

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

OS-New Horizon Personal Computing
Solutions Ltd.,

Plaintiff,

vs.

Samsung Electronics Co., Ltd., and
Samsung Electronics America, Inc.

Defendants.

Case No. 2:24-cv-00634-JRG-RSP

JURY TRIAL DEMANDED

**SAMSUNG ELECTRONICS AMERICA, INC. AND SAMSUNG
ELECTRONICS CO., LTD.’S INVALIDITY CONTENTIONS**

Pursuant to Patent Rules 3-3 and 3-4, the Docket Control Order entered by the Court (Dkt. No. 23), and Paragraph 3(a)(ii) of the Discovery Order (Dkt. No. 24), Defendants Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively “Samsung” or “Defendants”) hereby provide their Invalidity Contentions and accompanying document production with respect to the claims identified by Plaintiff OS-New Horizon Personal Computing Solutions Ltd. (“OSNH” or “Plaintiff”) in its Patent Rule 3-1 Disclosures. Defendants’ Invalidity Contentions include the accompanying claim charts concerning U.S. Patent No. 8,401,875 (“the ’875 Patent”).

I. INTRODUCTION

As disclosed in its P.R. 3-1 Disclosure of Asserted Claims and Infringement Contentions, Plaintiff asserts claims 1, 4, 15, and 18 of the ’875 patent (“the Asserted Claims”).

Plaintiff asserts that claims 1, 4, and 15 of the ’875 patent are entitled to at least the priority date of March 12, 2010 and that claim 18 of the ’875 patent is entitled to at least the priority date of August 4, 2010. By identifying Plaintiff’s alleged priority date for the Asserted Claims of the

'875 patent, Defendants do not concede that Plaintiff's claims of priority are correct. *See* Section VII.A, *infra*. Furthermore, to the extent that Defendants' Invalidity Contentions as set forth herein and in the accompanying appendices may reflect Plaintiff's apparent claim constructions based on their Disclosure of Asserted Claims and Infringement Contentions, Defendants disagree with Plaintiff's constructions.

As further detailed in and supported by these Invalidity Contentions, Defendants contend that each of the Asserted Claims is invalid under at least pre-AIA 35 U.S.C. §§ 102, 103, and/or 112. Defendants reserve the right to prove the invalidity of the Asserted Claims on bases other than those required to be disclosed in these disclosures pursuant to P.R. 3-3.

II. AMENDMENT/SUPPLEMENTATION

Defendants' Invalidity Contentions pertain to the Asserted Claims as identified in Plaintiff's Disclosure of Asserted Claims and Infringement Contentions. To the extent the Court later allows Plaintiff to amend its infringement contentions and/or assert one or more claims other than the Asserted Claims, Defendants reserve the right to modify, amend, or supplement these Invalidity Contentions accordingly; for example, to show the invalidity and/or ineligibility of any such newly Asserted Claims.

These Invalidity Contentions are based on Defendants' current understanding of the Asserted Claims and Plaintiff's apparent view of the scope of those claims as shown, for example, in Plaintiff's Disclosure of Asserted Claims and Infringement Contentions. A *Markman* Order in this case has not yet been issued, and in no way should these Invalidity Contentions be taken as any admission or acquiescence by Defendants as to the proper scope of the Asserted Claims and/or proper claim constructions of terms and phrases recited in those claims. By identifying prior art that anticipates and/or renders obvious the Asserted Claims, Defendants do not admit that the claim limitations are capable of construction, do not admit that any claim limitations are supported with

an appropriate written description and enabling disclosure in the applicable patent specifications, and do not adopt Plaintiff's apparent claim constructions or admit the accuracy of any particular claim construction. Defendants reserve all rights to later challenge or oppose any claim constructions advanced by Plaintiff and to present their own claim construction positions as permitted by the Court.

Defendants further reserve the right to revise these Invalidity Contentions in view of the Court's construction of terms and phrases recited in one or more of the Asserted Claims, additional information obtained during discovery, additional infringement theories put forth by Plaintiff during fact and/or expert discovery, any findings as to the priority date(s) of the Asserted Claims, and/or positions that Plaintiff, its fact witnesses, or its expert witness(es) may take concerning claim construction, infringement, and/or invalidity issues, as permitted by the Court. Defendants further reserve the right to supplement their accompanying P.R. 3-4 document productions should they later discover additional prior art documents, information, testimony, prior art systems and related documentation, and/or software or hardware code, including information provided by third parties after the date of service of these Invalidity Contention.

Additionally, Plaintiff has not identified their contentions regarding the level of ordinary skill in the art ("POSITA") for the '875 Patent. Thus, Defendants have based their Invalidity Contentions on the level of skill in the art apparent from the face of the '875 Patent. For the avoidance of doubt, Defendants contend that the Asserted Claims are invalid for the reasons set forth in their Invalidity Contentions under any plausible definition of the level of ordinary skill for the '875 Patent. Nevertheless, Defendants reserve the right to revise these Invalidity Contentions in response to any position taken by Plaintiff on the level of ordinary skill in the art applicable to the '875 Patent.

Defendants may further rely on inventor admissions concerning the scope or state of the prior art relevant to the Asserted Claims, the patent prosecution histories of the '875 Patent, related patents, and/or patent applications, any deposition or trial testimony of the named inventors of the '875 Patent, and the papers filed and any evidence produced or submitted by Plaintiff in connection with these cases or other related litigation.

Prior art not included in these Invalidity Contentions, whether known or not known to Defendants, may become relevant. Defendants are currently unaware of the extent, if any, to which Plaintiff will contend that limitations of the Asserted Claims are not disclosed in the prior art identified in these Invalidity Contentions. Accordingly, Defendants reserve the right to identify other references that would disclose the allegedly missing limitation(s) of the claimed method, device, or system.

The references identified in these Invalidity Contentions, which include the attached claim charts, may disclose the elements of the Asserted Claims explicitly and/or inherently, render those elements alone or in combination obvious to those of ordinary skill in the art even absent an explicit or inherent disclosure, and/or they may be relied upon to show the state of the art in the relevant time frame. References identified in these Invalidity Contentions, as well as the "References Cited" on the face of the '875 Patent and the patents cited within the body of the '875 Patent, may be used to illustrate, but not limit the scope of, the state of the art to which the '875 Patent pertain (i.e., at a time prior to the date of alleged inventions of the Asserted Claims of the '875 Patent). Moreover, Defendants reserve the ability to rely on later-identified sources of information, including, but not limited to, witness testimony and other discovery, to establish the state of the art in the relevant time frame pertaining to the '875 Patent.

Because discovery has just recently begun, Defendants anticipate that additional prior art and invalidity bases may be found. Defendants' investigation and analysis of the prior art is continuing, and thus Defendants reserve the right to supplement, amend, and/or revise the information provided herein as Defendants conduct further investigation and/or analysis, including identifying, charting, and relying on additional references.

Additionally, in view of likely third-party discovery that will be taken, Defendants reserve the right to present additional items of prior art under 35 U.S.C. §§ 102 and/or 103 located during discovery or further investigation, and to assert contentions of invalidity under 35 U.S.C. §§ 102 and/or 103. For example, Defendants expect to issue subpoenas to third parties believed to have knowledge, documents, and/or other evidence concerning invalidity of one or more of the Asserted Claims.

In addition to the positions and prior art identified in these Invalidity Contentions (including the accompanying claim charts), Defendants also incorporate by reference all Invalidity Contentions, prior art¹, and invalidity claim charts (including, without limitation, all anticipation positions, obviousness positions (including all prior art combinations and motivations to combine), indefiniteness positions, written description positions, and non-enablement positions) concerning the '875 Patent, as disclosed at any time. This includes, without limitation, disclosures in previous or related litigation, in United States Patent & Trademark Office ("USPTO") proceedings, by Plaintiff, by any other parties accused of patent infringement by Plaintiff, or by the named inventors or any individuals associated with the prosecution and/or any form of post-grant review or reexamination of the '875 Patent.

¹ Prior art appearing in the file history of the '875 Patent is not required to be separately produced by Defendants under P.R. 3-4(b).

Plaintiff has a present and ongoing duty to produce to Defendants all relevant documents from any other litigation (including *inter partes* review and/or reexamination proceedings) involving the '875 Patent, any patent related to the '875 Patent, and/or any other patent allegedly assigned to Plaintiff claiming priority to the '875 Patent ("Other Proceedings"), including, but not limited to, all prior art, invalidity contentions, and expert reports on invalidity (among other relevant items). Defendants reserve the right to supplement or otherwise amend these Invalidity Contentions in response to any relevant discovery provided by Plaintiff, third parties, opening or rebuttal expert reports, fact or expert depositions, or in response to any claim construction ruling(s) issued by this Court (regardless of how and when such ruling is made). Defendants also reserve the right to supplement or otherwise amend these Invalidity Contentions in response to any rebuttal evidence disclosed by Plaintiff or as otherwise may be necessary or appropriate under the circumstances.

III. P.R. 3-3(A) – IDENTIFICATION OF PRIOR ART

Pursuant to P.R. 3-3(a), and subject to Defendants' reservations of rights, Defendants identify the following prior art that anticipates and/or renders obvious one or more Asserted Claims of the '875 Patent as detailed in Appendices A-1–A-10 and elsewhere in these Invalidity Contentions. Below are tables identifying individual items of prior art. The prior art references, systems, and products listed below and in the accompanying claim charts may be relied upon for certain limitations, state of the art, and background of the art; as evidence of the level of skill in the art at the time(s) of the filing of the '875 Patent; or in support of assertions that it is proper to combine certain prior art references in certain ways.

Defendants also incorporate by reference each and every prior art reference of record in the prosecution of the '875 Patent and patents or patent applications related to the '875 Patent, as well as the prior art referred to in the specification of the '875 Patent. In these Invalidity

Contentions, Defendants have identified each item of prior art, based on currently available information, including:

1. each patent, constituting prior art under 35 U.S.C. §§ 102(a)(1) and/or (a)(2), by its patent number, country of origin, and date of issue;
2. each non-patent publication, constituting prior art under 35 U.S.C. §§ 102(a)(1) and/or (a)(2), by its title, date of publication, and, where feasible, author and publisher;
3. sales or public disclosures, constituting prior art under 35 U.S.C. § 102(a)(1), by the item offered for sale or publicly used or known, the date the offer or use took place or the information became known, and the identity of the person or entity which made the use or which made and received the offer, or the person or entity which made the information known or to whom it was made known; and
4. prior art references showing that the claimed invention was otherwise available to the public under 35 U.S.C. § 102(a)(1), by specifying the form and nature of the reference, the manner in which the reference was made public, and the date on which the reference was made public.

Defendants' identification of patents and publications as prior art herein and in the attached invalidity claim charts includes the publications themselves as well as the use of the products and systems described therein. Defendants' investigation continues, but information available to date indicates that such products and systems were in public use, on sale, and/or otherwise available to the public more than one year before the effective filing date of the '875 Patent. Upon information and belief, these prior art products and systems and their associated references anticipate and/or render obvious one or more of the Asserted Claims of the '875 Patent.

A. Prior Art Patents, Patent Applications, and Publications

Table 1: Prior Art Patents and Patent Application Publications

Patent Number or Title (Primary Inventor/Author)	Country of Origin	Filing Date	Date of Issue/Publication
U.S. Pat. App. Pub. No. 2009/083847 A1 to Fadell et al. (“Fadell”)	U.S.	September 9, 2008	March 26, 2009
U.S. Pat. No. 8,782,775 to Fadell et al. (“Fadell II”)	U.S.	September 9, 2008	July 15, 2014
U.S. Pat. App. Pub. No. 2009/0083850 to Fadell et al. (“Fadell III”)	U.S.	September 9, 2008	March 26, 2009
U.S. Pat. No. 7,814,332 to Beenau et al. (“Beenau I”)	U.S.	September 6, 2007	October 12, 2010
U.S. Pat. App. Pub. No. 2010/0030693 A1 to Beenau et al. (“Beenau”)	U.S.	September 6, 2007	February 4, 2010
U.S. Pat. App. Pub. No. 2010/0115607 A1 to Pratt et al. (“Pratt”)	U.S.	November 6, 2008	May 6, 2010
U.S. Pat. App. Pub. No. 2009/0037742 A1 to Narayanaswami et al. (“Narayanaswami”)	U.S.	July 31, 2007	February 5, 2009
U.S. Pat. App. Pub. No. 2007/0241861 to Venkatanna et al. (“Venkatanna”)	U.S.	April 18, 2006	October 18, 2007
U.S. Pat. No. 6,788,928 to Kohinata et al. (“Kohinata”)	U.S.	October 23, 2002	September 7, 2004
U.S. Pat. No. 5,719,950 A to Osten et al. (“Osten”)	U.S.	August 30, 1995	February 17, 1998

Patent Number or Title (Primary Inventor/Author)	Country of Origin	Filing Date	Date of Issue/Publication
WO 2007/065809 A2 to Henning et al. (“Henning”)	WO	November 27, 2006	June 14, 2007
U.S. Pat. No. 7,363,504 B2 to Bonalle et al. (“Bonalle”)	U.S.	July 1, 2004	April 22, 2008
EP 1, 318, 459 B1 to Tanaka et al. (“Tanaka”)	EP	December 9, 2000	November 4, 2012
U.S. Pat. No. 5,229,764 A to Matchett et al. (“Matchett”)	U.S.	June 20, 1991	July 20, 1993
U.S. Pat. App. Pub. No. 2009/0062887 A1 to Mass et al. (“Mass”)	U.S.	May 9, 2008	March 5, 2009
U.S. Pat. No. 6,765,470 to Shinzaki et al. (“Shinzaki I”)	U.S.	February 5, 2001	July 20, 2004
U.S. Pat. No. 7,007,298 to Shinzaki et al. (“Shinzaki II”)	U.S.	January 27, 2000	February 28, 2006
U.S. Pat. No. 8,316,436 to Shirai et al. (“Shirai”)	U.S.	March 27, 2009	November 20, 2012
U.S. Pat. No. 7,715,593 to Adams et al. (“Adams I”)	U.S.	June 15, 2004	May 11, 2010
U.S. Pat. No. 8,424,079 to Adams et al. (“Adams II”)	U.S.	January 25, 2008	April 16, 2013
U.S. Pat. No. 7,793,109 to Ortiz (“Ortiz”)	U.S.	December 17, 2002	September 7, 2010
U.S. Pat. No. 6,931,538 to Sawaguchi et al. (“Sawaguchi”)	U.S.	September 25, 2000	August 16, 2005
U.S. Pat. No. 7,623,970 to Kondo et al. (“Kondo”)	U.S.	April 11, 2002	November 24, 2009

Patent Number or Title (Primary Inventor/Author)	Country of Origin	Filing Date	Date of Issue/Publication
U.S. Pat. No. 7,925,887 to Burton (“Burton”)	U.S.	May 19, 2004	April 12, 2011
U.S. Pat. App. Pub. No. 2010.0201567 A1 to Lydon et al. (“Lydon”)	U.S.	March 17, 2009	August 12, 2010
WO 2008/061138 A2 to Alderucci et al. (“Alderucci”)	WO	November 14, 2007	May 22, 2008
U.S. Pat. App. Pub. No. 2008/0045806 A1 to Keppler (“Keppler”)	U.S.	April 4, 2007	February 21, 2008
U.S. Pat. App. Pub. No. 2005/0240778 A1 to Saito (“Saito”)	U.S.	April 26, 2004	October 27, 2005
U.S. Pat. App. Pub. No. 2007/0265533 A1 to Tran (“Tran”)	U.S.	May 12, 2006	November 15, 2007
U.S. Pat. App. Pub. No. 2006/0136744 A1 to Lange (“Lange”)	U.S.	November 8, 2005	June 22, 2006
JP 2001-109855 A to Mizusawa et al. (“Mizusawa”)	JP	October 13, 1999	April 20, 2001
U.S. Pat. App. No. 2003/0005337 to Poo et al. (“Poo”)	U.S.	July 3, 2001	January 2, 2003
U.S. Pat. App. Pub. No. 2005/0197112 A1 to Yang et al. (“Yang”)	U.S.	March 2, 2005	September 8, 2005
U.S. Pat. No. 6,819,219 to Bolle et al. (“Bolle”)	U.S.	October 13, 2000	November 16, 2004
U.S. Pat. No. 9,098,838 to Ueno et al. (“Ueno”)	U.S.	January 30, 2009	August 4, 2015
U.S. Pat. No. 9,009,816 to Hamid (“Hamid”)	U.S.	January 21, 2010	April 14, 2015

Patent Number or Title (Primary Inventor/Author)	Country of Origin	Filing Date	Date of Issue/Publication
U.S. Pat. App. Pub. No. 2010/0063843 A1 to Kenedy et al. (“Kenedy”)	U.S.	September 10, 2008	March 11, 2010
U.S. Pat. No. 7,602,301 B1 to Stirling et al. (“Stirling”)	U.S.	November 17, 2006	October 13, 2009
U.S. Pat. App. Pub. No. 2006/0080552 A1 to Lauper (“Lauper”)	U.S.	October 7, 2005	April 13, 2006
U.S. Pat. No. 7,255,269 B2 to Debellix et al. (“Debellix”)	U.S.	August 13, 2002	August 14, 2017
U.S. Pat. No. 7,751,285 B1 to Cain (“Cain”)	U.S.	March 28, 2006	July 6, 2010
U.S. Pat. No. 6,539,380 to Moran (“Moran”)	U.S.	April 17, 2000	March 25, 2003
U.S. Pat. App. Pub. No. 2009/0204433 A1 to Darian et al. (“Darian”)	U.S.	February 11, 2008	August 13, 2009
U.S. Pat. App. Pub. No. 2002/0095587 A1 to Doyle et al. (“Doyle”)	U.S.	January 17, 2001	July 18, 2002
U.S. Pat. App. Pub. No. 2008/0249856 A1 to Angell et al. (“Agnell”)	U.S.	May 3, 2007	October 9, 2008
U.S. Pat. No. 6,830,549 to Bui et al. (“Bui”)	U.S.	December 9, 2002	December 14, 2004
U.S. Pat. No. 7,448,996 to Khanuja et al. (“Khanuja”)	U.S.	April 15, 2003	November 11, 2008
U.S. Pat. App. Pub. No. 2008/0109883 A1 to Hemoud et al. (“Hemoud”)	U.S.	April 25, 2007	May 8, 2008
EP 1,914,649 A2 to Le Neel (“Le Neel”)	EP	October 19, 2007	April 23, 2008

Patent Number or Title (Primary Inventor/Author)	Country of Origin	Filing Date	Date of Issue/Publication
U.S. Pat. No. 6,957,337 B1 to Chainer et al. (“Chainer”)	U.S.	August 11, 1999	October 18, 2005
JP 2004-089675 A to Amano et al. (“Amano”)	JP	November 8, 2002	March 25, 2004
JP 2007-220000 A to Iijima (“Iijima”)	JP	February 20, 2006	August 30, 2007
JP 2007-325842 A to Kawashima (“Kawashima”)	JP	June 9, 2006	December 20, 2007
JP 2009-142333 A to Hama et al. (“Hama”)	JP	December 11, 2007	July 2, 2009
JP 2006-302206 A to Wada et al. (“Wada”)	JP	April 25, 2005	November 2, 2006
JP 2005-293209 A to Maki et al. (“Maki”)	JP	March 31, 2004	October 20, 2005
KR 10-2008/0075956 A to Lee (“Lee”)	KR	February 14, 2007	August 20, 2008
JP 2003/510714 A to Moran (“Moran II”)	JP	September 10, 2000	March 18, 2023
KR 10-2008/0002629 A to Yano et al. (“Yano”)	KR	February 23, 2007	January 4, 2008
U.S. Pat. App. Pub. No. 2010/0328033 A1 to Kamei (“Kamei”)	U.S.	January 19, 2009	December 30, 2010
U.S. Pat. App. Pub. No. 2008/0157921 A1 to Hendriks et al. (“Hendriks”)	U.S.	October 20, 2005	July 3, 2008
U.S. Pat. App. Pub. No. 2007/0092115 A1 to Usher et al. (“Usher”)	U.S.	October 26, 2005	April 26, 2007

Patent Number or Title (Primary Inventor/Author)	Country of Origin	Filing Date	Date of Issue/Publication
U.S. Pat. App. Pub. No. 2008/0273768 A1 to Dennis et al. (“Dennis”)	U.S.	May 2, 2008	November 6, 2008
U.S. Pat. App. Pub. No. 2009/0008459 A1 to Mainguet (“Mainguet”)	U.S.	January 16, 2004	January 8, 2009
U.S. Patent No. 7,505,613 to Russo (“Russo”)	U.S.	July 10, 2006	March 17, 2009
U.S. Pat. App. Pub. No. 2008/0037001 A1 to Yokoyama et al. (“Yokoyama”)	U.S.	January 29, 2007	February 14, 2008
U.S. Pat. App. Pub. No. 2010/0141380 A1 to Pishva (“Pishva”)	U.S.	March 8, 2007	June 10, 2010
JP 2006/215787 A to Ohashi (“Ohashi”)	JP	February 3, 2005	August 17, 2006
U.S. Pat. No. 8,386,677 to Lydon (“Lydon II”)	U.S.	March 17, 2009	February 26, 2013
U.S. Pat. No. 9,026,462 to Lin et al. (“Lin”)	U.S.	September 30, 2008	May 5, 2015
U.S. Pat. App. Pub. No. 2016/0210491 A9 to Rosenblatt et al. (“Rosenblatt”)	U.S.	September 30, 2008	July 21, 2016
WO 1995/026013 A1 to Osten et al. (“Osten II”)	WO	March 15, 1995	September 28, 1995
WO 2010/039334 A2 to Rosenblatt et al. (“Rosenblatt II”)	WO	August 7, 2009	April 8, 2010
U.S. Patent Application Publ. No. 2010/0014720 A1 to Hoyos (“Hoyos”)	U.S.	October 2, 2007	January 21, 2010

Table 2: Non-Patent Publications

Title	Date of Publication	Author(s)	Publisher
“Wearable Authentication Device for Transparent Login in Nomadic Applications Environment” (“Ojala”)	2008	Sampo Ojala, Jari Keinänen, and Jorma Skyttä	Institute of Electrical and Electronics Engineers
Liveness Detection in Fingerprint Recognition Systems (“Sandström”)	June 10, 2004	Marie Sanström	Linköpings University
Spoofing And Anti-Spoofing Measures Information Security Technical Report, Vol. 7, No. 4 (“Schuckers”)	2002	Stephanie A. C. Schuckers, Ph.D.	Elsevier Science Ltd.
Security Engineering, A Guide to Building Dependable Distributed Systems, Second Edition (“Anderson”)	2008	Ross J. Anderson	Wiley Publishing, Inc.
How to Transfer Data between a cell phone and Computer XP055260933 (“Milindo”)	October 2, 2009	Milindo	wikiHow
How to Send Files to a Cell/Mobile Phone Using Bluetooth Technology XP055260935 (“Claro”)	January 11, 2010	Claro	wikiHow
BioTRAC	September 10, 2010	Endeavor Business Media, LLC – Officer.com	Endeavor Business Media, LLC – Officer.com
Dap Technologies CE3000B Series User Guide	September 2007	JPW Associates	JPW Associates

Title	Date of Publication	Author(s)	Publisher
Fusion	October 21, 2008	Endeavor Business Media, LLC – Officer.com	Endeavor Business Media, LLC – Officer.com
Cogent Fusion Multimodal Biometric Handheld Device	September 8, 2009	Messe Frankfurt (HK) Limited	Messe Frankfurt (HK) Limited
Cogent Systems Announces Release Of Fusion™ Multi-Modal Biometric Handheld Device	September 23, 2008	Business Wire - Field Technologies Online	Business Wire - Field Technologies Online
Instruction of Fusion	July 2008	Cogent Systems	Cogent Systems
DSVII-SC User's Manual	April 26, 2006	Datastrip, Inc.	Datastrip, Inc.
Experiments with Skin Resistance and Temperature for Liveness Detection	August 22, 2008	Martin Drahansky	Institute of Electrical and Electronics Engineers (IEEE)
Products & Services for the GSA Smartcard Common Access ID RFP	February 2000	Sagem Morpho Inc.	Sagem Morpho Inc.
HIIDE™ Series 4 (Handheld Interagency Identity Detection Equipment Software Version 4.0.2) User Guide	2008	L-1 Identity Solutions Inc., Biometrics Division	L-1 Identity Solutions Inc.

Title	Date of Publication	Author(s)	Publisher
First International Fingerprint Liveness Detection Competition—LivDet 2009	2009	Gian Luca Marcialis, Aaron Lewicke, Bozhao Tan, Pietro Coli, Dominic Grimberg, Alberto Congiu, Alessandra Tidu, Fabio Roli, and Stephanie Schuckers	Springer-Verlag Berlin Heidelberg
MaxVision BPAC® Data Sheet	November 2010	MaxVision LLC	MaxVision LLC
MorphoIDent Website	March 2015	ID Networks, Inc.	ID Networks, Inc.
MorphoIDent Data Sheet	March 2015	Safran Morpho	Safran Morpho
MorphoManager User Manual	July 2005	Safran Morpho	Safran Morpho
MorphoRapID Quick User's Guide	August 2009	Sagem Sécurité	Sagem Sécurité
MorphoTouch Value Added Reseller Software Development Kit Training Course	July 20, 1999	Sagem S.A.	Sagem S.A.
Real-time Identification System using Mobile Hand-held Devices: Mobile Biometrics Evaluation Framework	April 2014	Raj Nanavati	International Biometric Group

Title	Date of Publication	Author(s)	Publisher
The “SECUREPHONE” - A Mobile Phone with Biometric Authentication and e-Signature Support for Dealing Secure Transactions on the Fly.	May 2006	Roberto Ricci, Gerard Chollet, M.V. Crispino, Sabah Jassim	Proceedings of SPIE - The International Society for Optical Engineering
Rugged PC Review.com - Handhelds and PDAs: DAP Technologies CE3000B	September 2007	Conrad H. Blickenstorfer	ruggedpcreview.com
Sagem Morpho launches new mobile biometric ID device	August 14, 2008	Endeavor Business Media, LLC – Securityinfowatch.com	Endeavor Business Media, LLC – Securityinfowatch.com
Verifier® Mw Data Sheet	December 31, 2007	Cross Match Technologies, Inc.	Cross Match Technologies, Inc.
Aliveness Detection for Iris Biometrics (“Pacut”)	2006	Andrzej Pacut and Adam Czajka	IEEE

Defendants further incorporate by reference all “U.S. Patent Documents,” “Foreign Patent Documents,” and “Other Publications” cited on the face of the ’875 Patent. Any citation to one or more of the above prior art references, or other prior art references regarding any method or system, should be construed to constitute not only a citation to the prior art reference itself, but also a reference to the system itself. Discovery has only just begun in this case, and Defendants will supplement if and when more information becomes available from Plaintiff or third parties.

B. Prior Art Disclosures—Public Use/Sales/Offers for Sale/Available to the Public

Defendants believe that there were prior art disclosures in the form of sales, offers for sale, and/or uses by others of products that qualify as prior art under AIA 35 U.S.C. § 102(a)(1) against one or more of the Asserted Claims of the '875 Patent. The below-identified prior art products include products Defendants are currently aware of through an on-going diligent and reasonable investigation at this early stage of discovery and/or based on public available information. Details regarding such offers for sale and public uses may be within the possession of third parties. As discovery progresses, Defendants intend and reserve the right to promptly supplement and/or amend the lists below to include additional prior art products that anticipate and/or render the Asserted Claims obvious.

Table 3: Prior Art Systems and Inventions

Name of System or Invention	Date of Sale/Offer for Sale/Public Use/Known by Others
Cogent Systems' Fusion Multi-Modal Biometric Handheld Device	October 21, 2008
Amrel's DA5-B Advanced handheld biometric solution on a rugged PDA platform	May 1, 2009
Sagem Morpho's Morpho RapID 1100	August 14, 2008
Sagem Morpho's MorphoTouch	December 31, 1999
Sagem Morpho's MSO301/351	July 1, 2005
DataStrip's DSVII-PA, DSVII-SC and DSVII-SW	February 23, 2005
BioDentity's Electronic Visitor Identity Management (EVIM)	September 1, 2007
Crossmatch Technologies's Verifier Mw Handheld Fingerprint Scanner 900383-002	December 31, 2007
DAP Technologies' 3000B Rugged Handheld with Biometric End-Cap	September 1, 2007
Green Bit's MiScan (WLFI)	February 1, 2010

Name of System or Invention	Date of Sale/Offer for Sale/Public Use/Known by Others
MaxVision's BPac	2009
Black Diamond Advanced Technology's BioTRAC	September 10, 2010
L-1 Identity Solutions, Biometrics Division's Handheld Interagency Identity Detection Equipment (HIIDE) Series 4 ("HIIDE")	June 2008

For each of the prior art devices identified above, Defendants have listed and produced documents as evidence of the relevant features and functionality to the extent that they are presently available and have been located. Defendants have obtained or are in the process of attempting to obtain the identified devices and have made or will make them available for inspection to the extent they are obtained. To the extent that one or more documents (e.g., user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under pre-AIA 35 U.S.C. § 102 and may be used as invalidating references under pre-AIA 35 U.S.C. §§ 102 and/or 103. Further, Defendants are actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 3.

Discovery is ongoing, and Defendants may serve third parties with document subpoenas, and Defendants reserve the right to rely on documents produced by them. One or more of these devices, along with related documentation, may be invalidating, and Defendants reserve the right to supplement these contentions accordingly. Defendants continue to investigate any identified devices, including through potential discovery needed to be obtained via third party subpoenas, and reserve the right to supplement these contentions and accompanying claim charts after further investigation.

Upon information and belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the '875 Patent. Defendants' investigation of such prior art systems is still ongoing and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the third-party prior art systems anticipate or render obvious the '875 Patent. As such, Defendants reserve all rights to supplement their invalidity contentions.

Each prior art patent, publication, or product identified above was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the '875 Patent, or was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

Because Defendants have not yet completed discovery in this case, including taking depositions of the named inventors, and otherwise obtaining discovery from Plaintiff and third parties, Defendants reserve the right to supplement these contentions with facts, documents, or other information learned at a later point through discovery or further investigation.

IV. P.R. 3-3(B) – INVALIDITY GROUNDS

Pursuant to P.R. 3-3(b), Defendants contend that certain prior art references below anticipate one or more Asserted Claims and that to the extent the identified prior art references do not anticipate the Asserted Claims, those claims are invalid as obvious under 35 U.S.C. §103. Each anticipatory prior art reference, either alone or in combination with other prior art, also renders the Asserted Claims invalid as obvious. In particular, each anticipatory prior art reference may be

combined with (1) information generally known to persons skilled in the art at the time(s) of the alleged invention, and/or (2) any of the other identified prior art references. To the extent that Plaintiff contends that any of the anticipatory prior art fails to disclose one or more limitations of the Asserted Claims, Defendants contend that any difference between the reference and the corresponding patent claims would have been obvious to one of ordinary skill in the art. Thus, all anticipation charts should be interpreted as both reflecting anticipation by the reference as well as invalidity due to single reference obviousness, to the extent that Plaintiff contends that any limitation is missing.

A. Anticipation

As stated above, Defendants incorporate by reference all other invalidity contentions related to the '875 Patent served on or otherwise provided to Plaintiff, whether past or future. In accordance with P.R. 3-3(a), prior art references anticipating the Asserted Claims are provided below. The prior art listed below anticipates the Asserted Claims under the proper construction of the claims and/or under Plaintiff's apparent interpretation of the claims reflected by Plaintiff's Complaint and Infringement Contentions.

The Asserted Claims of the '875 Patent are anticipated and/or rendered obvious by prior art. Pursuant to P.R. 3-3(a), Defendants identify the prior art references that anticipate or render obvious the '875 Patent Asserted Claims in the claim charts in Appendices A-1–A-10, which are hereby incorporated by reference as if fully set forth herein. The claim charts of Appendices A-1–A-10 show how these prior art references teach or suggest each and every element of the Asserted Claims of the '875 Patent. For each reference or combination of references suggested by each chart and/or herein, Defendants indicate whether the prior art renders the claim anticipated and/or obvious pursuant to P.R. 3-3(b).

In addition to contending that the Asserted Claims of the '875 Patent are invalid in view of the prior art references cited in the claim charts of Appendices A-1–A-10, Defendants further contend that the Asserted Claims of the '875 Patent are invalid as anticipated and/or obvious under U.S.C. §§ 102 and/or 103 in view of public knowledge and uses and/or offers for sale of products and services related to the subject matter of the cited references. As discovery is ongoing, Defendants continue to investigate these items and to reserve the right to amend or supplement these contentions to include additional information or documents regarding such products and/or systems. In addition to contending that the Asserted Claims of the '875 Patent are invalid in view of the explicit disclosures of the prior art references cited in the claim charts of Appendices A-1–A-10, Defendants further contend that the knowledge of skill evidenced by those references render those claims invalid. Defendants further contend that, even if a prior art reference does not expressly disclose all limitations as arranged or combined in the same manner as an asserted claim, a skilled artisan reading the reference would have at once envisage the claimed arrangement or combination. *See, e.g., Kennametal Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376 (Fed. Cir. 2015).

Defendants' reference to a particular device or product in the claim charts of Appendices A-1–A-10 should be interpreted alternatively as both as a reference to the product itself and to any corresponding patents, publications, or product literature cited in Appendices A-1–A-10 that relates to the cited device or product. In addition, Defendants may rely on other documents or things that have not yet been located to support its contentions regarding such prior art device(s) or product(s) that are referenced in the charts.

Defendants incorporate by reference, as if set forth fully herein, all prior art cited during the prosecution of the '875 Patent, all prior art cited during any reexamination proceedings of the

'875 Patent, all prior art as described in any pending or future *inter partes* review proceedings of the '875 Patent, and all prior art disclosed during any previous litigation proceedings or proceedings involving the '875 Patent or any related patents.

Defendants further identify and hereby incorporate by reference as if set forth fully herein the prior art references and invalidity contentions as described in any Other Proceedings wherein invalidity contentions have been, or will be, provided regarding the '875 Patent, its foreign counterparts, or any parent or child patent of the '875 Patent. Defendants reserve the right to use any and all portions of the publication, related publications, commercial embodiments of the publication, and other evidence that is discovered in these lawsuits to demonstrate and/or evidence the components, functionality, and capabilities of the devices and systems disclosed in the references charted.

Where Defendants identify a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure, as well as any text relating to the figure in addition to the figure itself. Similarly, where an identified portion of text refers to a figure, embodiment, or other material, the identification should be understood to include the referenced figure, embodiment, or other material as well. Consistent with P.R. 3-3(c), Defendants' citations to specific statements, figures, or disclosures in a prior art reference are sufficient to put Plaintiff on notice where each element of each Asserted Claim is found in the prior art. However, it should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To understand and interpret any specific statement or disclosure in a prior art reference, a person of ordinary skill in the art would have relied upon other information including other publications and general scientific or engineering knowledge. Defendants

therefore reserve the right to rely upon other unidentified portions of the prior art references and on other publications and expert testimony to provide context and to aid understanding and interpretation of the identified portions.

Defendants also reserve the right to rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including the basis of modifying or combining certain cited references. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time(s) of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. To the extent that an element of an Asserted Claim is not anticipated, the claim is rendered obvious by combination with one or more other prior art references identified in Appendices A-1–A-10.

B. Obviousness

As stated above, Defendants incorporate by reference all other invalidity contentions related to the '875 Patent served on or otherwise provided to Plaintiff, whether past or in the future. In addition to certain claims being anticipated at least under Plaintiff's apparent claim constructions as indicated above, the Asserted Claims are also invalid as obvious over the same teachings identified for anticipation. Further, the Asserted Claims are obvious over various combinations of the references shown in the claim charts accompanying or incorporated by reference into this disclosure. No Asserted Claim goes beyond combining known elements to achieve predictable results or does more than choose between clear alternatives known to those of skill in the art. Thus, to the extent that an Asserted Claim is not anticipated, it is nevertheless invalid as obvious. Specifically, Defendants assert that any charted or incorporated reference in

combination with one or more other charted or incorporated references renders the Asserted Claims obvious.

In *KSR International Co. v. Teleflex, Inc.*, the United States Supreme Court held that, among other things, “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” 550 U.S. 398, 416 (2007); *see also id.* at 417 (“[A] court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.”). In particular, a patent is obvious where “the content of the prior art, the scope of the patent claim, and the level of ordinary skill are not in material dispute, and the obviousness of the claim is apparent in light of these factors.” *Id.* at 427. The Supreme Court found that “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *Id.* at 417.

Moreover, the Supreme Court recognizes that market pressures will motivate a person of ordinary skill to survey known art for solutions to problems. *Id.* at 421 (“When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp.”). When a person of ordinary skill uses an identified, predictable solution to solve a problem, “it is likely the product not of innovation but of ordinary skill and common sense.” *Id.* In addition, when a work is available in one field of endeavor, design incentives, and other market forces can prompt variations of it, either in the same field or a different one. *Id.* at 417. If a person of ordinary skill can implement a predictable variation, U.S.C. § 103 bars its patentability. *Id.*

“‘[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.’” *Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1379 (Fed. Cir. 2023) (quoting *KSR*, 550 U.S. at 420). “Additionally, ‘universal’ motivations known in a particular field to improve technology provide ‘a motivation to combine prior art references even absent any hint of suggestion in the references themselves.’” *Id.* (quoting *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 797–99 (Fed. Cir. 2021)) (original emphasis). Thus, motivations to combine, as well as the general state of the art, may be found in a variety of places including, but not limited to, in the references defined above, and the specification of the ’875 Patent. A person of ordinary skill in the art at the time(s) of the alleged invention would have been motivated to combine any one piece of identified prior art with any other identified piece of prior art. For at least this reason, it would have been obvious to a person of skill in the art at the time(s) of the alleged invention of the Asserted Claims to combine the various references cited herein so as to practice the Asserted Claims and there is a motivation in the art to make such a combination. Further reasons to combine the references identified in these charts include the nature of the problem being solved, the express, implied, and/or inherent teachings of the prior art, the knowledge of persons of ordinary skill in the art, the fact that the prior art is generally directed towards similar methods and systems, that such combinations would have yielded predictable results, and that such combinations would have represented known alternatives to a person of ordinary skill in the art.

The law does not require evidence of a specific motivation to combine prior art where the combination would yield expected results and at most simply represents a known alternative or design choice to one of skill in the art. *See Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1058 (Fed. Cir. 2016); *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1344

(Fed. Cir. 2017); *KSR*, 550 U.S. at 415 (rejecting the Federal Circuit’s “rigid” application of the teaching, suggestion, or motivation to combine test, and instead applying an “expansive and flexible” approach). Indeed, the Supreme Court held that a POSITA is “a person of ordinary creativity, not an automaton” and “in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *KSR*, 550 U.S. at 420–21.

Nevertheless, in addition to the information contained immediately above and elsewhere in these contentions, Defendants identify additional motivations and reasons to combine. For example, in addition to the specific motivations identified herein, motivation to modify a particular reference or to combine any two or more of the identified references comes from (a) the nature of the problem being solved, (b) the teachings of the prior art, (c) the knowledge of persons of ordinary skill in the art, (d) the fact that all the references teach systems, apparatuses, and methods related to the subject matter and address the same technical issues described in the ’875 Patent, and (e) one would have been motivated by considerations of efficiency, effectiveness, convenience, cost-savings, and accessibility, to combine the various teachings of the references. Additionally, one would have been motivated to address the alleged problems or achieve the purported objectives identified in the Background sections of the ’875 Patent, of the references cited on the face of the ’875 Patent, and of the other references cited herein.

In sum, motivations to modify or combine the identified references including the references listed above can be found via, for example, discussions in the cited references, the state of the art discussed in the references, and the knowledge of one of ordinary skill in the art. One of ordinary skill in the art would have been motivated to combine these references, because these references relate to common objectives and subject matter. The references share commonalities in terms of their general subject matter as well as the types of equipment, products, systems, and/or methods

used. Further, certain prior art references explicitly or implicitly reference other prior art references, share common authors or inventors, were published in the same journals, were compiled by a common author of a compilation or reference book, were presented at the same conferences, and/or were developed at common companies, schools, or organizations, which would motivate one of ordinary skill in the art to combine them. These references are within the field of the '875 Patent and are directed to similar subject matter within the field. Additionally, the references, and any products, devices, or processes described in the references, existed and/or were invented in the same time period providing further motivation for combination. These disclosures were provided without prejudice to any arguments or objections concerning the relevance of motivation to combine in connection with any invalidity contentions.

Defendants reserve the right to further specify the motivations to combine the prior art in response to positions that Plaintiff may take later in this case and as discovery, including third party discovery, proceeds. Defendants may rely on any and all portions of the prior art, other documents, and expert testimony to establish that a person of ordinary skill in the art would have been motivated to modify or combine the prior art so as to render the claims invalid as obvious.

Moreover, Defendants reserve the right to rely on later identified sources of information, including, but not limited to, witness testimony and other discovery, to establish the state of the art in the relevant time frame pertaining to the '875 Patent.

Additionally, Defendants note that Plaintiff has neither provided any contention that secondary considerations of non-obviousness exist for any '875 Patent nor provided any evidence of such secondary considerations. Defendants are not aware of any evidence supporting the existence of any such secondary considerations. This lack of evidence further renders the Asserted Claims obvious. Proving any such secondary considerations is Plaintiff's burden. *See, e.g., ZUP,*

LLC v. Nach Mfg., Inc., 896 F.3d 1365, 1373 (Fed. Cir. 2018) (“[A] patentee bears the burden of production with respect to evidence of secondary considerations of nonobviousness.”). To the extent Plaintiff is permitted to introduce contentions and/or evidence concerning secondary considerations in the future, Defendants reserve all rights to rebut those contentions if and when Plaintiff identifies them. At present, Defendants note the complete lack of any such evidence in the record. Moreover, Defendants further contend that, in any event, the evidence of obviousness for each asserted claim is so overwhelming that secondary considerations are necessarily insufficient to rebut Defendants’ showing. *See, e.g., Ohio Willow Wood Co. v. Alps S., LLC*, 735 F.3d 1333, 1344 (Fed. Cir. 2013) (“[W]here a claimed invention represents no more than the predictable use of prior art elements according to established functions, as here, evidence of secondary indicia are frequently deemed inadequate to establish non-obviousness.”).

Pursuant to P.R. 3-3(a) and (b), Defendants identify in Appendices A-1–A-10 the prior art references that render obvious the Asserted Claims of the ’875 Patent in view of the prior art. To the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in these Appendices, the limitation would have been obvious in light of the disclosures within the reference and the knowledge of one of ordinary skill in the art at the time of the ’875 Patent. Moreover, to the extent Plaintiff contends that a limitation is not disclosed in any one of the anticipatory references described in Appendices A-1–A-10, such reference may be combined with any other references listed in Appendices A-1–A-10 and/or any other references listed in this Section IV.B for such limitation, thereby rendering the claims invalid for obviousness. To the extent a finder of fact determines that a limitation of any of the ’875 Patent Asserted Claims is not disclosed by one of the references identified above pursuant to P.R. 3-3(a), the claim is nevertheless unpatentable as obvious because they contain nothing that constitutes a patentable

innovation. To the extent a finder of fact determines that a limitation of the '875 Patent Asserted Claims is not anticipated, it does not go beyond combining familiar elements according to known methods to achieve predictable results or does more than choose between clear alternatives known to those of ordinary skill in the art. The inventions claimed by the '875 Patent are no more than the aggregation of known elements combined in a predictable, conventional way to provide a higher level of secure access to data.

The prior art references identified herein explicitly or implicitly refer to other prior art references, share common authors or inventors, were published in the same journals, presented at the same conferences, were presented as proposals to standards working groups, and/or were developed at common companies, schools, or organizations, all of which would motivate one of skill in the art to combine them. These references are also within the field of the '875 Patent and are directed to similar subject matter within that field. Additionally, any products, devices, and/or processes described in the references existed and/or were invented before or during the period in which the claimed inventions were developed, providing further motivation to combine them.

1. Obviousness Rationale and Motivations to Combine

Obviousness: For at least the reasons described in these contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those prior art references identified in Section IV.B.2, *infra* along with the knowledge of one of ordinary skill in the art to meet the limitations of the Asserted Claims of the '875 Patent. As a result, the prior art references identified herein render one or more Asserted Claims of the '875 Patent obvious when the references are read in combination with each other, and/or when read in view of the state of the art and knowledge of those skilled in the art. Each and every prior art reference identified is also relevant to the state of the art at the time of the alleged invention. Any of the references disclosed above may be combined with one another to

render obvious (and therefore invalid) each of Plaintiff's Asserted Claims. Defendants may rely upon a subset of the identified references or all of the references identified herein, including all references in Appendices A-1–A-10 and Section IV.B.2, for purposes of obviousness depending on the Court's claim construction, positions taken by Plaintiff during this litigation, and further investigation and discovery.

Reservation of Rights: Moreover, as mentioned above, Defendants have not yet completed their search or discovery concerning additional prior art. As such, Defendants' inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Defendants reserve the right to identify additional specific combinations as well as to detail and explain such combinations.

No More Than Ordinary Variations of Prior Art; No Unexpected Results: To the extent not anticipated, the Asserted Claims of the '875 Patent represent no more than the result of ordinary variations of the prior art. Defendants further believe that no showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the appended charts, as each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR*, 550 U.S. at 415–16 (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach); *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1058 (Fed. Cir. 2016); *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1344 (Fed. Cir. 2017). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle." *KSR*, 550 U.S. at 420–21. Nevertheless, in addition to the information

contained elsewhere in these contentions, Defendants identify motivations and reasons to combine the cited art.

Predictable Results; Obvious to Try: One or more combinations of the prior art references identified in Section IV.B.2, *infra* would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. This is confirmed by the '875 Patent, which describes various embodiments comprising techniques for, *e.g.*, access control to secured personal data using integrated biometric sensors and life signs detectors that are well known and well understood by those in the field and comprise nothing but simple substitutions of each other. *See, e.g.*, '875 Patent, 1:14–6:28. In addition, it would have been obvious to try combining the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one.

For example, there are three known, predictable methods for authenticating a user authorized to access secured personal data: (1) knowledge-based authentication (*i.e.*, something you know, such as a password), (2) token-based authentication (*i.e.*, something you have, such as a security badge or key FOB), and (3) biometric-based authentication (*i.e.*, something you are, such as unique fingerprints or facial features). *See, e.g.*, Ross Anderson, SECURITY ENG'G 31 (3d Ed. 2008) (“Anderson”). Further, there were a finite number of known biometric authentication methods, including scanning/sensing of fingerprints, facial features, eye features, handwriting, and voice recognition, all of which yielded predictable results. *See, e.g., id.* at 457–82. A person of

ordinary skill in the art would have found it obvious to try combining known biometric authentication methods to yield predictable results. *See, e.g.*, Fadell at ¶¶ [0028], [0041], [0052], [0073], [0091]–[0095]; Venkatanna at ¶¶ [0039]–[0041], [0049], [0068], [0098]; *id.* at Fig. 1; Pratt at [0036]–[0037]; *id.* at Fig. 2. As another example, there were known methods to detect life signs during measurement of a biometric parameter, including measuring temperature, O₂ saturation level, heart rate, and blood flow, that yielded predictable results. *See, e.g.*, Fadell at ¶ [0057]; Venkatanna at ¶ [0041]; Kohinata at 3:24-67, 4:1-8, 4:31-5:10, 6:30-62, 8:34-39, 8:55-67, 10:51-11:10; *id.* at Fig. 1; Osten at 6:55-65, 8:46-56, 9:23-30, 10:31-49, Fig. 1; Ojala at 1, 3-5, Figs. 5-7; Yokoyama at ¶¶ [0008], [0009]–[0013], [0009]–[0013], [0015], [0020]–[0022], [0028], Figs. 1, 5-7, 13. A person of skill in the art would have found it obvious to try combining known biometric authentication methods with known life signs detection methods to yield predictable results. *See, e.g., id.* As another example, Global Positioning System (GPS) receivers were known solutions to providing real-time location information. Indeed, the '875 Patent concedes that “GPS is becoming a very common module in most smart phones.” '875 Patent at 16:58-59. A person of skill in the art would have found it obvious to integrate a GPS receiver in a mobile electronic device to provide real-time location information. *See, e.g.*, Mass at ¶¶ [0188], [0257], [0303]; Shirai at 3:4-10; Sawaguchi at 5:41-54; Lydon at ¶ [0033]. A person of skill in the art would have also understood that real-time location information as an example of secured personal data for which, as described above, there were known methods to prevent unauthorized access.

Further, the combinations of the prior art references identified herein would have been obvious because the combinations represent known potential options with a reasonable expectation of success.

Interrelated Teachings: Additional evidence that there would have been a motivation to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; common authorship; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution encompassed by the Asserted Claims of the '875 Patent; the existence of a known need or problem in the field of endeavor at the time of the alleged invention(s); and the background knowledge that would have been possessed by a person having ordinary skill in the art.

For example, the prior art describes the existence of a known problem of biometric authentication having an insufficiently high rate of improperly rejecting an authorized user, which is known as a “False Rejection Rate” or FRR, as well as having an insufficiently high rate of improperly accepting authentication of an unauthorized user, which is known as a “False Acceptance Rate” or FAR. *See, e.g.,* Anderson at 481; Venkatanna at ¶¶ [0006], [0039], [0045]–[0049], [0058]–[0061], [0069]. The prior art further describes a known, obvious solution of implementing more than one biometric authentication method to reduce the FRR and FAR rates. *See, e.g.,* Venkatanna at ¶¶ [0006], [0039], [0045]–[0049], [0058]–[0061], [0069]. The prior art further describes a known, obvious solution of implementing more than one biometric authentication method to provide tiered access control to data with varying levels of security to users with varying levels of access authorization. *See, e.g.,* Fadell at ¶ [0041]. As another example, the prior art describes the existence of a known problem of unauthorized users (*e.g.,* hackers) using non-living replications of unique biometric parameters (*e.g.,* fingerprint molds) to improperly gain access to secured personal data. *See, e.g., id.* at ¶ [0056], Venkatanna at ¶ [0075]. The prior art further describes known, obvious solutions to this problem of implementing life signs detection into biometric authentication methods, such as detection of eye biometrics (*e.g.,* iris and

retinal scans), temperature, heart rate, and blood flow. *See, e.g.*, Fadell at ¶ [0056]; Kohinata at 3:24-67, 4:1-8, 4:31-5:10, 6:30-62, 8:34-39, 8:55-67, 10:51-11:10; U.S. Pat. App. Pub. No. 2008/0045806 (“Keppler”) at ¶¶ [0027]-[0029]; U.S. Pat. App. Pub. No. 2007/0092115 (“Usher”) at ¶¶ [0006]-[0008]; Sawaguchi at 2:51-57; Venkatanna at ¶¶ [0005]-[0006], [0041], [0046]-[0047]; Matchett at 1:60-2:3. As another example, the prior art describes the existence of a known problem of biometric authentication being unable to determine whether it is the authorized user that continues to access the secured personal data after initial authentication. *See, e.g.*, Matchett at Abstract, 1:6-11, 2:41-57. The prior art further describes the known, obvious solution of implementing continuous life signs detection methods to ensure the authorized user continues to access the secured personal data. *See, e.g., id.*

As another example, the prior art describes known methods for providing wireless communication functionality in handheld electronic devices that implement widely used wireless communications protocols, such as Wi-Fi, Ethernet, Bluetooth™, radio frequency (RF) systems such as RF identification (RFID), cellular networks, infrared, TCP/IP, HTTP, and Voice over IP (VOIP). *See, e.g.*, Fadell at ¶ [0033]; Henning at 5:9-13, 19:8-13; Rosenblatt at ¶¶ [0007], [0041]. A person of skill in the art would have understood that one or more of these widely used wireless communications protocols could have been used to communicate with external devices using a shared communications protocol, such as RF operated credit card readers, ATM machines, and remotely operated electronic locks gates and doors opener using RFID based techniques. *See, e.g.*, Fadell at ¶ [0033]; Henning at 5:16-19, 6:1-5, 19:15-28, 16:36-17:4; Rosenblatt at ¶¶ [0007], [0041]. As another example, the prior art describes integrated encoder/decoders, known as “codecs,” as a known solution to facilitate internal and external data communications. *See, e.g.*, Fadell at ¶ [0034]. Providing the ability to wirelessly communicate with multiple external devices

from a single electronic device would have achieved the prior art's shared goals of increasing user friendliness and reducing complexity.

Same Area of Technology: Additionally, it would have been obvious to one of ordinary skill in the art to consult and/or combine any of the prior art listed in Appendices A-1–A-10 and Section IV.B.2, *infra* because all these prior art references relate to the same area of technology and/or are from analogous art. The Asserted Claims of the '875 Patent are generally directed to apparatuses, systems, and methods for biometric and other authentication to secure and manage personal data stored on electronic devices. *See* '875 Patent at Abstract. The Asserted Claims of the '875 Patent merely unite old elements, well known in the field, with no change in their respective function or result. Given the interrelated teachings of the prior art, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art, it would have been obvious for one of ordinary skill in the art to combine these familiar elements, disclosed and/or embodied in the prior art listed above to practice the Asserted Claims of the '875 Patent. For example, authentication systems with multiple biometric sensors, life signs detectors, processors, storage and memory, wireless communication modules facilitating widely used communications protocols, digital encoders and decoders, and GPS receivers were all well-known elements familiar to those of ordinary skill in the art. *See generally, e.g.,* Fadell; Beenau; Pratt; Venkatanna; Narayanaswami; Osten; Kohinata; Henning; Saito; Rosenblatt; Lydon.

Same Technical Issues: A person of ordinary skill would have been motivated to combine the above prior art based on his or her knowledge, the nature of the problem to be solved, and the teachings of the prior art. As described above, the identified prior art addresses the same or similar technical issues and suggests the same or similar solutions to those issues. Moreover, some of the

prior art refers to or discusses other prior art, illustrating the close technical relationship among the prior art. For the '875 Patent, one of ordinary skill in the art would have been motivated to combine known prior art solutions described in these references relating to biometric authentication systems for securing personal data stored on electronic devices.

There are significant similarities in subject matter and objectives for each of many references used in these contentions for the '875 Patent, as shown in Appendices A-1–A-10 and Section IV.B.2, *infra*. Indeed, the claims of the '875 Patent are directed to nothing more than combining known biometric authentication methods with known life signs detection methods. This amounts to little more than the well-understood concept that implementing life signs detection in a biometric authentication system prevents unauthorized access through non-living “spoofs” of unique biometric parameters. *See, e.g.*, Fadell at ¶ [0056]; Venkatanna at ¶ [0075]; Kohinata at 3:24-67, 4:1-8, 4:31-5:10, 6:30-62, 8:34-39, 8:55-67, 10:51-11:10. Moreover, to the extent that any of these references includes a feature not expressly disclosed in one or more other references, a POSITA would have naturally looked to, and been motivated to combine, any one of these references with one or more of the other references in order to better achieve their common goals of increasing security of secured personal data on electronic devices and preventing unauthorized access through non-living “spoofs” of unique biometric parameters. Further, a POSITA also would have naturally looked to and been motivated to combine any one of these references with one or more of the other references in order to better achieve their common goals of user friendliness.

Demand and Market Forces: For example, market forces suggested a demand for increased security of personal data stored on electronic devices, preventing unauthorized access to secured personal data using non-living “spoofs” of unique biometric parameters, and a higher

confidence level for ensuring biometric authentication methods accepted authorized users and rejected unauthorized users, and thus one of skill in the art would have thought to combine or modify references that described known methods that one of skill in the art would have recognized as offering improvements to solutions of that time. *See, e.g.*, Fadell at ¶ [0056]; Venkatanna at ¶ [0075]; Kohinata at 3:24-67, 4:1-8, 4:31-5:10, 6:30-62, 8:34-39, 8:55-67, 10:51-11:10. As another example, market forces also suggested a demand for authentications systems integrated in handheld electronic devices because of increased use of handheld electronic devices, such as smart phones, containing increasing amounts of secured personal data. *See generally, e.g.*, Fadell; Pratt; Kohinata; Rosenblatt; Lydon. As another example, market forces also suggested a demand for real-time location information because of increased use of handheld electronic devices, such as smart phones. *See, e.g.*, Rosenblatt at ¶¶ [0055], [0070]-[0072]; Lydon at ¶ [0033]. As another example, market forces also suggested a demand for wireless communication with multiple external devices because of increased use of handheld electronic devices, such as smart phones.

In addition to the specific examples provided above, Defendants reserve the right to rely on the disclosures of the references identified in Appendices A-1–A-10 and Section IV.B.2, *infra* for additional motivations to combine. These examples of combinations are given merely to illustrate various motivations to combine and are not intended to provide an exhaustive list of every possible combination to which the motivation may apply. Defendants reserve the right to contend that the motivations to combine provided herein apply to other combinations at the appropriate time, e.g., in expert reports regarding invalidity. To the extent one or more of identified combinations is posed as a combination of only two references, it does not indicate that the two references that are being combined for one purpose could not be joined by a third reference (or more additional references) whose combination serves the same or a different purpose. Indeed,

many of the features recited in the Asserted Claims are componentized features/functions whereby the feature could be implemented using teachings from another source while not interfering with additional features. For that reason, a POSITA may have reasonably looked to and been motivated to combine three or more references in order to achieve a specific outcome.

Summary of Motivations to Combine: Thus, the motivation to combine the teachings of the prior art references identified in Appendices A-1–A-10 is found in the references themselves and also in: (1) the nature of the problem being solved; (2) the express, implied and inherent teachings of the prior art; (3) the knowledge of persons of ordinary skill in the art; (4) the predictable results obtained in combining the different elements of the prior art; (5) the predictable results obtained in simple substitution of one known element for another; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

2. Combinations

For at least the reasons described above, it would have been obvious to one of ordinary skill in the art to combine each prior art reference identified in Appendices A-1–A-10 with any other reference or references identified in Appendices A-1–A-10 and Section IV.B.2 along with the knowledge of one of ordinary skill in the art to arrive at the inventions claimed in the '875 Patent.

While Defendants reserve the right to rely on any combination of the references reflected in their charts or incorporated herein by reference, Defendants provide the following exemplary and non-exhaustive references and/or combinations evidencing invalidity of the claims of the '875

Patent. The combinations of prior art listed below render obvious the Asserted Claims under the proper construction of the claims and/or under Plaintiff's apparent interpretation of the claims as set forth by Plaintiff in its Complaint and its Infringement Contentions.

i. 1/16/2025 Combination 1 (Fadell)

A POSITA would have been motivated to combine Fadell with any one or more of Osten and Kohinata, and Yokoyama to incorporate life signs detectors such as a body pulse rate measurement indicator, a body O₂ saturation level indicator, a body heat measurement indicator, or an electro-optical sensor to improve security for the reasons discussed above with a reasonable expectation of success.

For example, Osten discloses “[n]on-specific biometric recognition circuitry shown in FIG. 1 include biomedical (EKG) electrodes 24 communicating with analog signal processor 32, light emitting diode (LED) sources (one in the visible range (about 660 nm) and the other in the near infrared (NIR) range (about 910 nm)) and detector 26 communicating with timed power source and signal processor 34, for the plethysmographic signals of the blood pulse/oxygen monitor and temperature sensor 28 communicating with signal processor and ambient temperature sensor 36.” Osten at 6:55-65; *see also id.* at 8:46-56, 9:23-30, 10:31-49, Fig. 1. As another example, Kohinata discloses a “temperature obtaining unit 15 is constituted by a plurality of temperature sensors arranged on the surface of the cellular phone 1 for detecting the temperature at regular temperature of the user when the temperature obtaining unit 15 is touched by the palm or fingers of hand of the user” Kohinata at 4:31-39, *see also id.* at 4:1-8, 4:31-5:10, 6:30-62, 8:34-39, 8:55-67, 10:51-11:10, Fig. 1. As another example, Yokoyama discloses a “biometric identification apparatus capable of accurately and rapidly performing liveness detection with a simpler structure than that of conventional technology, by focusing on inherent transmittance of a living body, not on a feeble, dynamic signal such as a pulse.” Yokoyama at ¶ [0008]. “According

to the present invention, liveness detection on an object to be identified can be accurately and rapidly performed with a simpler structure than that of conventional technology, by obtaining the optical transmittance of an object to be identified and comparing the transmittance with a previously-set transmittance threshold.” *Id.* at ¶ [0014]; *see also id.* at ¶¶ [0009]-[0013], [0015], [0020]-[0022], [0028], Figs. 1, 5-7, 13.

One of skill in the art would have been motivated to apply the teachings of one or more of Osten, Kohinata, and Yokoyama to modify Fadell to include life signs detectors such as a body pulse rate measurement indicator, a body O₂ saturation level indicator, a body heat measurement indicator, or an electro-optical sensor into its biometric authentication system in furtherance of its goal to provide “suitable countermeasure for preventing an unauthorized user from spoofing” one or more biometric parameters of an authorized user used for authentication. Fadell at ¶ [0057]. A POSITA would thus have been motivated to include these features in the device disclosed by Fadell to provide further security to personal data and prevent unauthorized access. One of skill in the art would have been motivated to combine these references in order to achieve one or more of these benefits, with a reasonable expectation of success. A POSITA would further have been motivated to combine these references as they are all directed to portable biometric authentication systems. Life signs detection integrated into biometric authentication systems was well-understood and known to those of ordinary skill in the art. *See* Section IV.B.1, *supra*. For at least these reasons, these combinations would have also been “obvious to try,” because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success. A POSITA would have had a reasonable expectation of success in implementing the life signs detectors disclosed by Osten, Kohinata, and/or Yokoyama into Fadell’s

device because all of these references are directed to mobile comprising biometric authentication systems to secure personal data.

A POSITA also would have had reason to combine Fadell with any one or more of U.S. Pat. No. 5,229,764 to Matchett et al. (“Matchett”), EP 1 318 459 B1 to Tanaka et al. (“Tanaka”), U.S. Pat. App. Pub. No. 2010/0115607 to Pratt et al. (“Pratt”), U.S. Pat. App. Pub. No. 2009/0037742 to Narayanaswami et al. (“Narayanaswami”), U.S. Pat. No. 6,539,380 to Moran (“Moran”), U.S. Pat. App. Pub. No. 2005/0240778 to Saito (“Saito”), and JP 2001-109855 A to Mizusawa et al. (“Mizusawa”), all of which disclose an authentication unit comprising a second storage unit, with said second storage unit configured to store a pre-recorded set of personal biological biometric identification parameters uniquely associated with a specific user.

For example, Matchett discloses “a user submits his biometric data. . . . The data is processed . . . and stored in a storage device 224 which may be a secure CD-ROM library or other digital storage site. The storage site may be either internal or remote, and may even constitute another CPU.” Matchett at 6:34-48; *see also id.* at 5:7-25, Figs. 1-3. As another example, Tanaka discloses “a facial feature database i5 for managing the facial feature data” (¶ [0019]), a “fingerprint database f5” (¶ [0022]), a “a facial feature temporary storage unit [i7] that is provided in place of the facial feature database” (¶ [0034]) and a “voiceprint database v5 for managing the voiceprint data” (¶ [0047]). *See also* Tanaka at Figs. 1, 5, 9, 13. Pratt discloses an “authentication data storage 174 may store data used in association with the authentication processor 172 in one or more of the multiple authentication modes.” Pratt at ¶ [0028]; *see also id.* at ¶¶ [0027], [0029], [0030]-[0031], [0036]-[0038], [0048]-[0049]; Fig. 2, Fig. 4. As another example, Narayanaswami discloses “[a]n authentication section 46 determines whether the biometric read by the biometric

reader 44 is authentic or not compared to pre-stored biometric identification data.” Narayanaswami at ¶ [0083]; *see also id.* at ¶¶ [0038], [0106], Fig. 2.

As another example, Moran discloses “[b]iometric detection device 22 optionally and preferably contains an internal memory 24 for storing instructions on the scanning of fingerprints, and more preferably on the interpretation of such fingerprints with regard to stored fingerprint data. The stored fingerprint data is also optionally stored on internal memory 24, but alternatively is stored on a separate memory 26 of access control device 16. If biometric detection device 22 contains internal memory 24, then more preferably a data processor 28 is also present.” Moran at 10:52-11:2; *see also id.* at Fig. 3. As another example, Saito discloses an “authentication CPU 56 may include a memory 60 therein and perform the above-described authentication process so as to generate the authentication signal. The biometric information of the specific individual associated with the smart card, and optional personal information of the specific individual is stored in the memory 60.” Saito at ¶ [0049]; *see also id.* at ¶¶ [0033]-[0034], [0040]-[0041], [0054], Figs. 2 & 7-8. Mizusawa discloses “a plurality of primary authentication units having different methods of personal authentication and a secondary authentication unit that finally authenticates an individual using the output result of the primary authentication units.” Mizusawa at ¶ [0010]; *see also id.* at ¶¶ [0011], [0020]-[0022], Fig. 1.

One of skill in the art would have been motivated to apply the teachings of one or more of these references to modify Fadell to allow an authentication system to store biometric authentication reference data for authorized users of the system. For example, Moran discloses “the implementation of access control device 16 as a chip, or other electronic device, whether integrated into, or separate from, data storage device 18, is particularly preferred since such an implementation also enables the security of access control device 16 to be more easily maintained,

as electronic hardware devices are more difficult to “hack” for unauthorized access.” Moran at 7:49-60. A POSITA would thus have been motivated to include these features in the device disclosed by Fadell to provide further security to personal data and prevent unauthorized access. One of skill in the art would have been motivated to combine these references in order to achieve one or more of these benefits, with a reasonable expectation of success. A POSITA would further have been motivated to combine these references as they are all directed to portable biometric authentication systems. Authentication systems comprising storage for biometric reference data to perform authentication were well-understood and known to those of ordinary skill in the art. For at least these reasons, these combinations would have also been “obvious to try,” because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success. A POSITA would have had a reasonable expectation of success in implementing the teachings of Matchett, Tanaka, Pratt, Narayanaswami, Saito and/or Mizusawa into Fadell’s device because all of these references are directed to mobile electronic devices containing biometric authentication systems to secure personal data.

A POSITA also would have had reason to combine Fadell with any one or more of WO 2007/065809 (“Henning”), U.S. Patent No. 6,931,538 (“Sawaguchi”), U.S. Patent App. Pub. No. 2016/0210491 (“Rosenblatt”), and U.S. Patent No. 7,363,504 (“Bonalle”), all of which disclose biometric authentication systems with integrated digital encoder/decoders and wireless transceivers configured to communicate with external devices such as RF operated credit card readers, ATM machines, and remotely operated electronic locks, gates, and door openers using RFID based techniques. In the context of the ’857 Patent, a POSITA would have understood that integrated digital encoder/decoders and wireless transceivers are exemplary structures for communication and data connection means for communicating with an external device.

For example, Henning discloses a “portable electronic device has a carrying bracket or a carrying clip in order to fasten the portable electronic device This is particularly advantageous for applications as an electronic access key to a building or another access-protected area. At the entrances to such access-protected areas, RFID readers are usually arranged at hip height. When the user fastens the portable electronic device to his belt, he only needs to walk past such an RFID reader. The RFID reader can then query the RFID tag of the portable electronic device without the user having to handle the portable electronic device.” Henning at 7:1-7. Henning also discloses that the portable electronic device has one or more radio identification elements or Radio Frequency Identification (RFID) systems, providing it with a universal key function. Henning at 5:9-17. Henning discloses that the portable electronic device can be used as an electronic key for accessing electronic devices, data, or functions, and also as an electronic car key, building key, or for other access protection systems. Henning at 5:9-17. As another example, Sawaguchi discloses a portable personal authentication apparatus such as a cellular phone or PDA including at least one of “fingerprint, voiceprint, retinaprint, irisprint, face, and signature” authentication means. Sawaguchi at 2:51-57. Sawaguchi discloses that “the end user 5 uses his/her own portable communication terminal device 51 (i.e. portable personal authentication apparatus) to utilize an ATM online system or to utilize Internet and access a service system provided by each of companies including banks (step S31). In either case, the public network 6 is used to access.” *Id.* at 8:4-9. Rosenblatt discloses “techniques for providing additional security for wireless communications using portable electronic devices.” Rosenblatt at ¶ [0007]. Rosenblatt further discloses a “device 10 may further include a near field communication (NFC) device 44. . . . The close range communication with the NFC device 44 may take place via magnetic field induction, allowing the NFC device 44 to communicate with other NFC devices or to retrieve information

from tags having radio frequency identification (RFID) circuitry.” *Id.* at ¶ [0041]. Rosenblatt further discloses that the “portability of the device 10 makes it particularly well suited to performing transactions such as automatic teller machine (ATM) transactions, and purchase transactions.” *Id.* at ¶ [0057]. Rosenblatt explains that “[t]he device 10 may be configured to communicate with the transaction terminal 120 using a short range wireless communication protocol.” *Id.* at ¶ [0063]. As another example, Bonalle discloses a smartcard with a biometric security system to facilitate authorization of transactions. Bonalle at 2:9-16. Bonalle discloses that the smartcard can be used at access points such as ATMs and point of sale terminals, *id.* at 10:26-38, or as part of a door lock apparatus, *id.* at 32:52-65.

One of skill in the art would have been motivated to apply the teachings of one or more of these references to modify Fadell to allow the device to communicate with external devices such as those to access financial transactions or to open doors to secured areas. For example, Rosenblatt discloses that “[p]ortable electronic devices such as cellular phones, media players and the like have become so fully integrated into popular culture that it is rare that people do not own and carry at least one with them.” Rosenblatt at ¶ [0005]. These devices “may be configured to perform functions beyond the conventional functions” such as to “wireless transfer and receive documents and/or sensitive financial information,” where additional security measures are desirable. *Id.* A POSITA would thus have been motivated to include these features in the device disclosed by Fadell to reduce the number of devices and cards a user needs to carry while improving secured access to financial information and restricted entry points. One of skill in the art would have been motivated to combine these references in order to achieve one or more of these benefits. A POSITA would further have been motivated to combine these references as they are all directed to portable biometric authentication systems. Integrated digital encoder/decoders and wireless

transceivers were common elements of handheld electronic devices known to those of ordinary skill in the art, and implementing RFID based communication protocols was a common implementation of this circuitry known to those of skill in the art. For at least these reasons, combination would have also been “obvious to try,” because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success. A POSITA would have had a reasonable expectation of success in implementing the wireless communications teachings of Henning, Sawaguchi, Rosenblatt and/or Bonalle, in Fadell’s device because each reference is directed to a portable electronic device containing biometric authentication systems to secure personal data, including personal data that may need to be securely transferred to external devices.

A POSITA also would have had reason to combine Fadell with any one or more of U.S. Pat. No. 8,316,436 to Shirai et al. (“Shirai”), Sawaguchi, U.S. Pat. App. Pub. No. 2010/0201567 to Lydon et al. (“Lydon”), and Rosenblatt, all of which disclose a device comprising an integrated GPS module in communication with a processor to precisely locate the geographical position of the device.

For example, Shirai discloses that a “processor 20 may receive input from a position sensor 32, such as but not limited to a global position satellite (GPS) receiver . . . that indicates the geographic position of the computer 10.” Shirai at 3:4-10; *see also id.* at Fig. 1. Sawaguchi discloses a “a portable communication terminal device” comprising “equipment being able to receive satellite waves of the Global Positioning System (GPS) is sent to the competent center via a portable communication line.” Sawaguchi at 5:41-54; *see also id.* at Fig. 4. Lydon discloses a “[portable media device] 250 can include a location data receiver 211. Receiver 211 can be, e.g., a GPS receiver.” Lydon at ¶ [0033]; *see also id.* at Abstract; Fig. 2B. As another example,

Rosenblatt discloses a “device 10 may also include a positioning device 70 used to determine a user’s geographical position. . . . The positioning device 70 may utilize the global positioning system (GPS) implemented using satellite communications or a regional or site-wide positioning system that uses cell tower positioning technology or Wi-Fi technology, for example.” Rosenblatt at ¶ [0055]; *see also id.* at ¶¶ [0070]-[0072], Fig. 3, Fig. 9b.

One of skill in the art would have been motivated to apply the teachings of one or more of these references to modify Fadell to allow for precisely locating the geographical position of the device. For example, Rosenblatt discloses that “authentication may be based on the location of the device 10 in some embodiments. . . . For example, the server 162 may be configured to determine the location of the ATM 160 based on information stored on the database 164. The server 162 may then confirm that the location of the device 10 coincides with the location of the ATM 160. As such, the device 10 may be authenticated based on the location of the device 10 as determined by the positioning system 70.” Rosenblatt at ¶ [0071]; *see also id.* at ¶ [0055], Fig. 3, Fig. 9b. As another example, Sawaguchi discloses “equipment etc being able to receive satellite waves of the Global Positioning System (GPS) is sent to the competent center by any communication medium. In the case of canceling urgent notification, communication is performed with a communication medium of a portable personal authentication apparatus and the authentication of the person concerned is performed. This will prevent the cancel of urgent notification . . . performed with evil intent, resulting in an increase in the reliability of notification.” Sawaguchi at 11:31-46. A POSITA would thus have been motivated to include these features in the devices disclosed by Fadell to provide additional methods of authentication in furtherance of its goal of securing personal data and preventing unauthorized access, as well as provide health and safety features. One of skill in the art would have been motivated to combine these references

in order to achieve one or more of these benefits. A POSITA would further have been motivated to combine these references as they are all directed to handheld electronic devices containing secured personal data protected by biometric authentication systems. GPS modules were common elements of handheld electronic devices well-understood by those of ordinary skill in the art. For at least these reasons, combination would have also been “obvious to try,” because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success. Further, adding geographic position functionality to the handheld electronic communications devices, such as cellular telephones and personal digital assistants (PDAs), would have been the application of a known technique to known devices ready for improvement to yield predictable results.

A POSITA would have had a reasonable expectation of success in making any of the above such modifications. A POSITA would have understood that these references, as well as the POSITA’s knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations. A POSITA would have had a reasonable expectation of success in implementing the GPS feature of Shirai, Sawaguchi, Lydon, and/or Rosenblatt in Fadell’s device because each reference is directed to mobile electronic devices containing biometric authentication systems for securing personal data, including data regarding the real-time location of the device.

ii. Combination 2 (Beenau)

A POSITA would have been motivated to combine Beenau with any one or more of Osten, Kohinata, and Yokoyama to incorporate life signs detectors such as a body pulse rate measurement indicator, a body O₂ saturation level indicator, a body heat measurement indicator, or an electro-optical sensor to improve security for the reasons discussed above with a reasonable expectation of success. *See* Sections IV.B.1, IV.B.2.i, *supra*.

A POSITA would have had reason to combine Beenau with any one or more of Henning, Sawaguchi, Rosenblatt, and Bonalle, all of which disclose biometric authentication systems with integrated digital encoder/decoders and wireless transceivers configured to communicate with external devices such as RF operated credit card readers, ATM machines, and remotely operated electronic locks, gates, and door openers using RFID based techniques with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine Beenau with any one or more of Shirai, Sawaguchi, Lydon, and Rosenblatt, all of which disclose a device comprising an integrated GPS module in communication with a processor to precisely locate the geographical position of the device, with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA would have had a reasonable expectation of success in making any of the above such modifications. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

iii. Combination 3 (Pratt)

A POSITA would have been motivated to combine Pratt with any one or more of Osten, Kohinata, and Yokoyama to incorporate life signs detectors such as a body pulse rate measurement indicator, a body O₂ saturation level indicator, a body heat measurement indicator, or an electro-optical sensor to improve security for the reasons discussed above with a reasonable expectation of success. *See* Sections IV.B.1, IV.B.2.i, *supra*.

A POSITA would have been motivated to modify Pratt's authentication systems to include a plurality of biometric authentication methods as disclosed by Fadell and/or Mizusawa, including scanning/sensing of fingerprints, facial features, eye features, handwriting, and voice recognition,

in order to reduce the FRR and FAR rates and prevent unauthorized access and incorporate life signs detection to improve security for the reasons discussed above with a reasonable expectation of success with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*. For example, Fadell discloses that “several authentication systems may be used sequentially before access to particular restricted resources is provided.” Fadell at ¶ [0091]; *see also id.* at ¶¶ [0028], [0041], [0052], [0073], [0079], [0092]-[0095]. Mizusawa discloses “a plurality of primary authentication units having different methods of personal authentication and a secondary authentication unit that finally authenticates an individual using the output result of the primary authentication units.” Mizusawa at ¶ [0010]; *see also id.* at ¶¶ [0011], [0020]-[0022], Fig. 1. A POSITA would thus have been motivated to include these features in the device disclosed by Pratt to provide further security to personal data and prevent unauthorized access in the event one biometric sensor was compromised by an unauthorized user. Insufficiently high FRR and FAR rates were known problems in the art, and implementing more than one biometric sensor for authentication was a well-understood solution to this known problem. A POSITA would have had a reasonable expectation of success in implementing the plurality of biometric sensors teachings disclosed by Osten and Kohinata into Pratt’s device because all of these references are directed to mobile devices comprising biometric authentication systems to secure person data.

A POSITA would have had reason to combine Pratt with any one or more of Henning, Sawaguchi, Rosenblatt, and Bonalle, all of which disclose biometric authentication systems with integrated digital encoder/decoders and wireless transceivers configured to communicate with external devices such as RF operated credit card readers, ATM machines, and remotely operated

electronic locks, gates, and door openers using RFID based techniques with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine Pratt with any one or more of Henning, Sawaguchi, Rosenblatt, and Bonalle, all of which disclose biometric authentication systems with integrated digital encoder/decoders and wireless transceivers configured to communicate with external devices such as RF operated credit card readers, ATM machines, and remotely operated electronic locks, gates, and door openers using RFID based techniques with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine Pratt with any one or more of Shirai, Sawaguchi, Lydon, and Rosenblatt, all of which disclose a device comprising an integrated GPS module in communication with a processor to precisely locate the geographical position of the device with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA would have had a reasonable expectation of success in making any of the above such modifications. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

iv. Combination 4 (Venkatanna)

A POSITA would have had reason to combine Venkatanna with any one or more Matchett, Tanaka, Pratt, Narayanaswami, Moran, Saito, Mizusawa, all of which disclose an authentication unit comprising a second storage unit, with said second storage unit configured to store a pre-recorded set of personal biological biometric identification parameters uniquely associated with a specific user with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA would have been motivated to modify Venkatana's authentication systems to include a plurality of biometric authentication methods as disclosed by Fadell and/or Mizusawa, including scanning/sensing of fingerprints, facial features, eye features, handwriting, and voice recognition, in order to reduce the FRR and FAR rates and prevent unauthorized access and incorporate life signs detection to improve security for the reasons discussed above with a reasonable expectation of success with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.iii, *supra*. A POSITA would have been motivated to combine Venkatanna with any one or more of Osten, Kohinata, and Yokoyama to incorporate life signs detectors such as a body pulse rate measurement indicator, a body O₂ saturation level indicator, a body heat measurement indicator, or an electro-optical sensor to improve security for the reasons discussed above with a reasonable expectation of success. *See* Sections IV.B.1, IV.B.2.i, *supra*.

A POSITA would have had reason to combine Venkatanna with any one or more of Henning, Sawaguchi, Rosenblatt, and Bonalle, all of which disclose biometric authentication systems with integrated digital encoder/decoders and wireless transceivers configured to communicate with external devices such as RF operated credit card readers, ATM machines, and remotely operated electronic locks, gates, and door openers using RFID based techniques with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine Venkatanna with any one or more of Shirai, Sawaguchi, Lydon, and Rosenblatt, all of which disclose a device comprising an integrated GPS module in communication with a processor to precisely locate the geographical position of

the device with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA would have had a reasonable expectation of success in making any of the above such modifications. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

v. Combination 5 (Narayanaswami)

A POSITA would have been motivated to modify Narayanawami's authentication systems to include a plurality of biometric authentication methods as disclosed by Fadell and/or Mizusawa, including scanning/sensing of fingerprints, facial features, eye features, handwriting, and voice recognition, in order to reduce the FRR and FAR rates and prevent unauthorized access and incorporate life signs detection to improve security for the reasons discussed above with a reasonable expectation of success with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.iii, *supra*. A POSITA would have been motivated to combine Narayanaswami with any one or more of Osten, Kohinata, and Yokoyama to incorporate life signs detectors such as a body pulse rate measurement indicator, a body O₂ saturation level indicator, a body heat measurement indicator, or an electro-optical sensor to improve security for the reasons discussed above with a reasonable expectation of success. *See* Sections IV.B.1, IV.B.2.i, *supra*.

A POSITA would have had reason to combine Narayanaswami with any one or more of Henning, Sawaguchi, Rosenblatt, and Bonalle, all of which disclose biometric authentication systems with integrated digital encoder/decoders and wireless transceivers configured to communicate with external devices such as RF operated credit card readers, ATM machines, and remotely operated electronic locks, gates, and door openers using RFID based techniques with a

reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine Narayanaswami with any one or more of Shirai, Sawaguchi, Lydon, and Rosenblatt, all of which disclose a device comprising an integrated GPS module in communication with a processor to precisely locate the geographical position of the device with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA would have had a reasonable expectation of success in making any of the above such modifications. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations with a reasonable expectation of success for the same reasons described above.

vi. Combination 6 (Osten)

A POSITA would have been motivated to modify Osten's authentication systems to include a plurality of biometric authentication methods as disclosed by Fadell and/or Mizusawa, including scanning/sensing of fingerprints, facial features, eye features, handwriting, and voice recognition, in order to reduce the FRR and FAR rates and prevent unauthorized access and improve security for the reasons discussed above with a reasonable expectation of success with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.iii, *supra*.

A POSITA would have had reason to combine Osten with any one or more of Matchett, Tanaka, Pratt, Narayanaswami, Moran, Saito, and Mizusawa, all of which disclose authentication unit comprising a second storage unit, with said second storage unit configured to store a pre-recorded set of personal biological biometric identification parameters uniquely associated with a

specific user with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine Osten with any one or more of Henning, Sawaguchi, Rosenblatt, and Bonalle, all of which disclose biometric authentication systems with integrated digital encoder/decoders and wireless transceivers configured to communicate with external devices such as RF operated credit card readers, ATM machines, and remotely operated electronic locks, gates, and door openers using RFID based techniques with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *infra*.

A POSITA also would have had reason to combine Osten with any one or more of Shirai, Sawaguchi, Lydon, and Rosenblatt, all of which disclose a device comprising an integrated GPS module in communication with a processor to precisely locate the geographical position of the device with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA would have had a reasonable expectation of success in making any of the above such modifications. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

vii. Combination 7 (Kohinata)

A POSITA would have been motivated to modify Kohinata's authentication systems to include a plurality of biometric authentication methods as disclosed by Fadell and/or Mizusawa, including scanning/sensing of fingerprints, facial features, eye features, handwriting, and voice recognition, in order to reduce the FRR and FAR rates and prevent unauthorized access and improve security for the reasons discussed above with a reasonable expectation of success with a

reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.iii, *supra*.

A POSITA also would have had reason to combine Kohinata with any one or more of Henning, Sawaguchi, Rosenblatt, and Bonalle, all of which disclose biometric authentication systems with integrated digital encoder/decoders and wireless transceivers configured to communicate with external devices such as RF operated credit card readers, ATM machines, and remotely operated electronic locks, gates, and door openers using RFID based techniques with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine Kohinata with any one or more of Shirai, Sawaguchi, Lydon, and Rosenblatt, all of which disclose a device comprising an integrated GPS module in communication with a processor to precisely locate the geographical position of the device with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA would have had a reasonable expectation of success in making any of the above such modifications. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

viii. Combination 8 (Henning)

A POSITA would have been motivated to modify Henning's authentication systems to include a plurality of biometric authentication methods as disclosed by Fadell and/or Mizusawa, including scanning/sensing of fingerprints, facial features, eye features, handwriting, and voice recognition, in order to reduce the FRR and FAR rates and prevent unauthorized access and incorporate life signs detection to improve security for the reasons discussed above with a

reasonable expectation of success with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.iii, *supra*. Likewise, a POSITA would have been motivated to incorporate life signs detectors such as a body pulse rate measurement indicator, a body O₂ saturation level indicator, a body heat measurement indicator, or an electro-optical sensor as disclosed by Osten, Kohinata, and/or Yokoyama to improve security for the reasons discussed above with a reasonable expectation of success. *See* Sections IV.B.1 IV.B.2.i, *supra*.

A POSITA would have had reason to combine Henning with any one or more of Matchett, Tanaka, Pratt, Narayanaswami, Moran, Saito, and Mizusawa, all of which disclose authentication unit comprising a second storage unit, with said second storage unit configured to store a pre-recorded set of personal biological biometric identification parameters uniquely associated with a specific user with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine Henning with any one or more of Sawaguchi, Rosenblatt, and Bonalle, all of which disclose biometric authentication systems with integrated digital encoder/decoders and wireless transceivers configured to communicate with external devices such as RF operated credit card readers, ATM machines, and remotely operated electronic locks, gates, and door openers using RFID based techniques with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine Henning with any one or more of Shirai, Sawaguchi, Lydon, and Rosenblatt, all of which disclose a device comprising an integrated GPS module in communication with a processor to precisely locate the geographical position of the device with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA would have had a reasonable expectation of success in making any of the above such modifications. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

ix. Combination 9 (Saito)

A POSITA would have been motivated to modify Saito's authentication systems to include a plurality of biometric authentication methods as disclosed by Fadell and/or Mizusawa, including scanning/sensing of fingerprints, facial features, eye features, handwriting, and voice recognition, in order to reduce the FRR and FAR rates and prevent unauthorized access and incorporate life signs detection to improve security for the reasons discussed above with a reasonable expectation of success with a reasonable expectation of success for the same reasons described above. Sections IV.B.2.i, IV.B.2.iii, *supra*. Likewise, a POSITA would have been motivated to incorporate life signs detectors such as a body pulse rate measurement indicator, a body O₂ saturation level indicator, a body heat measurement indicator, or an electro-optical sensor as disclosed by Osten, Kohinata, and/or Yokoyama to improve security for the reasons discussed above with a reasonable expectation of success. *See* Sections IV.B.1, IV.B.2.i, *supra*.

A POSITA would have had reason to combine Saito with any one or more of Matchett, Tanaka, Pratt, Narayanaswami, Moran, and Mizusawa, all of which disclose authentication unit comprising a second storage unit, with said second storage unit configured to store a pre-recorded set of personal biological biometric identification parameters uniquely associated with a specific user with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine Saito with any one or more of Henning, Sawaguchi, Rosenblatt, and Bonalle, all of which disclose biometric authentication systems with

integrated digital encoder/decoders and wireless transceivers configured to communicate with external devices such as RF operated credit card readers, ATM machines, and remotely operated electronic locks, gates, and door openers using RFID based techniques with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine Saito with any one or more of Shirai, Sawaguchi, Lydon, and Rosenblatt, all of which disclose a device comprising an integrated GPS module in communication with a processor to precisely locate the geographical position of the device with a reasonable expectation of success for the same reasons described above. *See* Section IV.B.2.i, *supra*.

A POSITA would have had a reasonable expectation of success in making any of the above such modifications. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

x. Combination 10 (HIDE 4.0)

A POSITA would have been motivated to incorporate life signs detection to improve security for the reasons discussed above with a reasonable expectation of success. *See* Sections IV.B.1, IV.B.2.i, *supra*. For example, Pacut et al., *Aliveness Detection for Iris Biometrics*, IEEE (Oct. 2006) ("Pacut") discloses "three solutions of eye aliveness detection, based on analyses of image frequency spectrum, controlled light reflection from the cornea, and pupil dynamics." Pacut at 1; *see also id.* at 4-7, Figs. 3-10. Further, Pacut discloses a need to anti-spoofing mechanisms in eye-based biometric authentication methods: "Various experiments show an alarming lack of anti-spoofing mechanisms in devices already protecting many sensitive areas all over the world, proving that aliveness detection methods must be quickly included in commercial equipment." A POSITA would have had a reasonable expectation of success in

applying the teachings of any one of the three solutions for eye aliveness detection in Pacut to modify the iris sensor in the HIIDE 4.0 product to improve security.

A POSITA would have had reason to combine HIIDE 4.0 with any one or more of Matchett, Tanaka, Pratt, Narayanaswami, Moran, and Mizusawa, all of which disclose authentication unit comprising a second storage unit, with said second storage unit configured to store a pre-recorded set of personal biological biometric identification parameters uniquely associated with a specific user. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine HIIDE 4.0 with any one or more of Henning, Sawaguchi, Rosenblatt, and Bonalle, all of which disclose biometric authentication systems with integrated digital encoder/decoders and wireless transceivers configured to communicate with external devices such as RF operated credit card readers, ATM machines, and remotely operated electronic locks, gates, and door openers using RFID based techniques. *See* Section IV.B.2.i, *supra*.

A POSITA also would have had reason to combine HIIDE 4.0 with any one or more of Shirai, Sawaguchi, Lydon, and Rosenblatt, all of which disclose a device comprising an integrated GPS module in communication with a processor to precisely locate the geographical position of the device. *See* Section IV.B.2.i, *supra*.

A POSITA would have had a reasonable expectation of success in making any of the above such modifications. A POSITA would have understood that these references, as well as the POSITA's knowledge, disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

xi. Additional Combinations

For at least the reasons described above, it would have been obvious to one of ordinary skill in the art to combine each prior art reference identified in Appendices A-1–A-10 with any

other reference or references identified in this Section IV.B.2 along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '875 Patent. For example, and without limitation, the Asserted Claims of the '875 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

Table 4: Additional Prior Art Combinations

Patent Number or Title (Primary Inventor/Author)	In Combination with One or More of: Patent Number or Title (Primary Inventor/Author)
Faddell	• Beenau • Pratt • Venkatanna • Narayanswami • Osten • Kohinata • Henning • Saito • Matchett • Tanaka • Pratt • Moran • Mizusawa • Sawaguchi • Rosenblatt • Bonalle • Mass • Shirai • Lydon • Tran • Anderson • Keppler • Usher • Pacut • Yokoyama
Beenau	• Faddell • Pratt • Venkatanna • Narayanswami • Osten • Kohinata

Patent Number or Title (Primary Inventor/Author)	In Combination with One or More of: Patent Number or Title (Primary Inventor/Author)
	• Henning • Saito • Matchett • Tanaka • Pratt • Moran • Mizusawa • Sawaguchi • Rosenblatt • Bonalle • Mass • Shirai • Lydon • Tran • Anderson • Keppler • Usher • Pacut • Yokoyama
Pratt	• Faddell • Beenau • Venkatanna • Narayanswami • Osten • Kohinata • Henning • Saito • Matchett • Tanaka • Pratt • Moran • Mizusawa • Sawaguchi • Rosenblatt • Bonalle • Mass • Shirai • Lydon • Tran • Anderson

Patent Number or Title (Primary Inventor/Author)	In Combination with One or More of: Patent Number or Title (Primary Inventor/Author)
	• Keppler • Usher • Pacut • Yokoyama
Venkatanna	• Faddell • Beenau • Pratt • Narayanswami • Osten • Kohinata • Henning • Saito • Matchett • Tanaka • Pratt • Moran • Mizusawa • Sawaguchi • Rosenblatt • Bonalle • Mass • Shirai • Lydon • Tran • Anderson • Keppler • Usher • Pacut • Yokoyama
Narayanaswami	• Faddell • Beenau • Pratt • Venkatanna • Osten • Kohinata • Henning • Saito • Matchett • Tanaka • Pratt

Patent Number or Title (Primary Inventor/Author)	In Combination with One or More of: Patent Number or Title (Primary Inventor/Author)
	• Moran • Mizusawa • Sawaguchi • Rosenblatt • Bonalle • Mass • Shirai • Lydon • Tran • Anderson • Keppler • Usher • Pacut • Yokoyama
Osten	• Faddell • Beenau • Pratt • Venkatanna • Narayanswami • Kohinata • Henning • Saito • Matchett • Tanaka • Pratt • Moran • Mizusawa • Sawaguchi • Rosenblatt • Bonalle • Mass • Shirai • Lydon • Tran • Anderson • Keppler • Usher • Pacut • Yokoyama

Patent Number or Title (Primary Inventor/Author)	In Combination with One or More of: Patent Number or Title (Primary Inventor/Author)
Kohinata	• Faddell • Beenau • Pratt • Venkatanna • Narayanswami • Osten • Henning • Saito • Matchett • Tanaka • Pratt • Moran • Mizusawa • Sawaguchi • Rosenblatt • Bonalle • Mass • Shirai • Lydon • Tran • Anderson • Keppler • Usher • Pacut • Yokoyama
Henning	• Faddell • Beenau • Pratt • Venkatanna • Narayanswami • Osten • Kohinata • Saito • Matchett • Tanaka • Pratt • Moran • Mizusawa • Sawaguchi • Rosenblatt

Patent Number or Title (Primary Inventor/Author)	In Combination with One or More of: Patent Number or Title (Primary Inventor/Author)
	• Bonalle • Mass • Shirai • Lydon • Tran • Anderson • Keppler • Usher • Pacut • Yokoyama
Saito	• Faddell • Beenau • Pratt • Venkatanna • Narayanswami • Osten • Kohinata • Henning • Matchett • Tanaka • Pratt • Moran • Mizusawa • Sawaguchi • Rosenblatt • Bonalle • Mass • Shirai • Lydon • Tran • Anderson • Keppler • Usher • Pacut • Yokoyama
HIIDE 4.0	• Faddell • Beenau • Pratt • Venkatanna • Narayanswami

Patent Number or Title (Primary Inventor/Author)	In Combination with One or More of: Patent Number or Title (Primary Inventor/Author)
	• Osten • Kohinata • Henning • Matchett • Tanaka • Pratt • Moran • Mizusawa • Sawaguchi • Rosenblatt • Bonalle • Mass • Shirai • Lydon • Tran • Anderson • Keppler • Usher • Pacut • Yokoyama

As mentioned above, Defendants have not yet completed their search or discovery concerning additional prior art. Moreover, the exemplary combinations are provided based on Defendants' current understanding of the Asserted Claims and Plaintiffs' apparent view of the scope of those claims as shown, for example, in Plaintiff's Infringement Contentions. Further, a *Markman* Order has not yet been issued in this case. As such, Defendants' inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Defendants reserve the right to identify additional specific combinations as well as to detail and explain such combinations.

V. P.R. 3-3(C) – CLAIM CHARTS

Pursuant to Rule 3-3(c), Defendants identify invalidity claim charts identifying disclosures in the references identified in Sections III–IV, *supra* as to the Asserted Claims of the '875 Patent are provided in attached Appendices A-1–A-10.

Appendix	Prior Art Reference
A-1	U.S. Patent App. Pub. No. 2009/0083847 A1 to Fadell et al. (“Fadell”)
A-2	United States Patent App. Pub. No. 2010/0030693 to Beenau et al. (“Beenau”)
A-3	United States Patent App. Pub. No. 2010/0115607 to Pratt et al. (“Pratt”)
A-4	U.S. Patent Application Pub. No. 2007/0241861 A1 to Venkatanna et al. (“Venkatanna”)
A-5	U.S. Patent Application Publication 2009/0037742 A1 (“Narayanaswami”)
A-6	U.S. Patent No. 5,719,950 to Osten et al. (“Osten”)
A-7	United States Patent No. 6,788,928 to Kohinata et al. (“Kohinata”)
A-8	WO 2007/065809 to Henning et al. (“Henning”)
A-9	U.S. Patent Application Publication No. 2005/0240778 A1 to Saito (“Saito”)
A-10	L-1 Identity Solutions, Biometrics Division’s Handheld Interagency Identity Detection Equipment, Series 4 User Guide, Software Version 4.0.2, Part Number: UG-30010-01 Rev 1.1 (“HIIDE 4.0”)

Defendants have identified relevant portions and/or features of the prior art. However, the identified prior art may contain additional descriptions of or alternative support for the claim limitations. Defendants may rely on uncited portions or features of the identified prior art, other documents, and expert testimony, to provide context or to aid in understanding the identified prior art and the state of the art. Citations to a particular figure in a reference include the caption and description of the figure and any text relating to the figure. Similarly, citations to particular text referring to a figure include the figure and caption as well. Portions relevant to dependent claims incorporate by reference the citations to the chain of claims from which that dependent claim derives. Likewise, portions related to subsequent limitations that refer to claim elements

identified, described, and/or cited to in earlier limitations may rely on the citations related to those portions of the claim chart that identify and/or describe these elements.

Throughout the invalidity claim charts in Appendices A-1–A-10, Defendants provide exemplary citations showing where references disclose subject matter recited in preambles of the Asserted Claims, regardless of whether the preambles limit the claims. Defendants reserve the right to argue that the preambles are or are not limitations. Further, where an entry in a claim chart corresponding to a given limitation refers back to the discussion of another claim, the entry incorporates all evidence cited for the other claim.

As noted above, the Asserted Claims have not yet been construed. Additional portions of the references may become relevant after claim construction. Defendants’ contentions are based on the information presently available, and Defendants reserve all rights to provide their claim construction positions in accordance with the Docket Control Order in this case.

VI. P.R. 3-3(D) – INVALIDITY UNDER 35 U.S.C. § 112

Pursuant to P.R. 3-3(d), Defendants hereby identify grounds of invalidity for the ’875 Patent based on lack of written description under pre-AIA 35 U.S.C. § 112 ¶ 1; and lack of enablement under pre-AIA 35 U.S.C. § 112 ¶ 1. These contentions shall not be construed as an admission that any claim construction advanced by Defendants in this case is in any way inconsistent, flawed, or erroneous. Nor should these contentions prevent Defendants from advancing claim construction and/or non-infringement positions in lieu of, or in addition to, invalidity positions. Further, these contentions shall not be construed as an admission of or acquiescence to Plaintiff’s purported construction of the claim language or of other positions advanced by Plaintiff during the course of this litigation. Defendants’ invalidity contentions under pre-AIA 35 U.S.C. § 112 may depend, in part, on the Court’s claim construction, as well as

Plaintiff's alleged scope of the Asserted Claims. Consequently, Defendants only identify the issues under pre-AIA 35 U.S.C. § 112 of which they are presently aware.

A. Lack of Written Description and/or Enablement Under pre-AIA 35 U.S.C. § 112 ¶ 1

One or more of the Asserted Claims, as detailed below, are invalid under pre-AIA 35 U.S.C. § 112 ¶ 1 for lack of written description and/or enablement. For example, the '875 Patent does not provide sufficient written description support to establish that the alleged inventor(s) possessed the alleged inventions recited in the Asserted Claims. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010). In other words, the applicants did not describe their purported inventions in a manner that "reasonably conveys to those skilled in the art that the inventor had possession of the claim subject matter as of the filing date." *Id.* One of ordinary skill in the art would not have understood that the inventor(s) were in possession of the full scope of the claimed apparatuses and methods, at least as Plaintiff appears to be asserting the claims.

The specifications of the '875 Patent also do not enable one of ordinary skill in the art to make and/or use certain recited elements of the Asserted Claims, as detailed below, without undue experimentation, at least as Plaintiff appears to be asserting those limitations. For example, to the extent they are definite under pre-AIA 35 U.S.C. § 112 ¶ 2, the specification and prosecution history of the '875 Patent fails to sufficiently describe or enable the limitations listed below in Table 5 them as required by pre-AIA 35 U.S.C. § 112 ¶ 1. *See In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1998); *see Wyeth & Cordis Corp. v. Abbott Lab's*, 720 F.3d 1380, 1384 (Fed. Cir. 2013).

Table 5: Claim Limitations Not Compliant with pre-AIA 35 U.S.C. § 112²

Term	Relevant Claim(s)
an authentication unit comprising a second storage unit, with said second storage unit configured to store a pre-recorded set of personal biological biometric identification parameters uniquely associated with the specific user, wherein said authentication unit is configured to compare the plurality of personal biological biometric identification parameters of the user holding the apparatus with the pre-recorded set of personal biological biometric identification parameters stored in said second storage unit	1
wherein, whenever any of said at least one life signs detector detects a critical level of said user measured life sign parameters, the apparatus is configured to prevent access to said user's personal data and documentation files stored in said first storage unit	1
a critical level of said user measured life sign parameters	1
any of a group of external devices including RF operated credit card readers, ATM machines, and remotely operated electronic locks gates and doors opener using RFID based techniques	15
an integrated GPS module in communication with the processor to precisely locate the geographical position of the apparatus	18

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

One or more of the Asserted Claims, as detailed below, are invalid under pre-AIA 35 U.S.C. § 112 ¶ 2 for indefiniteness. Under § 112 ¶ 2, “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). All of the Asserted Claims are invalid as indefinite under § 112 ¶ 2 because they fail to inform those skilled in the art about the scope of the invention with reasonable certainty. Separately, “the second paragraph of § 112

² Listed claims also include all Asserted Claims dependent thereon, even if those claims are not individually listed.

contains two requirements: first, the claim must set forth what the applicant regards as his invention, and second, it must do so with sufficient particularity and distinctness, i.e., the claim must be sufficiently definite.” *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002) (quotations and alterations omitted). “Where it would be apparent to one of skill in the art, based on the specification, that the invention set forth in a claim is not what the patentee regarded as his invention,” the claim is “invalid under § 112, paragraph 2.” *Id.* at 1349. The Asserted Claims of the ’875 Patent are invalid as indefinite because it would be apparent to one of skill in the art, based on the specification, that the invention set forth in these claims are not what the patentee regarded as his invention, at least as the claims are being asserted by Plaintiff. *Id.* The Asserted Claims are also invalid under pre-AIA § 112 ¶ 2 at least because they contain elements that differ from and/or conflict with the ’875 Patent’s written description of the invention, at least as the claim elements are being asserted by Plaintiff, or because they omit elements that one of skill in the art would understand as part of the ’875 Patent’s invention based on the specification and prosecution history.

For example, the specification and prosecution history of the ’875 Patent would not have informed, with reasonable certainty, those skilled in the art about the scope of the following claim limitations.

Table 6: Claim Limitations Not Compliant with pre-AIA 35 U.S.C. § 112³

Term	Relevant Claim(s)
an authentication unit comprising a second storage unit, with said second storage unit configured to store a pre-recorded set of personal biological biometric identification parameters uniquely associated with the specific user, wherein said authentication unit is configured to compare the plurality of personal biological biometric identification parameters of the user holding the apparatus with the pre-recorded set of personal biological biometric identification parameters stored in said second storage unit	1
wherein, whenever any of said at least one life signs detector detects a critical level of said user measured life sign parameters, the apparatus is configured to prevent access to said user's personal data and documentation files stored in said first storage unit	1
a critical level of said user measured life sign parameters	1
any of a group of external devices including RF operated credit card readers, ATM machines, and remotely operated electronic locks gates and doors opener using RFID based techniques	15
an integrated GPS module in communication with the processor to precisely locate the geographical position of the apparatus	18

VII. OTHER ISSUES

A. Priority Date of the '875 Patent

The Local Patent Rules do not require Defendants to identify or opine on the priority date relevant to the Asserted Claims. Further, discovery in this case is ongoing, and Defendants' investigation, collection of information, discovery, and analysis relating to this issue has not been completed. Nonetheless, Defendants note that Plaintiff admits that no asserted claim is entitled to a priority date any earlier than March 12, 2010. *See* D.I. 41 ¶¶ 17-18 (Plaintiff's Answer to Defendants' First Counterclaim). To the extent Plaintiff changes its position, Defendants reserve

³ Listed claims also include all Asserted Claims dependent thereon, even if those claims are not individually listed.

all rights to challenge any priority date(s) to which Plaintiff contends the Asserted Claims may be entitled, including all priority date(s) identified by Plaintiff in this or related proceedings (and whether or not so identified), including any litigations involving the same or any related patents, or related IPRs.

1. Asserted Claims 1, 4, and 15 of the '875 Patent

Plaintiff is not entitled to rely on the March 12, 2010, priority date of U.S. Prov. App. No. 61/313,145 (“the '145 Provisional”) for Asserted Claims 1, 4, and 15 of the '875 patent. The '145 Provisional does not support the claimed inventions as a whole as it does not disclose or support the claimed combination of elements in each of Asserted Claims 1, 4, and 15 of the '875 Patent.⁴ Moreover, the '145 Provisional fails to disclose at least the following limitations of the Asserted Claims of the '875 patent: “wherein, whenever any of said at least one life signs detector detects a critical level of said user measured life sign parameters, the apparatus is configured to prevent access to said user’s personal data and documentation files stored in said first storage unit.” Therefore, Asserted Claims 1, 4, and 15 of the '875 Patent cannot claim priority to the '145 Provisional.

Instead, the earliest date, if any, to which Plaintiff may be entitled to claim priority is August 4, 2010, the date that the application resulting in the '875 Patent was filed, to which the '875 Patent claims priority. Defendants reserve all rights to amend and/or supplement their Invalidity Contentions upon a finding that any of Asserted Claims 1, 4, and 15 of the '875 Patent are not entitled to the priority date asserted by Plaintiff. In particular, Defendants reserve all rights

⁴ The '145 Provisional also does not disclose or support the claimed combination of elements in Asserted Claim 18 of the '875 Patent; however, Plaintiff does not rely on the March 12, 2010 priority date of the '145 Provisional for Asserted Claim 18. Plaintiff asserts that Asserted Claim 18 is entitled to at least the priority date of August 4, 2010, the date that the application resulting in the '875 Patent was filed.

to amend and/or supplement their disclosures with further prior art to the extent that the Court determines a priority date subsequent to any of the dates asserted by Plaintiff.

B. Incorrect Inventorship Under 35 U.S.C. § 256

Defendants contend that the Asserted Claims of the '875 Patent are invalid under 35 U.S.C. § 256 if inventorship of the '875 Patents cannot be corrected pursuant to 35 U.S.C. § 256, because the '875 Patent does not name the correct inventors of the claimed subject matter. For example, Plaintiffs have not produced any evidence showing named inventor Avner Korman contributed to the conception or the reduction to practice of an limitation of any issued claim of the '875 Patent.

VIII. P.R. 3-4 – DOCUMENT PRODUCTION ACCOMPANYING INVALIDITY CONTENTIONS

Pursuant to P.R. 3-4(a), Defendants have produced and/or made available for inspection documents and other materials sufficient to show the operation of any aspects or elements of the Accused Products identified by Plaintiff in its P.R. 3-1(c) charts.

Additionally, and pursuant to P.R. 3-4(b), Defendants are concurrently producing a copy of each item of prior art identified herein. Defendants will also make available for inspection any prior art systems or devices upon request to the extent Defendants acquire such systems or devices. References that were cited during prosecution of the '875 Patent may not be contained in Defendants' production as they are not required to be under the Local Patent Rules. Defendants' search for prior art references, additional documentation, and/or corroborating evidence concerning prior art systems and devices is ongoing. Accordingly, Defendants reserve the right to supplement their production as Defendants obtain additional prior art references, documentation, and/or corroborating evidence concerning invalidity during the course of discovery. Defendants reserve the right to supplement their P.R. 3-4 document production pursuant to the Patent Local Rules and the orders of the Court.

Dated: January 16, 2024

/s/ Douglas J. Kline

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on January 16, 2024 a true and correct copy of the foregoing document was served on all counsel of record via email.

/s/ Douglas J. Kline
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