7:3–7, 11:52–61, 11:62–12:12; Meguro at ¶¶ 0042, 0044, 0045, 0047, 0048, 0057, 0067, 0101; Ex. 682-Nikon S630 at 1[j]; Phillips at ¶¶ 0173–75, 0176–79, 0183–84, ¶¶ 0181, 0182, 0023, 0026, 0030; Anon at 8:15–31, 8:32–35, 3:53–4:3, 4:4–23, 4:42–51, 8:44–54, 8:65–9:25, 9:26–34; Jasinski at ¶¶ 94, 120, 121, 122, 123, 124, 126; Ex. 682-Liu at 1[j]; Ishiwata at ¶¶ 0031, 0044, 0045, 0046, 0057, 0059, 0060, 0120; Parulski177 at 14:46–15:4, 20:33–36, 20:38–60, 24:50–63, 25:22–35, 27:61–28:2, 29:49–55, 31:35–55, 36:57–61; Steinberg at 26:16–22, 26:23–33, 26:46–51, 26:60–67, 27:36–41, 27:42–57, 27:58–28:7, 28:8–14; Ex. 682-Canon SX210 IS at 1[j]; Ex. 682-Sony TX55 at 1[j].

The prior art references further describe “calculating a total quality value according to, or based on values QI1, QI2, QI3 and QI5 and weights c1, c2, c3, c4 and c5.” *See, e.g.*, Roux at ¶¶ 0034, 0035, 0037, 0042, 0058, 0067; Iwamoto at 3:35–57, 3:58–60, 7:18, 3:64–4:3, 7:40, 7:44–58, 7:59–64; Ex. 682-Kodak Z990 at 1[k]; Takeuchi at ¶¶ 0139–40, 0256–57, ¶¶ 0141, 0136, 0148,

0204, 0205, 0206, 0207, 0208, 0209, 0214, 0215, 0216, 0217, 0026, 0027, 0028, 0032, 0253, 0254, 0255; Aisaka at ¶¶ 0124–25, ¶¶ 0127, 0128, 0064, 0065, 0112, Abstract; Savakis at 12:29–39, 12:40–63, 12:64–13:3, 13:4–15, 13:18–33, 2:45–55, 2:5–22, 4:64–5:29, 2:23–36, 5:30–61, 2:37–44, 5:62–64, 3:58–4:1; Mori at ¶¶ 0032, 0033, 0040, 0041, 0051, 0054, 0055, 0072, 0080, 0081, 0100, 0101, 0102; Shah at ¶¶ 0069, 0070, 0086, 0092, 0093, ¶¶ 0071–72, 0073–74; Kim397 at Abstract, ¶¶ 0014, 0015, 0044, ¶¶ 0036–37, 0038–39, Claims 8, 9, 12; Yang at ¶¶ 14, 15, 21, 25; Staudacher238 at 2:34–55, 4:25–34, 4:35–50, 5:6–22, Abstract, 2:1–6, 3:9–23, 3:24–36, 3:37–50, Claim 14; Marchesotti at ¶¶ 0072, 0073, 0099, 0100, 0101, 0102, 0104, 0042, 0023, 0024, 0025, ¶¶ 0105–06; Ramesh at ¶¶ 0030, 0034, 0039, 0040, 0041, 0006, 0032, 0033, Claim 10; Iwane at 4:48–5:5, 5:8–23, 5:24–34, 5:35–51, 8:23–26, 13:54–67, Abstract; Ohmiya Claims 4, 7, ¶¶ 0092, 0093, 0094, 0095, 0163, 0079, 0080, ¶¶ 0081–82; Alhadeef at 14:46–55, 14:56–63, 12:45–56, 9:65–10:3, 10:4–19, 9:14–23, 9:28–43, 12:57–65, 12:66–13:18, 13:19–25, 4:45–51, 1:60–67, 2:1–11, 2:13–22; Lu at 4:13–22, 4:50–53, 10:54–57, 11:8–10, 11:30–32, Abstract, 1:8–18, 12:9–11, 12:19; Fredlund at ¶¶ 0068, 0069, 0058, 0061, 0064, 0067, 0054, 0037; Lv at ¶¶ 0042, 0075, 0032, 0045, 0046, 0047, 0069, 0070, ¶¶ 0071–72; Ex. 682-Samsung WB700 at 1[k]; Ex. 682-Canon EOS-1DX at 1[k]; Ex. 682-Pentax K-5 at 1[k]; Pore at ¶¶ 0048, 0109, 0110, 0007, 0021, 0047, ¶¶ 0111–14, Abstract; Cheatle at ¶¶ 0013, 0039, 0040, 0041, 0042, 0043, 0004, 0029, 0016, 0027, 0044, 0045; Wu at 10:25–35, 13:25–38, 13:39–44, 4:43–58, 4:59–65, 5:17–32, 7:60–8:20, 8:21–30, 11:7–16, 14:4–21, 14:22–26; Chen at 1:58–2:3, 2:4–16, 9:50–51, 7:53–56; Kim882 at ¶¶ 0069–70, 0085–86, 0091–92, 0093–94, ¶¶ 0071, 0072, 0078, 0084, 0095, 0100, 0101, 0102, 0103; Ex. 682-Sony A33 at 1[k]; Koh at 7:13–25, 11:62–12:12, 6:56–7:2, 7:3–12, 7:26–37, 9:52–56, 9:57–10:11, 10:12–32, 10:33–36, 11:14–26, 11:27–35, 11:36–51; Meguro at Abstract, ¶¶ 0006, 0007, 0008, 0101, 0102, 0112, 0115; Ex. 682-Nikon S630 at 1[k]; Phillips at ¶¶ 0030, 0026, 0023, 0029, 0032,

0017, 0079, 0015; Anon at Abstract, 8:32–35, 1:59–2:8, 2:9–15, 3:53–4:3, 5:26–51, 6:42–50, 9:26–34, 10:27–46; Jasinski at ¶¶ 94, 120, 121, 126, 128, 129, 130, ¶¶ 0019–22, 0023–24, 0025–27; Ex. 682-Liu at 1[k]; Ishiwata at ¶¶ 0091, 0092, 0093, 0112, 0113, 0011, 0012, 0013, 0014, 0020, 0021, 0022, 0023, 0116, 0069, 0070, 0071, 0072, 0057, 0058, 0059, 0060, 0061; Parulski177 at 34:43–49, 34:51–64, 34:65–35:7, 35:8–23, 35:34–50, 35:53–65, 35:66–36:2, 36:3–9, 36:10–20, 36:22–40, 36:41–56, 36:57–61, 36:62–37:5, 31:18–34, 31:35–55, 31:56–32:4, 29:49–55, 29:56–67, 30:1–8, 30:9–20, 28:21–30, 14:48–15:4; Steinberg at 23:58–24:9, 24:30–44, 27:36–41, 27:42–57, 19:44–52, 19:53–62, 7:54–62, 12:41–48; Ex. 682-Canon SX210 IS at 1[k]; Ex. 682-Sony TX55 at 1[k].

Other examples of these concepts are cited in the attached charts for the above references. *See* Appendix A, Exhibits 682-Aisaka through 682-Yang. It would have been known and simple to take prior art for real time assessment of picture quality by comparison with similar objects, and it would have been obvious to a POSITA to try this. *Id.* It would have also yielded predictable results in the context of improving picture quality. *Id.*

Samsung is not aware of any secondary considerations supporting non-obviousness of the '682 Patent claims. To the extent SnapAid seeks to introduce any alleged secondary considerations in the future, Samsung reserves the right to respond at that time.

F. Invalidity Under Section 112

Samsung provides an identification of the limitations of the '682 Patent that are invalid based on indefiniteness under pre-AIA 35 U.S.C. § 112 ¶ 2, or enablement or written description under pre-AIA 35 U.S.C. § 112 ¶ 1. These Contentions are preliminary, as they are being proffered without the benefit of expert disclosure or discovery.

Asserted Claims 1–20 of the '682 Patent (and all claims which depend from these claims) are indefinite, and thus invalid. “[A] patent is invalid for indefiniteness if its claims, read in light

of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). For example, as applied in SnapAid’s Infringement Contentions, the terms “calculating a total quality value,” “aesthetic quality of image based on composition,” “a combination of at least one of digital camera exposure, focus and under or over exposure,” and “wherein the acting comprises affecting the digital camera in response to the total value” are indefinite because they are not only subjective but also do not have a meaning that can be clearly determined from the patent, and thus fail to put the public on notice of what is and is not covered by these claims.

Asserted Claims 1–20 of the ’682 Patent are invalid under § 112 ¶ 1, because the specification as filed does not contain a sufficient written description supporting those claims. For example, the patent disclosure would not lead a person of ordinary skill in the art to understand that the named inventor had possession of the purported inventions as claimed and in view of SnapAid’s contentions. For example, Asserted Claims 1–20 (and all claims that depend from these claims) fail to satisfy the requirements of 35 U.S.C. § 112 for at least the following reasons: the ’682 Patent fails to provide an adequate written description of the phrases “calculating a total quality value,” and “the device comprises multiple motion or location sensors for sensing the device motion selected from a group consisting of a gyroscope, accelerometer, Global Positioning System (GPS), 9 Degrees of Freedom (DOG) sensing component, and 10 Degrees of Freedom (DOG) sensing component” as applied in SnapAid’s Infringement Contentions.

The aforementioned claims are invalid because they are not enabled or described by the specification of the ’682 Patent. The subject matter of these claims, as described above, is not sufficiently shown in the specification of the ’682 Patent. The subject matter of these claims, as

described above, is not sufficiently enabled because the '682 patent specification does not teach one skilled in the art how to make and use the alleged invention. For example, the '682 Patent fails to enable the following and thus, Asserted Claims 1–20 of the '682 Patent are invalid: “calculating a total quality value,” and “wherein algorithms of deep learning are used to compute the total quality value.” The foregoing phrases are not described in such a way that one of ordinary skill in the art could implement them to achieve the results sought by the individual named on the face of the '682 Patent as the inventor. The foregoing phrases are not described in such a way that a person having ordinary skill in the art at the time of the alleged invention would have understood that the individual named as the inventor on the face of the '682 Patent was in possession of the claimed subject matter. The Asserted Claims of the '682 Patent also do not comply with § 112 because they do not set forth what the applicant regards is the invention.

A more detailed basis for the above indefiniteness, written description, and enablement defenses may be set forth in any expert report(s) on invalidity to be served on SnapAid in accordance with the Court’s Scheduling Order.

G. Invalidity Under Section 101

The asserted claims of the '682 patent are invalid under *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208 (2014) because they are directed to patent-ineligible subject matter and fail to include an “inventive concept,” *i.e.*, some additional element or combination of elements “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” 573 U.S. 208, 217–18 (2014).

The asserted claims of the '682 patent are directed to a patent-ineligible concept—namely, the abstract idea of assessing picture quality and suggesting that the photographer take another picture after making an adjustment, such as to the photographer’s location or angle. The claims are directed to a process that photographers conduct in their minds—assessing a picture’s quality

and then taking a new picture to try to get a better picture—which renders them abstract under Federal Circuit case law holding that “methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas—the ‘basic tools of scientific and technological work’ that are open to all.” *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)); *PersonalWeb Techs. LLC v. Google LLC*, 8 F.4th 1310, 1316 (Fed. Cir. 2021); *Longitude Licensing Ltd. v. Google LLC*, 2025 WL 1249136, at *2 (Fed. Cir. Apr. 30, 2025); *Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021); *Broadband iTV, Inc. v. Amazon.com, Inc.*, 113 F.4th 1359, 1371 (Fed. Cir. 2024); *USC IP P’ship, L.P. v. Meta Platforms, Inc.*, 2023 WL 5606977, at *2 (Fed. Cir. Aug. 30, 2023). This is further confirmed by the specification, which provides that the claimed inventions “utilize camera hardware ... to evaluate pictures taken in real time, and actively assist in obtaining the best picture given the circumstances at hand.” ’682 Pat., 2:14-18.

The asserted claims of the ’682 patent also lack any inventive concept and merely implement the abstract idea of taking a better picture using generic camera components—a “digital camera module,” an “optical lens,” an “image sensor,” a “motion or location sensor,” and a “processor.” ’682 Pat., Cl. 1. The inventor of the ’682 patent does not purport to have invented these components or described or claimed any specific improvement in their functionality. To the contrary, the specification confirms that these are conventional components. *See, e.g.,* ’682 Pat., 6:23-24 (“Any suitable input device, such as but not limited to a sensor, may be used ...”), 6:28-30 (“Any suitable processor may be employed to compute or generate information as described herein ...”). That these components are known and conventional is further demonstrated by their disclosure throughout the prior art disclosed in these contentions. Further, the dependent claims similarly recite additional generic limitations that fail to add any inventive concept, and are

therefore patent-ineligible. *See In re Bd. of Trs. of Leland Stanford Junior Univ.*, 991 F.3d 1245, 1250 (Fed. Cir. 2021); *Braemar Mfg., LLC v. ScottCare Corp.*, 816 F. App'x 465, 470 (Fed. Cir. 2020); *In re TLI Commc'ns LLC Pat. Litig.*, 823 F.3d 607, 611 (Fed Cir. 2016). Accordingly, the asserted claims of the '682 patent are patent-ineligible under § 101.

XI. ACCOMPANYING DOCUMENT PRODUCTION

Pursuant to P.R. 3-4(b) and concurrently with the service of these Invalidity Contentions, Samsung is producing prior art references and preliminary corroborating evidence concerning prior art systems that do not appear in the file histories of the Asserted Patents. *See* SAMSUNG_SA_0016485–SAMSUNG_SA_0021541. Many of these prior art references and corroborating evidence are cited in and support the accompanying invalidity charts. In addition, Samsung is making available for inspection at Kirkland & Ellis' New York office a computer containing source code for the Accused Instrumentalities (as defined in SnapAid's Infringement Contentions).

Dated: December 1, 2025

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CERTIFICATE OF SERVICE

I hereby certify that these disclosures were served upon counsel for SnapAid via email on
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