

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CAMBRIDGE MOBILE TELEMATICS, INC.
Petitioner

v.

SFARA, INC.
Patent Owner

IPR2024-00952

U.S. Patent No. 8,989,952

Issue Date: March 24, 2015

Title: SYSTEM AND METHOD FOR DETECTING VEHICLE CRASH

**PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 8,989,952**

TABLE OF CONTENTS

	Page
I. Introduction.....	1
II. Grounds for Standing.....	2
III. Identification of Challenge and Statement of Relief Requested	2
A. Prior Art.....	2
B. Grounds for Challenge	3
IV. The '952 Patent.....	3
A. Overview	3
B. Prosecution History	5
C. Level of Ordinary Skill in the Art	6
V. Claim Construction.....	6
VI. Ground 1 – Green Renders Claims 1-18 Obvious.....	9
A. Overview of Green	9
B. Independent Claims	13
1. Claim 1	13
a. 1[pre]: “A device for use with a vehicle ...”	13
b. 1[a]: “a mode-determining component ...”	15
c. 1[b]-1[c]: “a first detecting component ...” and “a second detecting component ...”	20
d. 1[d]: “wherein said mode-determining component is further operable to generate a crash mode signal ...”	30
2. Claim 7	35
a. 7[pre]: “A method for use with a vehicle, said method comprising:”	35
b. 7[a]-7[b]: “detecting” and “generating” via a “mode-determining component”	36
c. 7[c]-7[f]: “detecting” and “generating” via a “[first/second] detecting component”	36

d.	7[g]: “generating, via the mode-determining component, a crash mode signal ...”	36
3.	Claim 13	36
a.	13[pre]: “A non-transitory, computer-readable media ...”	37
b.	13[a]-13[b]: “detecting” and “generating” via a “mode-determining component”	38
c.	13[c]-13[f]: “detecting” and “generating” via a “[first/second] detecting component”	38
d.	13[g]: “operating an operating component ...”	39
e.	13[h]: “generating, via the mode-determining component, a crash mode signal ...”	39
f.	13[i]: “switching operation of the operating component ...”	39
C.	Dependent Claims	40
1.	Claims 2, 3, 8, 9, 14, and 15	40
2.	Claims 4, 10 and 16	41
3.	Claims 5, 11, and 17	43
4.	Claims 6, 12, and 18	45
VII.	Ground 2 – Wright in View of Green Renders Claims 1-18 Obvious.	50
A.	Overview of Wright	50
B.	Motivation to Combine Wright and Green	52
C.	Independent Claims	55
1.	Claim 1	55
a.	1[pre]: “A device for use with a vehicle ...”	55
b.	1[a]: “a mode-determining component ...”	56
c.	1[b]-1[c]: “a first detecting component ...” and “a second detecting component ...”	61
d.	1[d]: “wherein said mode-determining component is further operable to generate a crash mode signal ...”	64
2.	Independent Claim 7	70

a.	7[pre]: “A method for use with a vehicle ...”	70
b.	7[a]-7[b]: “detecting” and “generating” via a “mode-determining component”	71
c.	7[c]-7[f]: “detecting” and “generating” via a “[first/second] detecting component”	72
d.	7[g]: “generating, via the mode-determining component, a crash mode signal ...”	72
3.	Independent Claim 13	73
a.	13[pre]: “A non-transitory, computer-readable media ...”	73
b.	13[a]-13[b]: “detecting” and “generating” via a “mode-determining component”	74
c.	13[c]-13[f]: “detecting” and “generating” via a “[first/second] detecting component”	74
d.	13[g]: “operating an operating component in a first mode”	75
e.	13[h]: “generating, via the mode-determining component, a crash mode signal ...”	75
f.	13[i]: “switching operation of the operating component ...”	76
D.	Dependent Claims	76
1.	Claims 2, 3, 8, 9, 14, and 15	76
2.	Claims 4, 10, and 16	77
3.	Claims 5, 11, and 17	79
4.	Claims 6, 12, and 18	80
VIII.	No Secondary Considerations	85
IX.	Discretionary Issues	85
A.	The Board Should Decline to Deny Institution Under <i>Advanced Bionics</i>	85
B.	The Board Decline to Deny Institution Under <i>Fintiv</i>	86
X.	Conclusion	88
XI.	Mandatory Notices	88

A.	Real Parties-in-Interest (37 C.F.R. § 42.8(b)(1))	88
B.	Related Matters (37 C.F.R. § 42.8(b)(2)).....	88
C.	Lead and Back-Up Counsel (37 C.F.R. § 42.8(b)(3)).....	89
D.	Service Information (37 C.F.R. § 42.8(b)(4))	90

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH,</i> IPR2019-01469, 2020 WL 740292 (PTAB Feb. 13, 2020)	85
<i>Apple Inc. v. Fintiv, Inc.,</i> IPR2020-00019, 2020 WL 2126495 (PTAB Mar. 20, 2020).....	86, 87
<i>Bos. Sci. Scimed, Inc. v. Cordis Corp.,</i> 554 F.3d 982 (Fed. Cir. 2009)	17, 28
<i>Bowtech v. MCP IP, LLC,</i> IPR2019-00379, Paper 14 (PTAB July 3, 2019)	86
<i>Fresenius USA, Inc. v. Baxter Int’l, Inc.,</i> 582 F.3d 1288 (Fed. Cir. 2009)	40
<i>Gillette Co. v. Energizer Holdings, Inc.,</i> 405 F.3d 1367 (Fed. Cir. 2005)	28, 63, 70
<i>Google LLC v. Pers. Audio, LLC,</i> 743 F. App’x 978 (Fed. Cir. 2018)	84
<i>Google LLC v. Wildseed Mobile, LLC,</i> IPR2023-00247, 2023 WL 3846399 (PTAB June 6, 2023)	87
<i>Phillips v. AWH Corp.,</i> 415 F.3d 1303 (Fed. Cir. 2005) (en banc)	7
<i>Samsung Elecs. Co., Ltd v. Cellect, LLC,</i> IPR2020-00476, Paper 14 (PTAB July 31, 2020)	8
<i>Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.,</i> 200 F.3d 795 (Fed. Cir. 1999)	6
Statutes	
35 U.S.C. §102(a)(2)	2, 3

35 U.S.C. §112(b) 8

35 U.S.C. §325(d) 85, 86

Other Authorities

37 C.F.R. §42.100(b) 7

LIST OF EXHIBITS

Exhibit No.	Description of Document
1001	U.S. Patent No. 8,989,952 (the “’952 patent”)
1002	Declaration of Dr. Lin Zhong (“Decl.”)
1003	Curriculum Vitae of Dr. Lin Zhong
1004	U.S. Patent No. 9,311,271 (“Wright”)
1005	U.S. Patent No. 9,390,625 (“Green”)
1006	Plaintiff’s Preliminary Infringement Contentions, <i>Cambridge Mobile Telematics, Inc. v. Sfara, Inc.</i> , No. 3:23-cv-01368 (D.N.J.) (“Infringement Contentions”)
1007	Prosecution History of the ’952 patent (“prosecution history”)
1008	<i>Cambridge Mobile Telematics, Inc. v. Sfara, Inc.</i> , No. 3:23-cv-01368 (D.N.J.), ECF No. 84, Joint Claim Construction and Prehearing Statement
1009	<i>Cambridge Mobile Telematics, Inc. v. Sfara, Inc.</i> , No. 3:23-cv-01368 (D.N.J.), ECF No. 89, Letter Order Granting Motion to Amend Schedule
1010	<i>Cambridge Mobile Telematics, Inc. v. Sfara, Inc.</i> , No. 3:23-cv-01368 (D.N.J.), ECF No. 98, Text Order Extending Discovery Deadlines

Exhibit No.	Description of Document
1011	U.S. Courts, Statistics and Reports, Table C-5, U.S. District Courts- Civil Federal Judicial Caseload Statistics (December 31, 2023), https://www.uscourts.gov/statistics/table/c-5/statistical-tables-federal-judiciary/2023/12/31 (last visited April 28, 2024).
1012	Fazeen et al, Safe Driving Using Mobile Phones, IEEE Transactions on Intelligent Transportation Systems (Volume: 13, Issue: 3, September 2012) (“Fazeen”)
1013	Mohan et al, TrafficSense: Rich Monitoring of Road and Traffic Conditions using Mobile Smartphones. Microsoft Research, April 2008.
1014	Vukajlovic et al, The Practical Design of In-vehicle Telematics Device with GPS and MEMS Accelerometers, Telfor Journal, Vol. 4, No. 2, 2012.
1015	Yilin Zhao, Telematics: Safe and Fun Driving, IEEE Intelligent Systems 2002
1016	Cook et al, Control, computing and communications: technologies for the twenty-first century model T, Proceedings of the IEEE. Vol. 95, Issue: 2, February 2007.
1017	Ching-Yao Chan, A treatise on crash sensing for automotive air bag systems, IEEE/ASME Transactions on Mechatronics. Vol. 7, Issue. 2, June 2002.
1018	Shaout et al, Automotive airbag technology: past, present and future, International Journal of Computer Applications in Technology Vol. 13, No. 3-5. Jan 1, 2000.

Exhibit No.	Description of Document
1019	Cech et al, Active Magnetic Field Based Sensing System for Improved Detection and Discrimination of Side Impact Crashes, Proceedings - 19th International Technical Conference on the Enhanced Safety of Vehicles (ESV), Washington, D.C., June 6-9, 2005, Paper Number 05-0406.
1020	Bell, Policy issues for the future intelligent road transport infrastructure, IEE Proceedings - Intelligent Transport Systems, Volume 153, Issue 2, June 2006, p. 147 – 155.
1021	Hull et al, CarTel: a distributed mobile sensor computing system, SenSys '06: Proceedings of the 4th international conference on Embedded networked sensor systems, Oct 2006, p. 125-138. https://doi.org/10.1145/1182807.1182821 .
1022	Dai et al, Mobile phone based drunk driving detection, 2010 4th International Conference on Pervasive Computing Technologies for Healthcare, IEEE, June 2010, DOI: 10.4108/ICST.PERVASIVEHEALTH2010.8901.
1023	Thompson et al, Using Smartphones to Detect Car Accidents and Provide Situational Awareness to Emergency Responders. In: Cai, Y., Magedanz, T., Li, M., Xia, J., Giannelli, C. (eds) Mobile Wireless Middleware, Operating Systems, and Applications. MOBILWARE 2010. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, vol 48. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-17758-3_3 (“Thompson 2010”)

Exhibit No.	Description of Document
1024	U.S. Patent No. 9,037,407 (“Thompson 2011”)
1025	Johnson et al, Driving Style Recognition Using a Smartphone as a Sensor Platform, 2011 14th International IEEE Conference on Intelligent Transportation Systems (ITSC), IEEE, November 2011, DOI: 10.1109/ITSC.2011.6083078.
1026	Mednis et al, Real time pothole detection using Android smartphones with accelerometers, 2011 International Conference on Distributed Computing in Sensor Systems and Workshops (DCOSS), IEEE, August 2011, DOI: 10.1109/DCOSS.2011.5982206.
1027	Eren et al, Estimating driving behavior by a smartphone, 2012 IEEE Intelligent Vehicles Symposium, IEEE, July 2012, DOI: 10.1109/IVS.2012.6232298.
1028	Fleming, Overview of Automotive Sensors, IEEE Sensors Journal, Vol. 1, No. 4, December 2001.

APPENDIX OF CLAIMS

Claim	Limitation
1[pre]	A device for use with a vehicle, said device comprising:
1[a]	a mode-determining component operable to detect whether the device is in the vehicle and to generate an in-vehicle signal;
1[b]	a first detecting component operable detect a first parameter and to generate a first detector signal based on the first detected parameter; and
1[c]	a second detecting component operable detect a second parameter and to generate a second detector signal based on the second detected parameter;
1[d]	wherein said mode-determining component is further operable to generate a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal.

Claim	Limitation
2	The device of claim 1, wherein said first detecting component is operable to detect, as the first parameter, one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.
3	The device of claim 2, wherein said first detecting component is operable to detect, as the first parameter, a parameter associated with deployment of an airbag within the vehicle.

Claim	Limitation
4	The device of claim 2, wherein said first detecting component is operable to detect, as the first parameter, acceleration along a single axis, and wherein said first detecting component is operable to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.
5	The device of claim 1, further comprising a communication component operable to wirelessly communicate with a network.
6	The device of claim 1, further comprising: an operating component operable to operate in a first mode and a second mode, wherein said operating component is operable to switch from operating in the first mode to operating in the second mode based on the crash mode signal.
7[pre]	A method for use with a vehicle, said method comprising:
7[a]	detecting, via a mode-determining component, whether the mode-determining component is in the vehicle;
7[b]	generating, via the mode-determining component, an in-vehicle signal;
7[c]	detecting, via a first detecting component, a first parameter;
7[d]	generating, via the first detecting component, a first detector signal based on the first detected parameter;
7[e]	detecting, via a second detecting component, a second parameter;

Claim	Limitation
7[f]	generating, via the second detecting component, a second detector signal based on the second detected parameter; and
7[g]	generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal.

Claim	Limitation
8	The method of claim 7, wherein said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.
9	The method of claim 8, wherein said detecting a first parameter comprises detecting a parameter associated with deployment of an airbag within the vehicle.

Claim	Limitation
10	The method of claim 8, wherein said detecting a first parameter comprises detecting acceleration along a single axis, and wherein said generating a first detector signal comprises generating the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.
11	The method of claim 7, further comprising wirelessly communicating, via a communication component, with a network.
12	The method of claim 7, further comprising: operating an operating component in a first mode; and switching operation of the operating component from the first mode to a second mode based on the crash mode signal.
13[pre]	A non-transitory, computer-readable media having computer-readable instructions stored thereon, for use with a vehicle, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method comprising:
13[a]	detecting, via a mode-determining component, whether the mode-determining component is in the vehicle;
13[b]	generating, via the mode-determining component, an in-vehicle signal;
13[c]	detecting, via a first detecting component, a first parameter;

Claim	Limitation
13[d]	generating, via the first detecting component, a first detector signal based on the first detected parameter;
13[e]	detecting, via a second detecting component, a second parameter;
13[f]	generating, via the second detecting component, a second detector signal based on the second detected parameter;
13[g]	operating an operating component in a first mode;
13[h]	generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal; and
13[i]	switching operation of the operating component from the first mode to a second mode based on the crash mode signal.

Claim	Limitation
14	The non-transitory, computer-readable media of claim 13, wherein the computer-readable instructions are capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof.

Claim	Limitation
15	The non-transitory, computer-readable media of claim 14, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting a parameter associated with deployment of an airbag within the vehicle.
16	The non-transitory, computer-readable media of claim 14, wherein the computer-readable instructions are capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting acceleration along a single axis, and said generating a first detector signal comprises generating the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.
17	The non-transitory, computer-readable media of claim 13, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method further comprising wirelessly communicating, via a communication component, with a network.
18	The non-transitory, computer-readable media of claim 13, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method further comprising: operating an operating component in a first mode; and switching operation of the operating component from the first mode to a second mode based on the crash mode signal.

Petitioner Cambridge Mobile Telematics, Inc. (“Petitioner”) seeks *inter partes* review (“IPR”) of claims 1-18 (“Challenged Claims”) of U.S. Patent No. 8,989,952 (the “’952 patent,” Ex.1001).

I. Introduction

The Challenged Claims are directed to determining whether a vehicle has crashed based on telematics data. According to the applicant and the Examiner, the purported point of novelty of the Challenged Claims was the feature that the device first “detects whether it is present in a vehicle and then generates a crash mode signal based upon the in-vehicle detection.” Ex.1007, 172. But the ability of a device to detect whether it is in a vehicle and subsequently using the in-vehicle detection as part of determining whether a crash has occurred was well known in the art before the filing of the ’952 patent.

As explained below and in the accompanying Zhong Declaration (Ex.1002), each element or combination of elements in the Challenged Claims was disclosed in or rendered obvious by the prior art and known to a person having ordinary skill in the art (“POSITA”) prior to the ’952 patent’s December 21, 2012 priority date. The Board should institute review because there is a reasonable likelihood that Petitioner will prevail on one or more of the grounds set forth herein.

II. Grounds for Standing

Petitioner certifies that the '952 patent is available for IPR and that Petitioner is not barred or otherwise estopped.

III. Identification of Challenge and Statement of Relief Requested

A. Prior Art

The '952 patent was filed on December 13, 2013 and claims earliest priority to Provisional Application Nos. 61/740,814, 61/740,831, and 61/740,851, filed on December 21, 2012. Patent Owner identifies this as the earliest priority date of the '952 patent. Ex.1006, 13. Petitioner does not acquiesce that Patent Owner is entitled to this priority date. Regardless, each of the references cited in this Petition was filed or published before December 21, 2012.

1. **U.S. Patent No. 9,390,625 to Green** ("Green"; Ex.1005), filed on September 23, 2011, is prior art to the '952 patent under AIA 35 U.S.C. §102(a)(2).¹

¹ During prosecution, the applicant and the Examiners applied AIA §102. Despite this, Patent Owner has contradictorily claimed in the related district court action that the '952 patent has an earliest priority date of December 2012, such that pre-AIA §102 would apply. Ex.1006, 13. The version of statute applied here, however, is of no consequence because both references cited by Petitioner qualify as prior art under either version.

2. **U.S. Patent No. 9,311,271 to Wright** (“Wright”; Ex.1004), which claims priority to a PCT application filed on December 15, 2011, is prior art under AIA 35 U.S.C. §102(a)(2).

These references were not considered on the record or applied by the Examiners in a rejection during prosecution of the ’952 patent. Ex.1001, References Cited; *see generally* Ex.1007.

B. Grounds for Challenge

Ground 1: Green renders claims 1-18 obvious.

Ground 2: Wright in view of Green renders claims 1-18 obvious.

IV. The ’952 Patent

A. Overview

The ’952 patent is directed to a “[s]ystem and method for detecting vehicle crash.” According to the ’952 patent, conventional crash detection methods using smartphones would often return a “false positive,” i.e., “detect[ing] a vehicle crash when there in fact has not been a vehicle crash.” ’952 patent, 3:63-66. False positives may occur, for example, “if the communication device itself is dropped by the user, and the rapid deceleration of the communication device hitting the ground emulates a rapid deceleration associated with a vehicle crash,” or “if the communication device is near some other event, that is not a vehicle crash, but that

emulates the vibrations associated with the deployment of an airbag.” *Id.*, 3:66-4:2, 4:12-15.

The ’952 patent sought to decrease the likelihood of obtaining such false positives during crash detection by first having the communication device “determine[] whether it is located in a vehicle.” *Id.*, 4:32-35. This in-vehicle determination can be made “by any known method, non-limiting examples of which include detecting parameters and comparing the detected parameters with those associated with vehicle” *Id.*, 7:38-41. For example, the ’952 patent explains that velocity, acceleration, and sound can be used to determine whether the device is in a vehicle. *Id.*, 7:41-62.

The ’952 patent further explains that the device may use two detected parameters to determine whether a crash has occurred. *Id.*, 3:35-40. The specification confirms that the types of detected parameters are well-known in the art, “non-limiting examples of which include velocity, acceleration, geodetic position, sound, temperature, vibrations, pressure, contents of surrounding atmosphere and combinations thereof.” *Id.*, 6:51-58. The patent states that “[t]he detection of at least two parameters further decreases the number of false-positive vehicle crash detections.” *Id.*, 3:41-42.

B. Prosecution History

The non-provisional application leading to the '952 patent presented 18 claims that were substantially similar to the claims that issued. Ex.1007, 27-31. The applicant agreed that the application “will be examined under the first inventor to file provisions of the AIA.” Ex.1007, 41. The Examiners therefore examined the application “under the first inventor to file provisions of the AIA.” *Id.*, 64.

The Examiners initially rejected all pending claims as obvious under §103 based on Patent Application Publication No. US 2013/0130639 to Oesterling in view of Patent Application Publication No. 2007/0021915 to Breed. Ex.1007, 65-73.

In response, the applicant did not traverse the Examiners’ rejection; instead, it amended the independent claims to require that the device “detect whether the device is in the vehicle.” *Id.*, 81, 82, 84. In its remarks, the applicant asserted that the added language captured the purported “novel aspect” of the claimed invention. *Id.*, 87. The applicant argued that, in determining whether a vehicle has been in a crash, “a determination is first made as to whether the communication device is actually in the vehicle. This determination helps avoid ‘false positive’ or erroneous crash detections.” *Id.* According to the applicant, neither Oesterling nor Breed disclosed this limitation. *Id.*, 88.

In the notice of allowance, the Examiners stated:

None of the references of record either alone or in combination teaches or suggest the following limitations as claimed in claim 1, an apparatus that **detects whether it is present in a vehicle and then generates a crash mode signal based upon the in-vehicle detection**. This limitation, in combination with the other elements of the claim, is not shown or suggested in the prior art of record.

Id., 172;² *see also id.*, 172-73.

C. Level of Ordinary Skill in the Art

A POSITA in December 2012 would have had at least a Master's degree in computer science, computer engineering, mechanical engineering, electrical engineering, physics, or a related field, and at least four years of experience in telematics or in computer engineering. To the extent necessary, a POSITA may have collaborated with others having expertise in software development, such as computer scientists or software engineers. Decl., ¶29.

V. Claim Construction

The Board need not expressly construe any term for purposes of this proceeding. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). For purposes of this Petition, Petitioner applies the plain and ordinary

² All emphasis to text and annotations to figures added unless otherwise noted.

meaning to the claim terms. 37 C.F.R. §42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

In the co-pending district court action, Petitioner and Patent Owner agreed to the plain and ordinary meaning of the following terms:

Claim Term	Construction
“in-vehicle signal”	“a signal that indicates whether the device is in a vehicle”
“crash mode signal”	“a signal that indicates detection of a vehicle crash”

The parties dispute the construction of other terms in the '952 patent. For purposes of this Petition, Petitioner has applied Patent Owner's proposed construction of the disputed claim terms.³ Specifically, Petitioner has applied the

³ In the district court litigation, the parties dispute whether certain claim terms should be interpreted as means-plus-function terms. Petitioner asserts that the “component” terms in the Challenged Claims should be means-plus-function terms governed by §112(f) and that such terms are indefinite for failure to identify corresponding structure to perform the recited functions. Ex.1008, 9-16, 21-23, 26-37. On the other hand, Patent Owner asserts that Petitioner infringes the '952 patent according to the plain and ordinary meaning of the “component” terms, which are the

following constructions proposed by Patent Owner in the district court action (Ex.1008, 17, 18, 23, 25):⁴

Claim Term	Patent Owner's Proposed Construction
“[first/second] detector signal” (claims 1, 7, 13)	Plain-and-ordinary meaning, wherein the plain-and-ordinary meaning of “[first/second] detector signal” is “a signal that corresponds to a [first/second] detected parameter”
“[first/second] mode” (claims 6, 12, 13, 18)	Plain-and-ordinary meaning, wherein the plain-and-ordinary meaning of “[first/second] mode” is “a [first/second] mode of operation”

constructions applied in this Petition. *Samsung Elecs. Co., Ltd v. Collect, LLC*, IPR2020-00476, Paper 14 at 12 (PTAB July 31, 2020) (“It is not a requirement of 37 C.F.R. 104(b)(3) that for every term for which Petitioner has proposed an express construction in related court litigation, Petitioner must propose the same construction in the Petition.”).

⁴ In the district court action, Petitioner asserts that each of the claim terms below is indefinite under 35 U.S.C. §112(b). Ex.1008, 17, 18, 23, 25.

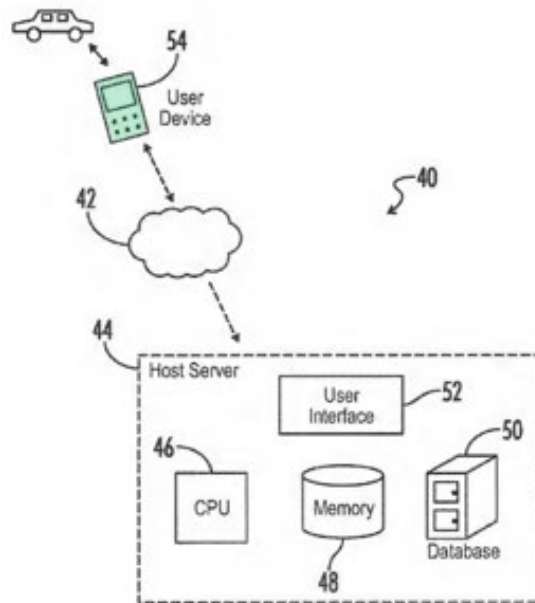
Petitioner otherwise applies the plain and ordinary meaning of the terms of the Challenged Claims.

VI. Ground 1 – Green Renders Claims 1-18 Obvious.

A. Overview of Green

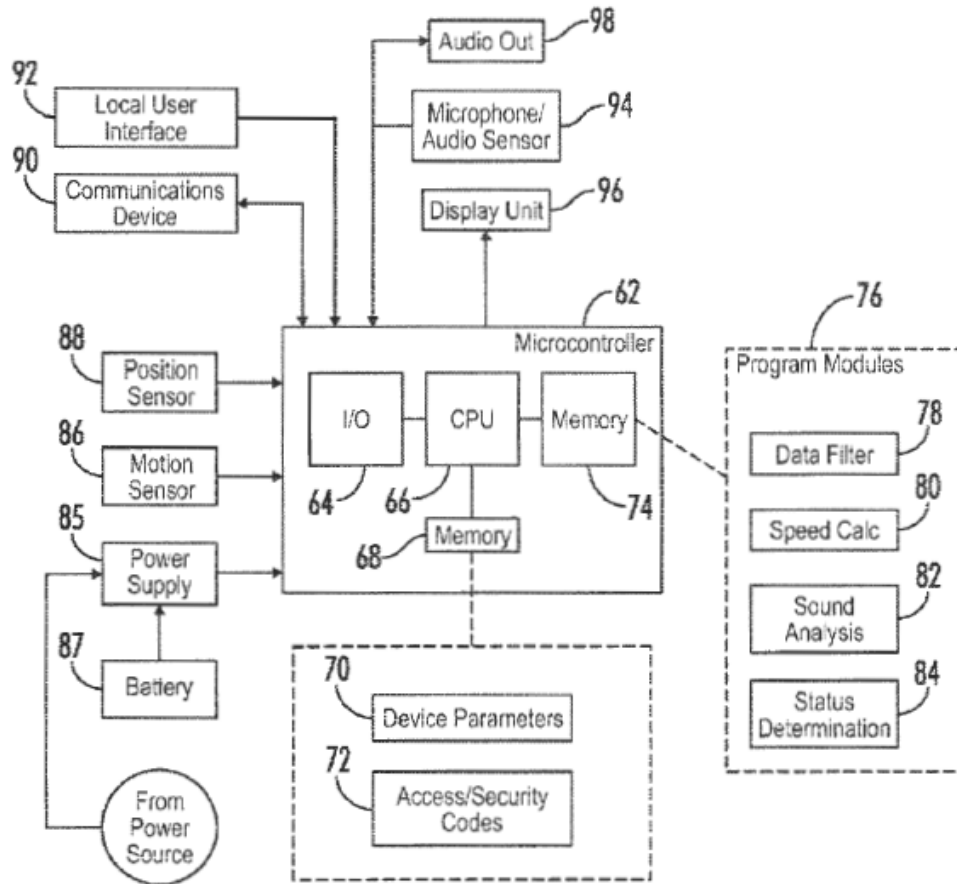
Green is directed to a “[s]ystem and method for automatic traffic accident determination and notification.” Green, Title. Green “relates to a portable onboard device for measuring data associated with a status of a vehicle, determining a status possibly including an accident or other notable event, and transmitting data or alerts based on the determined status and/or measured data.” *Id.*, 1:23-27.

As shown in Figure 10, Green discloses that the crash detection device can be a user device, for example, an Apple iPhone. *Id.*, 12:44-53. The device further includes various onboard sensors known to exist on smartphones, including, for example, an accelerometer, a gyroscope, a GPS receiver, and a microphone. *Id.*, 12:53-56.

**FIG. 10**

Id., Fig. 10.

Green discloses a local device 10 that is “a dedicated or standalone device for use in (and powered by a power source associated with) a vehicle such as for example a cigarette lighter adapter as further described below, or may be a computing device having numerous alternative uses such as for example a smartphone running a dedicated program application.” *Id.*, 5:12-18. Figure 8 shows the “various internal components of an exemplary device 10.” *Id.*, 7:13-15.

**FIG. 8**

Id., Fig. 8. The local device 10 can be a mobile device, such as a smartphone, running a dedicated program application. *Id.*, 5:12-19. Control unit 62 of device 10 may be “a conventional microcontroller having ... a memory 74 upon which resides instructions or program modules 76” *Id.*, 7:15-22. The program modules 76 include a vehicle status determination module 84, speed calculation module 80, and vehicle status determination module 84. *Id.*, 7:13-22. A POSITA would have understood that the control unit 62 executes program modules 76, including the status determination module. Decl., ¶83.

Figure 10 illustrates “an embodiment [where] the local device 10 may be replaced by a computer program product installed on and executable by a mobile cellular device 54 such as for example a smartphone ... such as for example the iPhone by Apple” *Id.*, 12:44-49.

In Figure 11, Green describes a crash detection method specifically performed by a computer program running on a user device 54. *Id.*, 13:1-5.

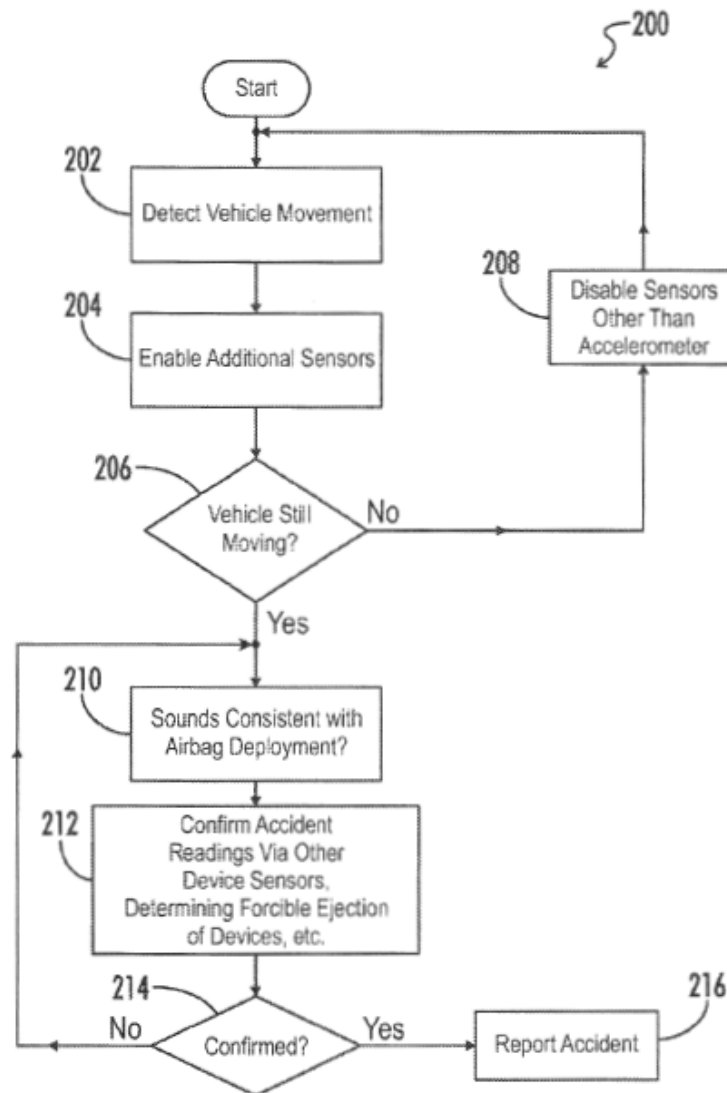


FIG. 11

Id., Fig. 11.

Green's method begins at step 202, where the mobile device confirms that it "is in fact located in a moving vehicle." *Id.*, 13:22-23. Notably, like the '952 patent, Green makes this in-vehicle determination to avoid false-positive crash determinations: "Since a mobile cellular device does not remain in a vehicle at all times, **such an assessment is necessary to avoid false positives.**" *Id.*, 13:23-26. Green explains that the in-vehicle determination "can be done by using the GPS receiver, accelerometer or various combinations of sensors to discern when conditions being experienced by the device are consistent with being in a vehicle." *Id.*, 13:26-29. Green goes on to explain that the device monitors data related to the operation of the vehicle. *Id.*, 14:4-62. When the device detects data consistent with the vehicle being involved in an accident, the device automatically contacts emergency services. *Id.*, 15:1-8.

B. Independent Claims

1. Claim 1

a. 1[pre]: "A device for use with a vehicle ..."

While Petitioner does not concede that the preamble is limiting, Green discloses the preamble of claim 1.

Green is directed to "a vehicle status awareness system [that] includes one or more **devices**," where such devices "include movement sensors which indicate

changes in movement of the **vehicle**, a position sensor which indicates a position of the **vehicle**, a communications device to send and receive data to and from a remote device and a control unit.” Green, Abstract; *see also id.*, 1:23-28 (“[T]he present invention relates to **a portable onboard device for measuring data associated with a status of a vehicle**”).

Green discloses “a computer program product installed on and executable by a mobile cellular device 54 such as for example a smartphone ... such as for example the iPhone by Apple ...”, as shown in Figure 10 below. *Id.*, 12:44-49.

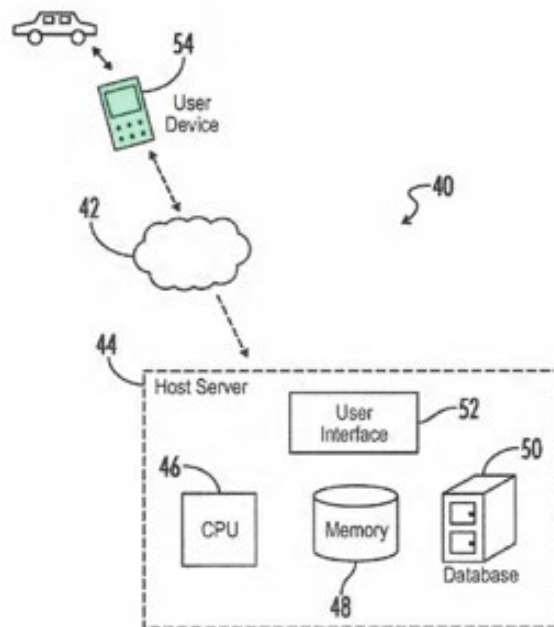


FIG. 10

Id., Fig. 10. Green also discloses a local device 10 that is “a dedicated or standalone device for use in (and powered by a power source associated with) a vehicle”

Id., 5:12-18.

Accordingly, Green discloses “[a] device for use with a vehicle.” Decl., ¶¶78-81.

b. 1[a]: “a mode-determining component ...”

Green’s vehicle status determination module 84 or computer program product executed from a smartphone (“computer program”) is each “a mode-determining component operable to detect whether the device is in the vehicle and to generate an in-vehicle signal.”

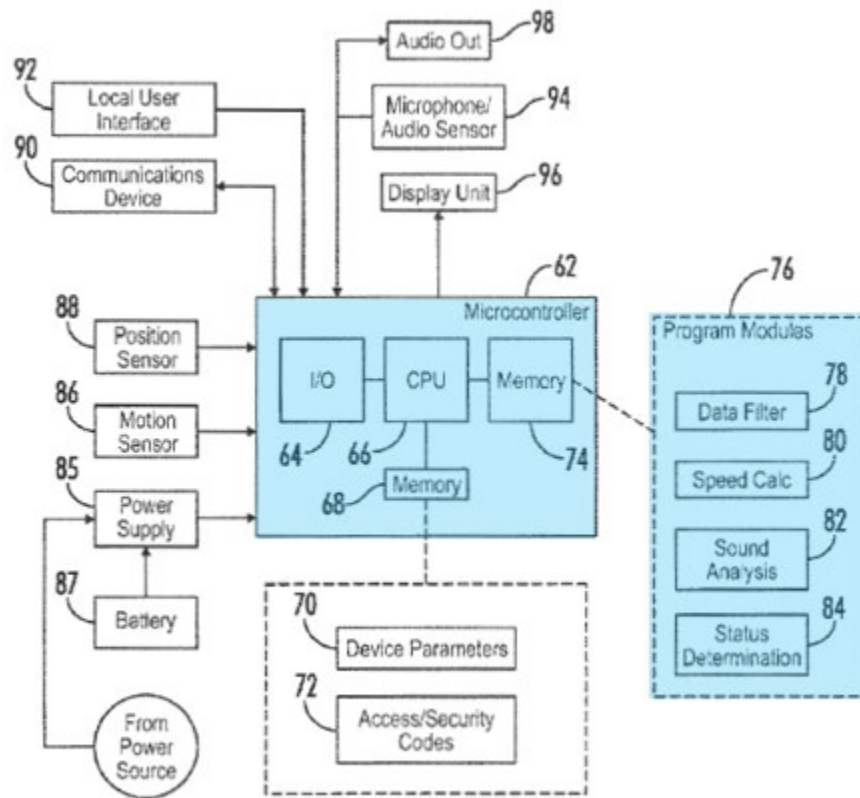


FIG. 8

Id., Fig. 8. Green’s local device 10 includes control unit 62 with “a memory 74 upon which resides instructions or program modules 76,” including a vehicle status determination module 84. *Id.*, 7:13-22, Fig. 8. A POSITA would understand that

the control unit 62 executes program modules 76, including the vehicle status determination module. Decl., ¶83.

Green explains that the disclosed method 200 of detecting a vehicle accident “may be performed by a computer program product executed from a smartphone.” Green, 13:1-4, Fig. 11.

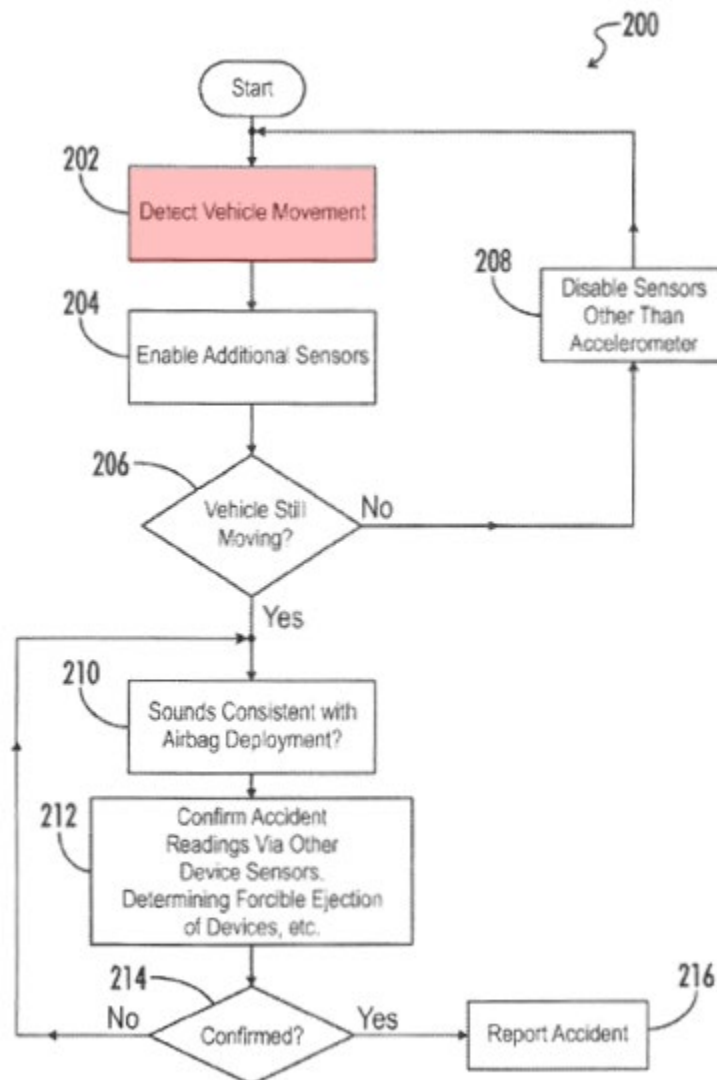


FIG. 11

Id., Fig. 11. Thus, Green discloses that the disclosed methods are performed by the computer program.

A POSITA would understand that the smartphone (i.e., user device 54 shown in Figure 10) has the same operative software components as the local device 10, shown in Figure 8, including program modules 76. *Id.* ¶84. Thus, switching the local device 10 with mobile cellular device 54 would have been a simple substitution with a reasonable expectation of success. *Id.* Green discloses that Figure 10 illustrates “an embodiment [where] the local device 10 may be replaced by a computer program product installed on and executable by a mobile cellular device 54 such as for example a smartphone ... such as for example the iPhone by Apple” Green, 12:44-49.

A POSITA would have understood that mobile cellular device would have a controller to execute program modules 76, shown in Figure 8. Decl., ¶84. Green’s “computer program product installed on and executable by a mobile cellular device 54” would operate in substantially the same manner, with the same algorithms, as the computer program executed by local device 10 (i.e., program modules 76). *Id.* Thus, a POSITA would understand that the computer program contained the same program modules 76 as local device 10 in order to perform the same methods and would have been motivated to use the functionalities of these components interchangeably. Decl., ¶84; *Bos. Sci. Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982,

991 (Fed. Cir. 2009) (“Combining two embodiments disclosed adjacent to each other in a prior art patent does not require a leap of inventiveness.”).

Alternatively, Green explicitly discloses that “local device 10 may be replaced by a computer program product installed on and executable by a mobile cellular device 54.” Green, 12:44-49. Thus, a POSITA would understand that the computer program would have been capable of executing the methods disclosed in Green—particularly the method disclosed in Figure 11. *Id.*, 13:15-21; Decl., ¶85.

Green’s vehicle status determination module 84 or computer program is each “operable to detect whether the device is in the vehicle.” Decl. ¶86-87. Green’s method 200 “begin[s] in step 202 by **confirming that the mobile device is in fact located in a moving vehicle.**” Green, 13:22-23. Like the ’952 patent, this determination is “necessary to avoid false positives” because “a mobile cellular device does not remain in a vehicle at all times.” *Id.*, 13:23-26; ’952 patent at 4:32-35, 13:22-26. The vehicle status determination module 84 or computer program determine whether the user device is in the vehicle “by using the GPS receiver, accelerometer or various combinations of sensors to discern when conditions being experienced by the device are consistent with being in a vehicle.” Green, 13:26-29.

Green discloses an example where “[t]he data from the accelerometer is used to determine when the device 54 (handset) is transported into the interior of a moving vehicle.” Green, 13:42-45. In this example, the program analyzes “velocity and

duration of velocity data, as the speed achieved in a moving vehicle coupled with the time spent at that speed is only rarely achieved outside of a moving vehicle.” *Id.*, 13:46-48. “Velocity data can be garnered by integrating the acceleration data from the accelerometer as the area under the acceleration curve.” *Id.*, 13:45-51.

Green’s vehicle status determination module 84 or computer program is each a “mode-determining component operable ... to detect whether the device is in the vehicle and to generate an in-vehicle signal.” Decl., ¶¶88-91. Green discloses that, “[i]n an effort to conserve battery life,” the program runs “passively” in the background before the determination that the device is in the vehicle. Green, 13:38-42. In this passive mode, the program “only draws data constantly from the accelerometer.” *Id.* Once the program confirms that “the device is in a moving vehicle, the other sensors will start collecting data to aid in the full functioning of the application.” *Id.*, 13:67-14:3. The device enters “active mode” when the device has determined that it is in a vehicle and “turn[s] on all of the sensors based on accelerometer data.” *Id.*, 14:4-12. The device returns to “passive mode” “[u]pon the sensors determining collectively that the device is no longer in a vehicle.” *Id.*, 14:12-15.

Green discloses that once the program determines that the device is in a moving vehicle, the device enters “active mode” and begins collecting data from all of the other sensors. Green, 13:67-14:12; Decl., ¶88. A POSITA would understand

that the computer program must generate “a signal that indicates whether the device is in a vehicle” in order to move from passive mode (only detecting signals regarding whether the mobile device is in a vehicle) to active mode (enabling additional sensors at step 204). Decl., ¶89. Even assuming Green’s device did not include a signal that the device is in a vehicle, a POSITA would have been motivated to design a device that provides such a signal in light of the disclosures in Green regarding avoidance of false accident reporting. *Id.*

Accordingly, Green discloses or renders obvious limitation 1[a]. Decl., ¶91.

c. 1[b]-1[c]: “a first detecting component ...” and “a second detecting component ...”

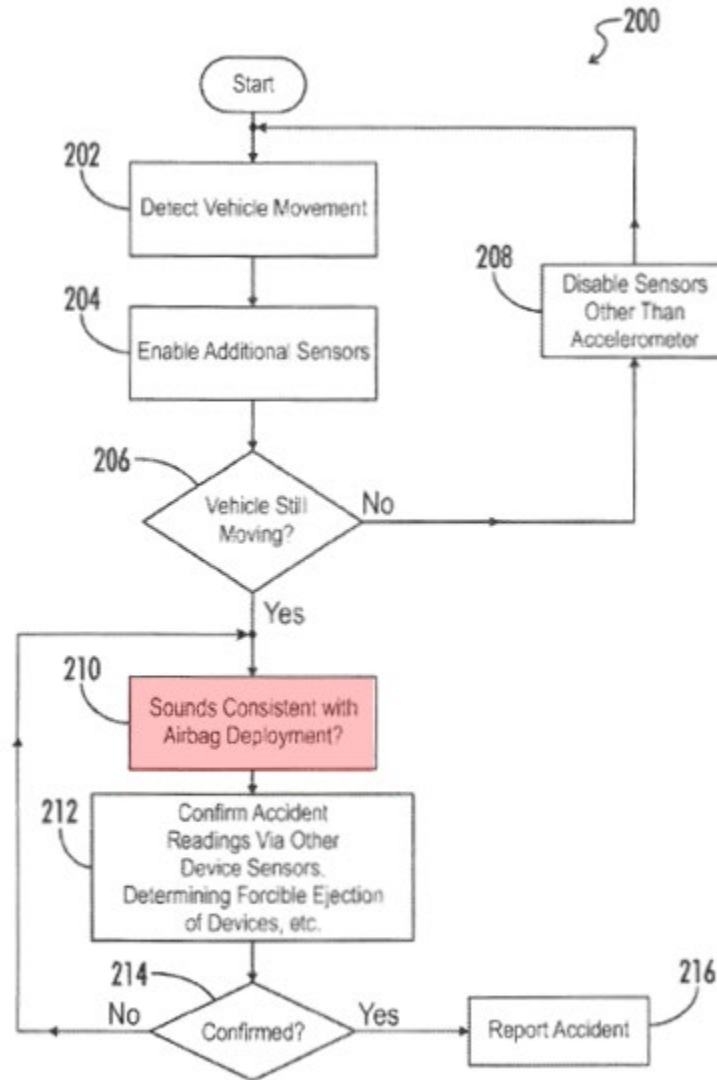
Green’s sound analysis module 82, speed calculation module 80, and the computer program is each “a [first/second] detecting component operable [to] detect a [first/second] parameter and to generate a [first/second] detector signal based on the [first/second] detected parameter.”⁵

Green’s disclosed software analyzes sensor data, for example, data related to sound and acceleration, to determine whether a vehicle has been in an accident.

⁵ Claim 1 of the ’952 patent appears to have the same typo for the “first detecting component” and “second detecting component” limitations. Petitioner interprets these limitations as including an additional “to,” i.e., “a first detecting component operable [to] detect a first parameter.”

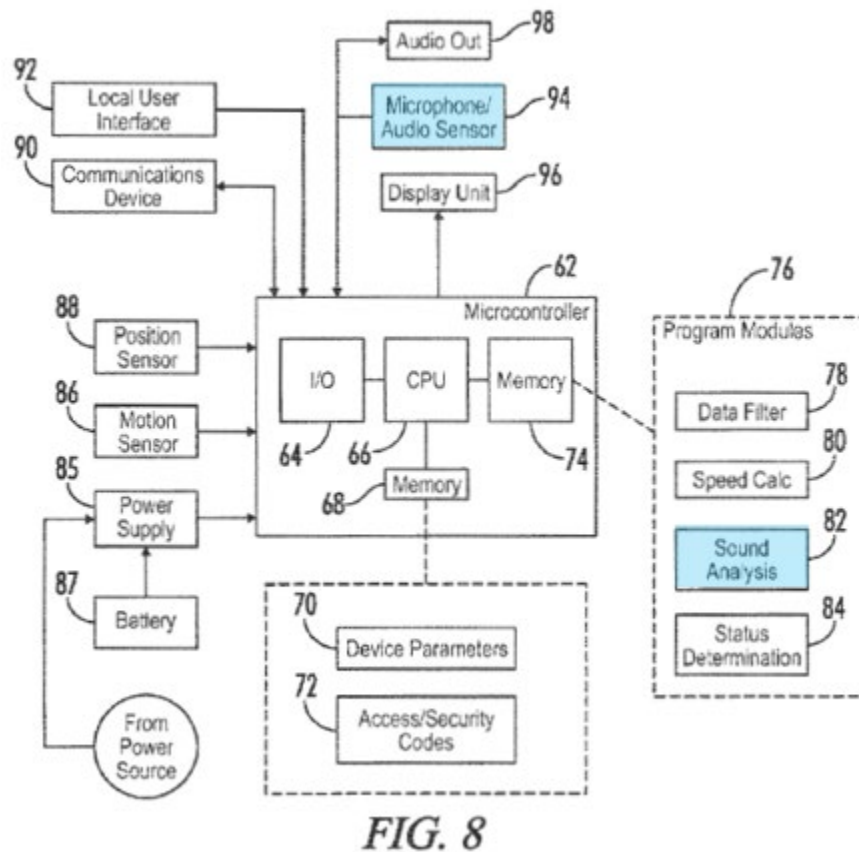
Green discloses analyzing sensor data using sound analysis module 82, speed calculation module 80, or the computer program.

Sound: Green's method detects sound. Figure 11 of Green discloses that "another method 200 of detecting a vehicle status and more particularly an accident condition, as may be performed by a computer program product executed from a smartphone, may include supplementing of movement data as described above by further using sound data." Green, 13:1-6. This is done to "eliminate false positives." *Id.*, 13:11-15. Referring to Figure 11, Green discloses that "[t]he process continues in step 210 when a sound has been detected by the program as being consistent with airbag deployment in the vehicle, while the program is in active mode." *Id.*, 14:35-38.

**FIG. 11**

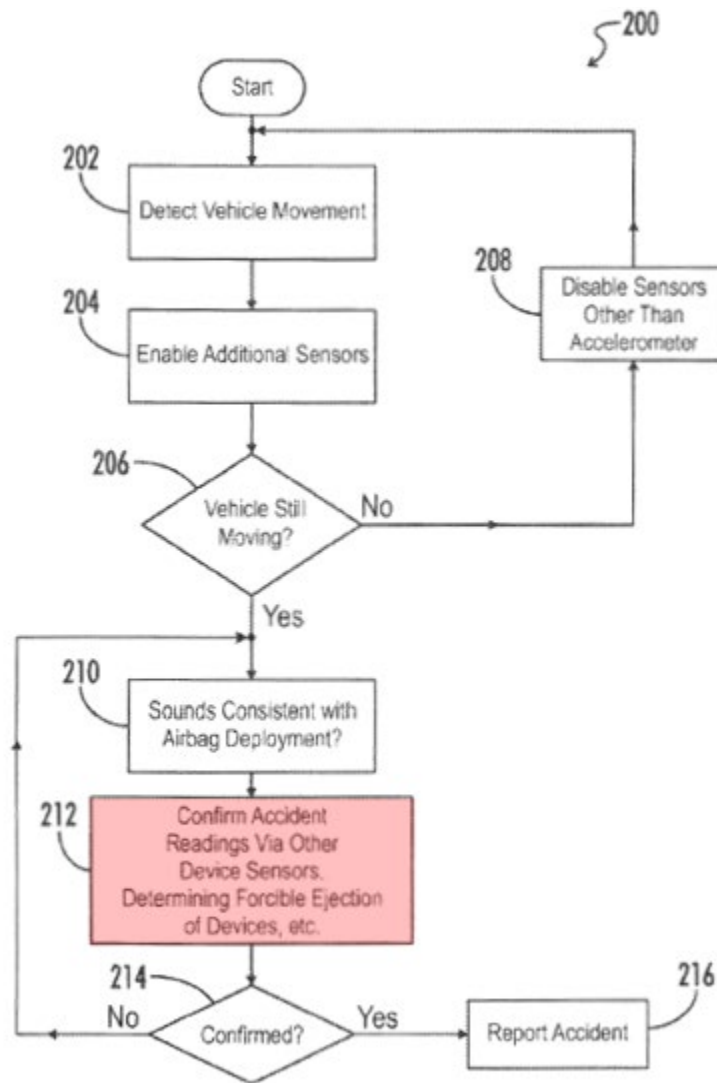
Id., Fig. 11. Green discloses that “[t]he noises/impulses that the microphone detects can be interpreted in two fashions, by analyzing the sound signature or by detecting the occurrence of a given threshold (measured in for example decibels—dB as is conventionally known in the art).” *Id.*, 14:38-42. Green’s sound analysis module 82 or the computer program both detect sound. A POSITA thus would have been motivated to use these elements interchangeably in light of their overlapping

functionality. Decl., ¶98. Accordingly, Green's sound analysis module 82 or the computer program is each "a [first/second] detecting component operable [to] detect a [first/second] parameter." Decl., ¶99.



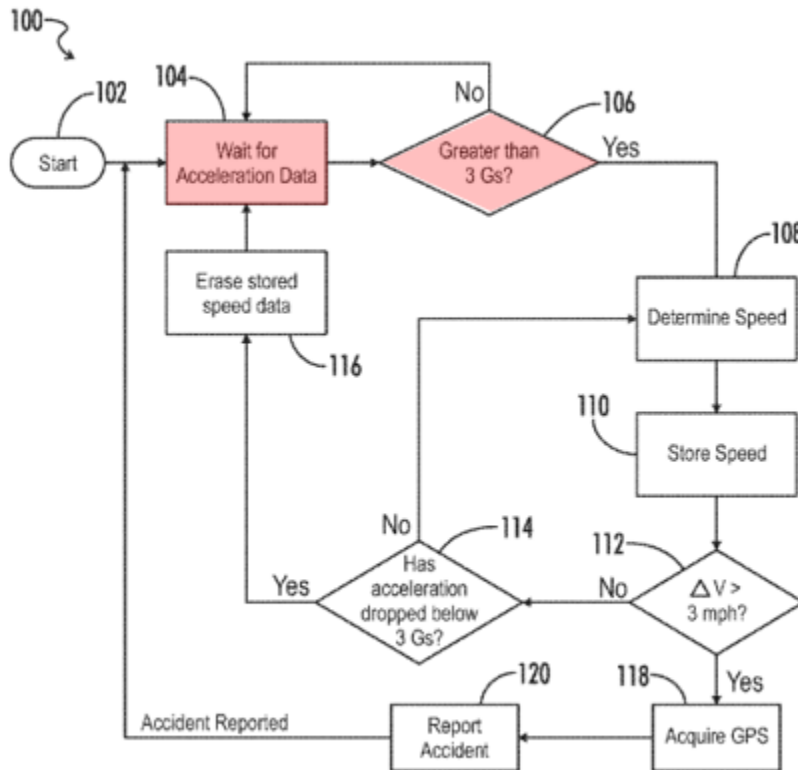
Id., Fig. 8.

Acceleration: Green's method also detects acceleration. In Figure 11, Green discloses that "in step 212 the process continues by confirming the accident reading via other device sensors such as the accelerometer, in a manner which in various embodiments may be substantially equivalent to that of the process 100 described above," in Figure 9. Green, 14:63-67.

**FIG. 11**

Id., Fig. 11.

Figure 9 of Green shows “a method 100 for determining an accident condition as a vehicle status.” *Id.*, 10:13-15. Green discloses that method 100 “may be executed in accordance with a computer program product as described above.” *Id.*, 10:15-17.

**FIG. 9**

Id., Fig. 9.

Green discloses that at step 104, “the microcontroller may begin receiving acceleration data from the accelerometer of the local device.” *Id.*, 10:25-27. Green discloses that “[i]f an acceleration reading (or alternatively a set of acceleration readings where the data may be averaged and filtered for any of various reasons) exceeds the acceleration threshold (i.e., ‘yes’ in response to the query of step 106), the process continues to step 108 and the vehicle speed may be determined.” *Id.*, 10:31-36. Green’s speed calculation module 80 or the computer program detects the exact same parameters—acceleration and speed—as one of the exemplary parameters detected by the parameter-detecting component 222 of the ’952 patent.

Decl., ¶¶105-06. A POSITA would have been motivated to use these elements interchangeably in light of their overlapping functionality. Decl., ¶107. Accordingly, Green's speed calculation module 80 or the computer program is each "a [first/second] detecting component operable [to] detect a [first/second] parameter." Decl., ¶¶108-10.

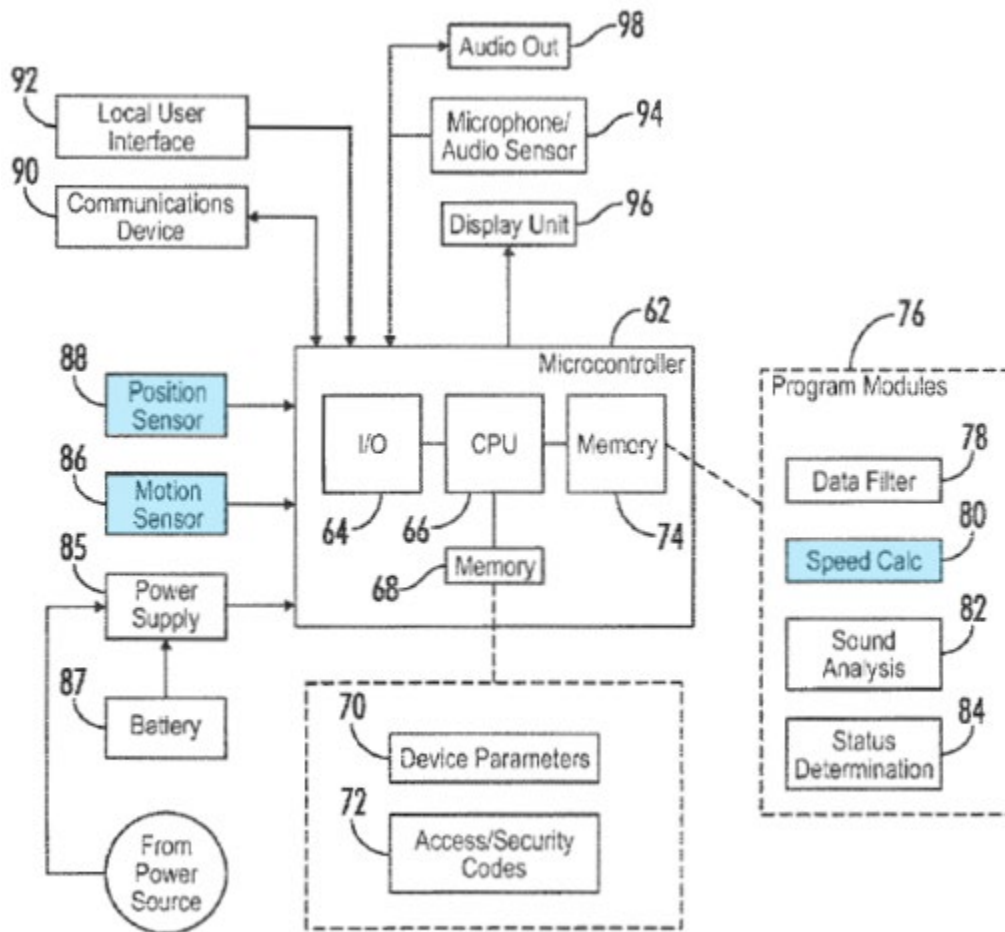


FIG. 8

Id., Fig. 8.

A POSITA would have been motivated to combine the methods shown in Figures 9 and 11, in part, because they disclose methods that Green describes as "for

determining an accident condition as a vehicle status.” *Id.*, ¶111; Green, 10:13-15 (“Referring now to FIG. 9, an exemplary embodiment of a method 100 for determining an accident condition as a vehicle status may be described.”), 13:1-2 (“Referring to FIG. 11, another method 200 of detecting a vehicle status and more particularly an accident condition”). Moreover, Green discloses that method 200 shown in Figure 11, “may include supplementing of movement data as described above by further using sound data.” *Id.*, 13:1-5. Green discloses that “[t]he previously described method 100 determined an accident based upon acceleration and rate of change in velocity readings that are consistent with an accident” *Id.*, 13:6-8. Green even describes step 212 (“Confirm Accident Readings Via Other Device Sensors, Determining Forcible Ejection of Devices, etc.”) as “confirming the accident reading via other device sensors such as the accelerometer, in a manner which in various embodiments may be substantially equivalent to that of the process 100 described above.” *Id.*, 14:63-67.

A POSITA would have been motivated, through the explicit disclosures in Green, to combine method 200 with elements of method 100. Decl., ¶111. A POSITA would have had a reasonable expectation of success in combining the methods because Green instructs the use of method 100 in conjunction with method 200. *Id.* Moreover, methods 100 and 200 are adjacent to each other and are

explicitly disclosed as being able to be combined. *Id.* Therefore, combining the two would not require a leap of inventiveness. *Bos. Sci.*, 554 F.3d at 991.

Any of sound analysis module 82, speed calculation module 80, and the computer program could be the “first” or “second” detecting component of claim 1. Decl., ¶112. The Federal Circuit has confirmed that claims using numerical terms to distinguish elements should not be interpreted to require sequential order. *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1373 (Fed. Cir. 2005) (concluding that “the ‘first,’ ‘second,’ and ‘third’ blades **need not necessarily appear in that order** or necessarily limit the blade unit to only three blades”).

Green also discloses that these detecting components are able to generate signals based on the data collected. As noted above, Petitioner interprets “[first/second] detector signal” to mean “a signal that corresponds to a [first/second] detected parameter.”

As shown in Figure 11, the output from sound analysis module 82, speed calculation module 80, and the computer program—shown in Figures 9 and 11—are critical to the next step in Green’s method.

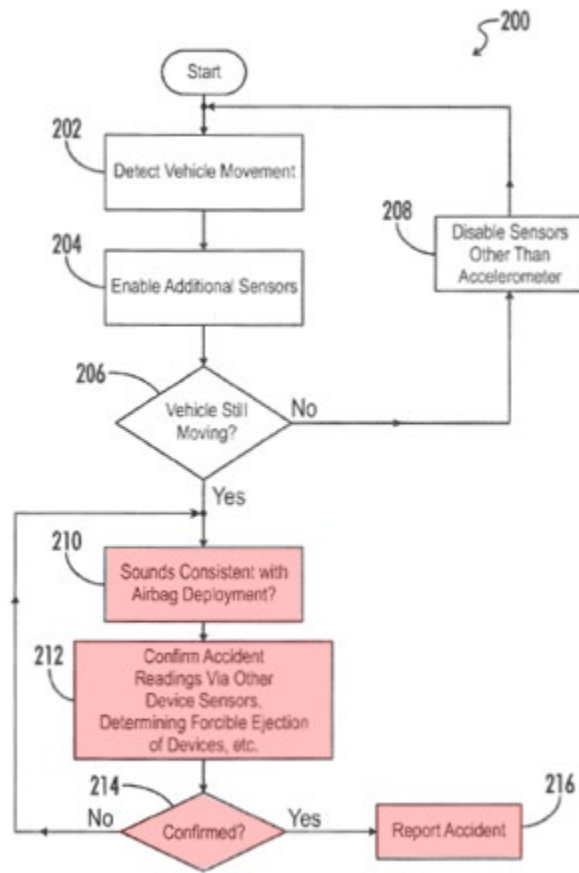


FIG. 11

Id., Fig. 11.

After the device is in active mode, “[t]he process continues in step 210 when a **sound** has been detected by the program as being consistent with airbag deployment in the vehicle.” *Id.*, 14:35-38. According to Green, “[t]he noises/impulses that the **microphone** detects can be interpreted in two fashions, by analyzing the **sound** signature or by detecting the occurrence of a given threshold (measured in for example **decibels**—dB as is conventionally known in the art).” *Id.*, 14:38-42. A POSITA would understand that this analysis is being done by sound analysis module 82 or the computer program. Decl., ¶100. Green’s method goes

from step 210 to step 212 only after this analysis has been completed, so a POSITA would understand that the sound analysis module 82 or the computer program would send a signal to trigger the advancement from one step to another. *Id.* Thus, the output of the analysis would be “a signal that corresponds to a [first/second] detected parameter.” *Id.* A POSITA would be motivated to design a device that could generate these signals to advance the process once of efficiently detecting an accident and would have had a reasonable expectation of success in doing so. *Id.*

Similarly, Green discloses that “[i]f an acceleration reading (or alternatively a set of acceleration readings where the data may be averaged and filtered for any of various reasons) exceeds the acceleration threshold (i.e., ‘yes’ in response to the query of step 106), the process continues to step 108.” *Id.*, 10:31-36. A POSITA would understand that this analysis is being done by speed calculation module 80 or the computer program. Decl., ¶110. The result of the comparison of an acceleration reading (or other calculation) to a threshold is “a signal that corresponds to a [first/second] detected parameter.” *Id.*

Accordingly, Green discloses or renders obvious limitations 1[b] and 1[c]. Decl., ¶¶92-113.

d. 1[d]: “wherein said mode-determining component is further operable to generate a crash mode signal ...”

Limitation 1[d] requires that “said mode-determining component is further operable to generate a crash mode signal based on the in-vehicle signal, the first

detector signal and the second detector signal.” As discussed in §VI.B.1.b, Green’s vehicle status determination module 84 or computer program is each a “mode-determining component” of claim 1. The vehicle status determination module 84 or computer program is each further operable to perform the functionality recited in limitation 1[d]. Decl., ¶114.

Once Green’s vehicle status determination module 84 determines that the device is in a vehicle (i.e., the in-vehicle signal is generated), the program enters “active mode.” §VI.B.1.b.

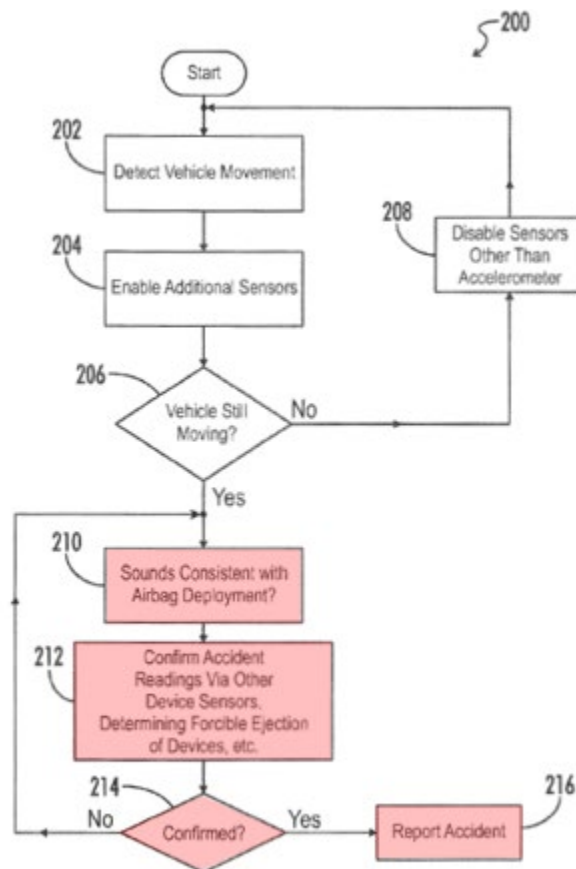


FIG. 11

Green, Fig. 11.

Referring to Figure 11, Green discloses that “[t]he process continues in step 210 when a sound has been detected by the program as being consistent with airbag deployment in the vehicle, while the program is in active mode.” *Id.*, 14:35-38. Green discloses that “sound detection may desirably be used in conjunction with other data points to detect a crash” because smartphone microphones generally “are [not] sensitive enough to accurately measure the pressures/impulses/noises generated by airbag deployment sensor set collects data.” Green’s method transitions from step 210 to step 212 only after this analysis has been completed, so a POSITA would understand that the mode determining component would need to send a signal to trigger advancement from one step to the other. §VI.B.1.c. Thus, the output of the analysis is “a signal that corresponds to a [first/second] detected parameter.” *Id.* A POSITA would have been motivated to design a device that sent these signals in order to detect and report an accident efficiently, as discussed in Green. *Id.*

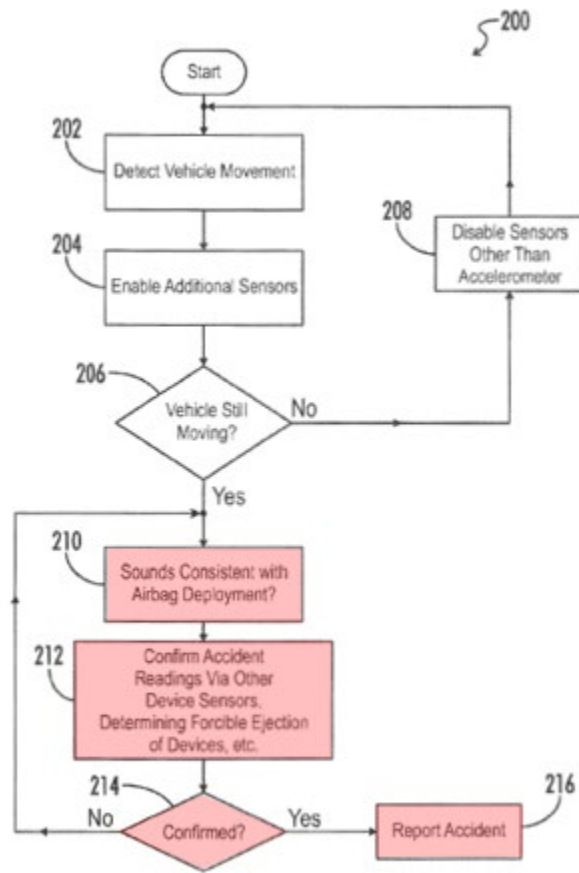


FIG. 11

Id., Fig. 11.

Green further discloses that “the process continues by confirming the accident reading via other device sensors such as the **accelerometer**” *Id.*, 14:63-65. “**If the detected accident condition is in fact confirmed by other sensors** (i.e., ‘yes’ in response to the query of step 214) the process continues to step 216 and the program is triggered to report the accident” *Id.*, 15:3-6. Speed calculation module 80 or the computer program analyzes the accelerometer data and outputs a “[first/second] detector signal.” §VI.B.1.c.

Green discloses that, “[i]f the detected accident condition is in fact confirmed by other sensors (i.e., ‘yes’ in response to the query of step 214) the process continues to step 216 and the program is triggered to report the accident in a manner which in various embodiments may be substantially equivalent to that of the process 100 described above.” *Id.*, 15:3-8. Thus, once the accident is confirmed, the device switches to operating in “crash mode,” and Green’s mobile device performs actions such as “reporting the accident pursuant to programmed instruction by for example transmitting vehicle position data and other programmed data to predetermined personnel such as EMS, family, friends, etc.” *Id.*, 10:62-11:4.

In other words, the vehicle status determination module 84 or computer program generates a determination that the vehicle has been involved in a crash that is communicated to the rest of the system (“crash mode signal”) in order to, for example, trigger the device to contact emergency services. Decl., ¶¶117-20. Green’s “crash mode signal” is “based on the in-vehicle signal, the first detector signal and the second detector signal” because it is generated (1) only after an in-vehicle determination has been made and (2) based on the parameters detected by the “detecting components” discussed above. Decl., ¶121.

The generation of the “crash mode signal” by Green is consistent with the disclosure of the ’952 patent. *Id.* The ’952 patent describes “crash mode to be such a mode wherein predetermined functions of device 202 may be activated, such as

automatically contacting emergency services.” ’952 patent, 14:36-39. Like the ’952 patent, Green discloses automatically contacting emergency services after a crash has been determined. Thus, a POSITA would understand that the vehicle status determination module 84 or computer program “is operable to generate a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal.” Decl., ¶¶120-21.

Accordingly, Green discloses or renders obvious limitation 1[d].

2. Claim 7

Claim 7 is directed to the method performed by the device of claim 1. As explained in more detail below, Green renders claim 7 obvious in largely the same manner as it does claim 1.

a. 7[pre]: “A method for use with a vehicle, said method comprising:”

Green is directed to a “[s]ystem and **method** for automatic traffic accident determination and notification.” In Figure 11, Green discloses a “**method** 200 of **detecting a vehicle status** and more particularly an accident condition, as may be performed by a computer program product executed from a smartphone” Green, 13:1-4; §VI.B.1.b. Accordingly, Green discloses “[a] method for use with a vehicle.” Decl., ¶¶163-65.

b. 7[a]-7[b]: “detecting” and “generating” via a “mode-determining component”

Limitations 7[a]-7[b] recite that the “mode-determining component” performs the same functionality set forth in limitation 1[a]. Accordingly, Green discloses or renders obvious limitations 7[a]-7[b] for the same reasons as limitation 1[a]. §VI.B.1.b; Decl., ¶¶166-68.

c. 7[c]-7[f]: “detecting” and “generating” via a “[first/second] detecting component”

Limitations 7[c]-7[d] recite that the “first detecting component” performs the same functionality set forth in limitation 1[b]. Limitations 7[e]-7[f] recite that the “second detecting component” performs the same functionality set forth in limitation 1[c]. Accordingly, Green discloses or renders obvious limitations 7[c]-7[f] for the same reasons as limitations 1[b]-[1c]. §VI.B.1.c; Decl., ¶¶169-74.

d. 7[g]: “generating, via the mode-determining component, a crash mode signal ...”

Limitation 7[g] recites that the “mode-determining component” performs the same functionality set forth in limitation 1[d]. Accordingly, Green discloses or renders obvious limitation 7[g] for the same reasons as limitation 1[d]. §VI.B.1.d; Decl., ¶¶175-77.

3. Claim 13

Claim 13 is directed to a non-transitory, computer-readable media containing instructions to be performed by the device of claim 1, rather than the device itself.

As explained in more detail below, Green renders claim 13 obvious in largely the same manner as it does claim 1.

a. 13[pre]: “A non-transitory, computer-readable media ...”

With reference to Figure 10, Green discloses an embodiment where the disclosed crash detection device, i.e., for use with a vehicle, may be “**a computer program product installed on and executable** by a mobile cellular device 54 such as for example a smartphone.” Green, 12:44-47. In this context, a POSITA would understand that the local device 10 or the mobile user device contains a computer processor along with a non-transitory, computer-readable media, i.e., a storage device, having computer-readable instructions to be performed by the processor. Decl., ¶199. Indeed, Green discloses in Figure 8 that the device includes a control unit 62 that has, among other things, “a processing unit 66” and “a memory 74 upon which resides instructions or program modules 76 such as for example a data filtering module 78, a speed calculation module 80, a sound analysis module 82 and a vehicle status determination module 84.” Green, 7:13-22.

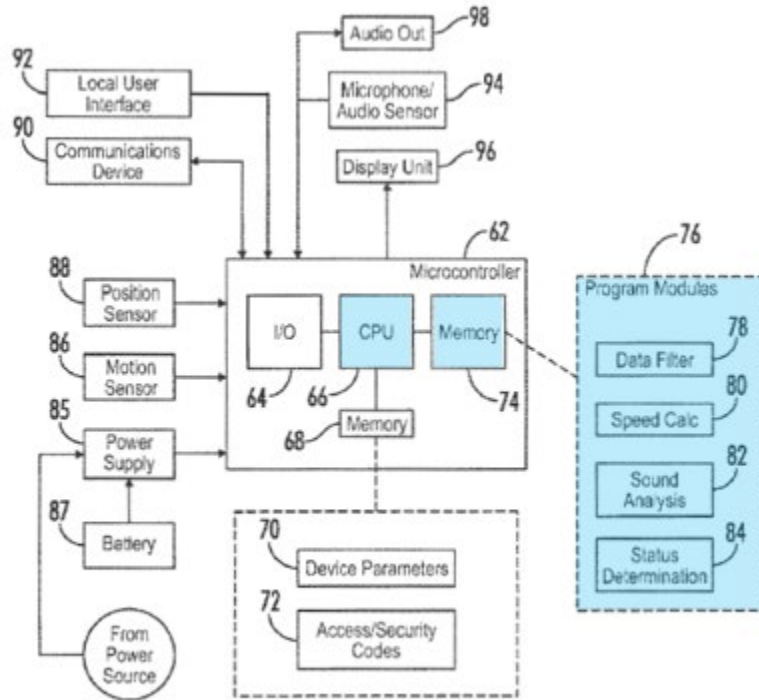


FIG. 8

Id., Fig. 8. Accordingly, Green discloses the preamble of claim 13. Decl., ¶200.

b. 13[a]-13[b]: “detecting” and “generating” via a “mode-determining component”

Limitations 13[a]-13[b] recite that the “mode-determining component” performs the same functionality set forth in limitation 1[a]. Accordingly, Green discloses or renders obvious limitations 13[a]-13[b] for the same reasons as limitation 1[a]. §VI.B.1.b; Decl., ¶¶201-03.

c. 13[c]-13[f]: “detecting” and “generating” via a “[first/second] detecting component”

Limitations 13[c]-13[d] recite that the “first detecting component” performs the same functionality set forth in limitation 1[b]. Accordingly, Green discloses or renders obvious limitations 13[c]-13[d] for the same reasons as limitation 1[b].

Limitations 13[e]-13[f] recite that the “second detecting component” performs the same functionality set forth in limitation 1[c]. Accordingly, Green discloses or renders obvious limitations 13[c]-13[f] for the same reasons as limitations 1[b]-1[c]. §VI.B.1.c; Decl., ¶¶204-09.

d. 13[g]: “operating an operating component ...”

Limitation 13[g] recites that the “operating component” performs the same functionality, i.e., operating in a first mode, that is recited in claim 6. Accordingly, Green discloses or renders obvious limitation 13[g] for the same reasons as claim 6. §VI.C.4; Decl., ¶¶210-12.

e. 13[h]: “generating, via the mode-determining component, a crash mode signal ...”

Limitation 13[h] recites that the “mode-determining component” performs the same functionality set forth in limitation 1[d]. Accordingly, Green discloses or renders obvious limitation 13[h] for the same reasons as limitation 1[d]. §VI.B.1.d; Decl., ¶¶213-15.

f. 13[i]: “switching operation of the operating component ...”

Limitation 13[i] recites that the “operating component” performs the same functionality, i.e., switching operation from the first mode to a second mode based on the crash mode signal, that is recited in claim 6. Accordingly, Green discloses or

renders obvious limitation 13[i] for the same reasons as claim 6. §VI.C.4; Decl., ¶¶214-16.

C. Dependent Claims

1. Claims 2, 3, 8, 9, 14, and 15

Claims 2, 8, and 14 require that “said first detecting component is operable to detect, as the first parameter, one of the group consisting of” a number parameters, including “acceleration in any of three dimensions... sound ... change in acceleration in any of three dimensions, ... [and] a change in sound”⁶ Claims 3, 9, and 15 require “detecting a parameter associated with deployment of an airbag within the vehicle.”

Each of Green’s sound analysis module 82, speed calculation module 80, and computer program is each a “first detecting component.” §VI.B.1.c. Sound analysis module 82 or the computer program is each operable to detect sound and change in sound, both of which are parameters listed in claims 2, 8, and 14. Decl., ¶¶126-27.

⁶ The listing of possible parameters in these claims is structured as a Markush group. A Markush group is obvious if any of the options in the list is obvious. *Fresenius USA, Inc. v. Baxter Int’l, Inc.*, 582 F.3d 1288, 1298 (Fed. Cir. 2009) (“[T]he entire element is disclosed by the prior art if one alternative in the Markush group is in the prior art.”).

Further, speed calculation module 80 or the computer program is each operable to detect acceleration in any of three dimensions and a change in acceleration in any of three dimensions. Decl., ¶¶128-29, 177-79, 217-20.

Additionally, Green's method includes a step 210 wherein "a sound has been detected by the program as being consistent with **airbag deployment in the vehicle**, while the program is in active mode." Green, 14:38-42.

Accordingly, Green renders obvious claims 2, 3, 8, 9, 14, and 15. Decl., ¶¶124-34, 178-185, 219-226.

2. Claims 4, 10 and 16

Claims 4, 10, and 16 further require that "said first detecting component is operable to detect, as the first parameter, acceleration along a single axis, and wherein said first detecting component is operable to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value."

Green's speed calculation module 80 or computer program is each a "a first detecting component operable [to] detect a first parameter and to generate a first detector signal based on the first detected parameter." §VI.B.1.c.

With reference to Figure 11, Green states that "in step 212 the process continues by confirming the accident reading via other device sensors such as the accelerometer, in a manner which in various embodiments may be substantially

equivalent to that of the process 100 described above.” Green, 14:63-67. With reference to process 100, Green discloses, for example, that a crash determination can be made, in part, by detecting whether “[i]f at any point a vehicle acceleration reading is determined to be greater than the first threshold [of 3 Gs],” which is indicative of an accident. *Id.*, 10:62-11:4.

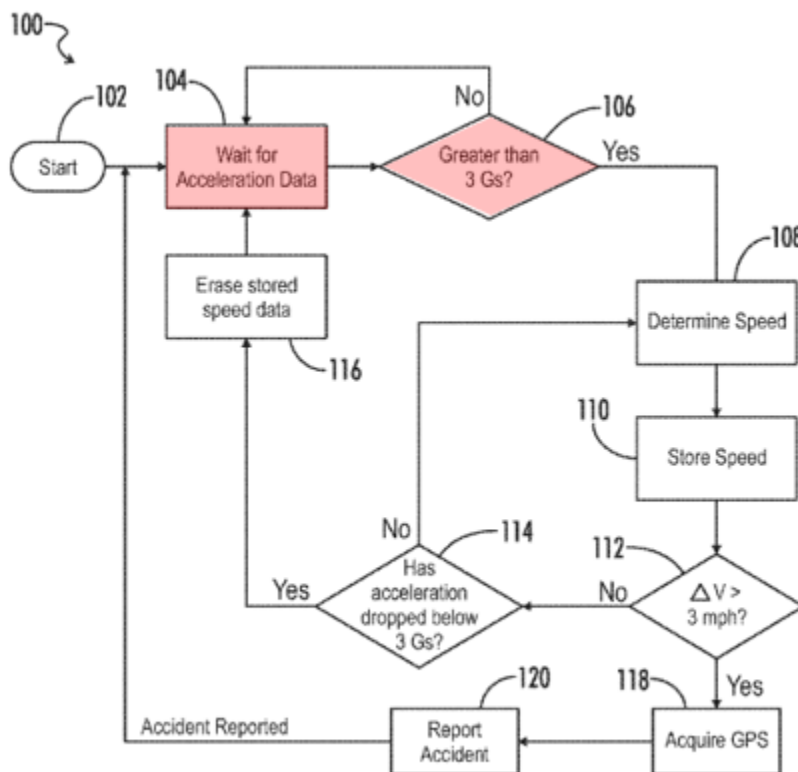


FIG. 9

Id., Fig. 9. To determine whether the acceleration is greater than 3 Gs, a POSITA would understand that the speed calculation module 80 or computer program is each detecting and analyzing acceleration data (i.e., generating the “first detector signal,” when the detected acceleration is equal to or greater than a predetermined value—in this case, 3 Gs. Decl., ¶140.

Accordingly, Green teaches that the speed calculation module 80 or computer program is each “operable to detect, as the first parameter, acceleration along a single axis, and wherein said first detecting component is operable to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.” Green renders obvious claims 4, 10, and 16. Decl., ¶¶135-141, 186-90, 227-31.

3. Claims 5, 11, and 17

Claims 5, 11, and 17 require that the device include “a communication component operable to wirelessly communicate with a network.”

Referring to Figure 8, Green discloses that “residing within or about the device housing(s) 10 and functionally linked to the controller 62 may be without limitation ... a communications device 90 such as a cellular modem” Green, 7:40-47. Green further discloses that “the audio output 98 may be effective to provide real-time voice functionality in addition to programmed alerts, such as may be desirable in the event of an emergency by providing emergency personnel, 911 operators, etc., with a direct outlet for communicating via the local device with a driver.” *Id.*, 7:50-55.

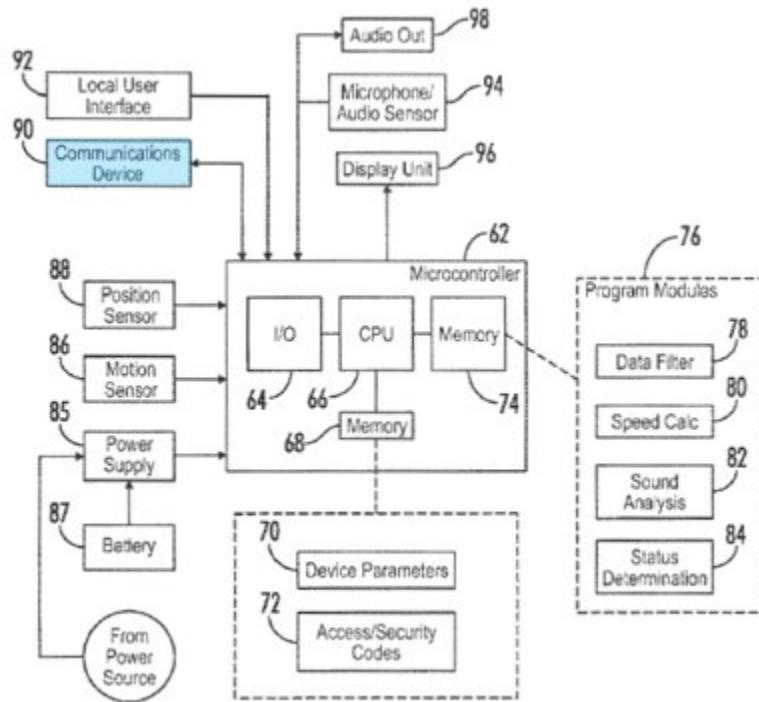


FIG. 8

Id., Fig. 8.

Referring to Figure 11, Green discloses that the “process continues to step 216 and the program is triggered to report the accident in a manner which in various embodiments may be substantially equivalent to that of the process 100 described above” in Figure 9. Green, 15:5-8. With respect to Figure 9, Green discloses “transmitting vehicle position data and other programmed data to predetermined personnel such as EMS, family, friends, etc.” *Id.* 10:62-11:4.

Moreover, as shown in Figure 10, Green’s device may comprise a smartphone that can communicate over a communications network 42. Green explains that the term “communications network” may refer to a “telecommunications networks

(whether wired, **wireless**, **cellular** or the like)” or “a global network such as the Internet.” *Id.*, 6:9-18.

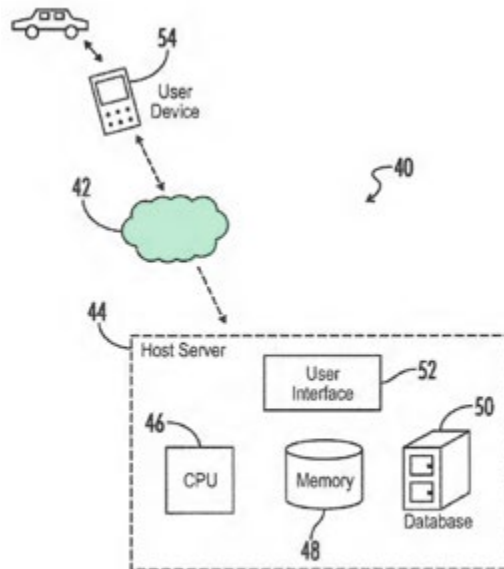


FIG. 10

Id., Fig. 10.

A POSITA would understand that Green’s communications device 90 (e.g., a cellular modem) and the user device 54 are capable of wirelessly communicating with communications network 42 (e.g., wireless telecommunications networks, the Internet) to, for example, report an accident. Decl., ¶¶144-49.

Accordingly, Green renders obvious claims 5, 11, and 17. *Id.*, ¶¶ 142-150, 191-93, 232-34.

4. Claims 6, 12, and 18

Claims 6, 12, and 18 require “an operating component operable to operate in a first mode and a second mode, wherein said operating component is operable to

switch from operating in the first mode to operating in the second mode based on the crash mode signal.”⁷

In Green, once the mobile device has been confirmed to be in a vehicle (at step 202), it transitions from passive mode to “active mode,” whereby the onboard sensors are collecting data and running the crash detection algorithm set forth in Figure 11. Green, 14:4-7 (“Even when the program is executed and fully functioning in ‘active mode,’ it may continue to check data from the sensors to confirm that it is, in reality, in a moving vehicle (step 206).”). A POSITA would understand that Green’s “active mode” is a “first mode,” i.e., “a first mode of operation.” Decl., ¶154.

Once a crash has been detected (i.e., when the “crash mode signal” has been generated), the local device 10 and user device 54 are configured to perform various predetermined actions, such reporting an accident, as shown in Figure 11 below. At that point, Green’s mobile device is operating in a “second mode,” i.e., “a second mode of operation.” Decl., ¶¶155-56.

⁷ Petitioner reserves the right to argue that claims 6, 12, and 18 lack written description support under §112 in a different forum, as the ’952 patent specification never uses or defines the term “operating component.”

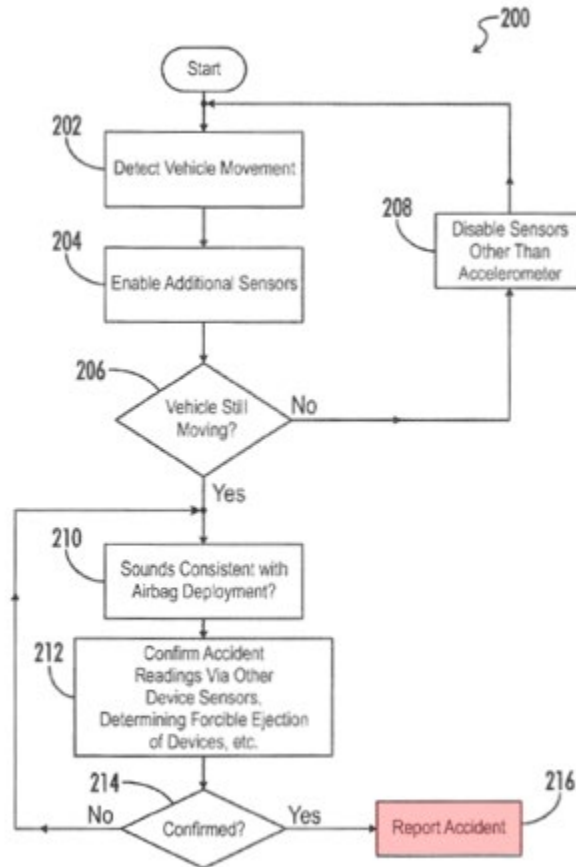


FIG. 11

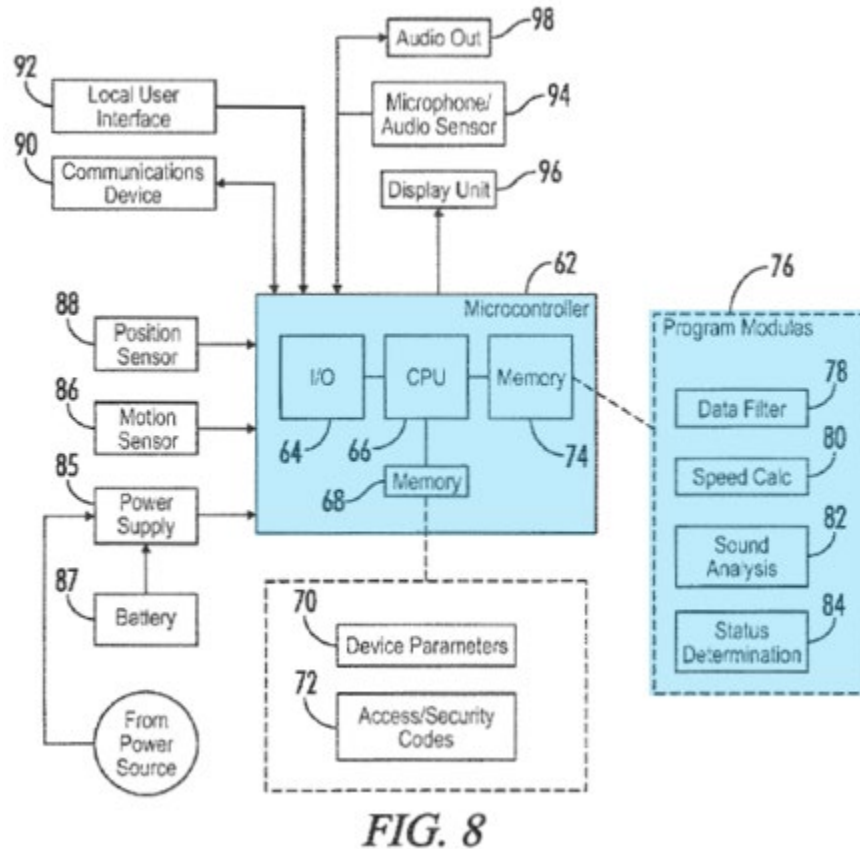
Green, Fig. 11.

In Green, “[i]f the detected accident condition is in fact confirmed by other sensors (i.e., ‘yes’ in response to the query of step 214) the process continues to step 216 and the program is triggered to **report the accident** in a manner which in various embodiments may be substantially equivalent to that of the process 100 described above.” *Id.*, 15:3-8. Thus, once operating in “crash mode,” Green’s mobile device performs actions such as “**reporting the accident** pursuant to programmed instruction by for example **transmitting vehicle position data and other programmed data to predetermined personnel such as EMS, family, friends,**

etc.” *Id.*, 10:62-11:4.

Based on the disclosures of the '952 patent, Green's mobile device taking predetermined actions once a crash has been detected constitutes operating in a “second mode” (called the “crash mode” in the '952 patent) as recited in claim 6. Decl., ¶157. In particular, the '952 patent states: “[F]or purposes of discussion, let the crash mode be such a mode wherein predetermined functions of device 202 may be activated, such as automatically contacting emergency services.” '952 patent, 14:36-39. Thus, a POSITA would understand that its “second mode” corresponds to the “crash mode” of the '952 patent. Decl., ¶157.

As disclosed in Green, the computer program is the component that controls the functionality of the mobile device; as shown in Figure 8 below, all other components of the mobile device, including the program modules 76, the sensors, and the communications module, operate through the control unit 62. Decl., ¶158.



Id., Fig. 8.

Accordingly, the computer program in Green would also control the mode of operation of the mobile device and, thus, would operate as an “operating component.” Decl., ¶159. A POSITA would understand that such a component can be implemented in a device’s central processor, via the control unit 62. *Id.*, ¶160. Thus, multiple components, including the “operating component,” may exist in the computer program. *Id.* A POSITA would have been motivated to use any of these components as an operating component to switch from a first mode to a second mode based on the crash mode signal with a reasonable expectation of success. *Id.*

Green renders obvious claims 6, 12, and 18. *Id.*, ¶¶ 151-161, 194-96, 235-37.

VII. Ground 2 – Wright in View of Green Renders Claims 1-18 Obvious.**A. Overview of Wright**

Wright is directed to “methods and systems for logging driving information associated with vehicle behaviour.” Wright, 1:17-19. Wright describes “a mobile telecommunications device for recording events associated with a vehicle, such as a car.” *Id.*, 12:56-58. Wright discloses a mobile device with modular components that function to accomplish the described method. *Id.*, 15:16-17.

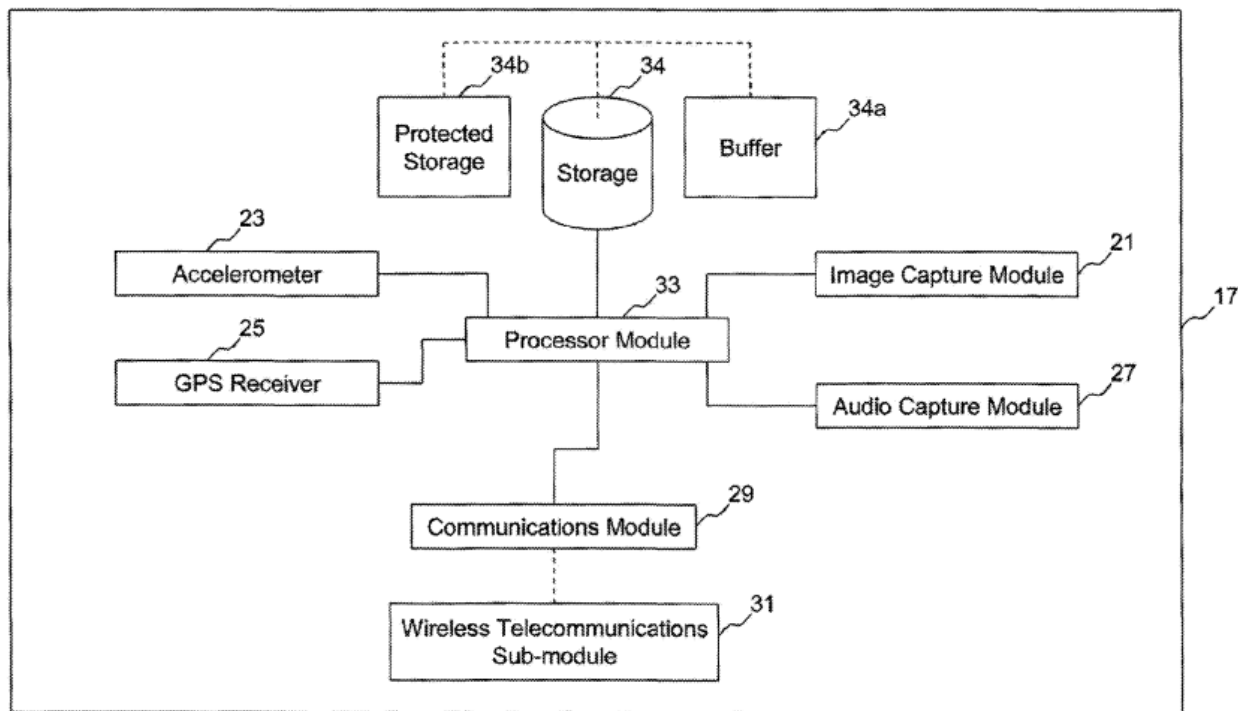


Fig .3

Id., Fig. 3.

Wright’s mobile device includes “data capture modules,” that include “an image capture module 21, an accelerometer 23, a GPS receiver 25, [and] an audio capture module 27.” *Id.*, 15:17-24. The data gathered by the data capture modules,

also known as sensor data, is “processed by the processor module 31 and stored in the storage module 33.” *Id.*, 15:29-31.

Wright describes a method carried out by the mobile device to determine if a driving incident has occurred. *Id.*, 18:8-11.

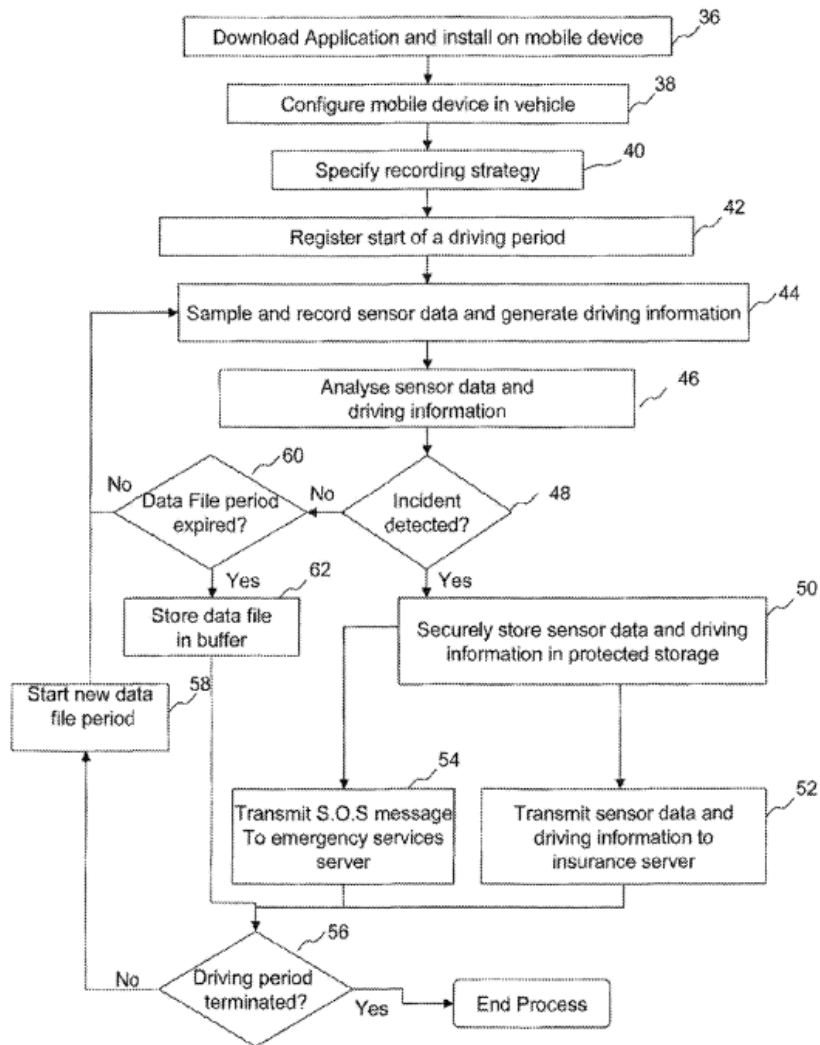


Fig. 4a

Id., Fig. 4a.

Wright’s method includes a step in which “[t]he start of a driving period is registered The start of the driving period determines when the recording of

sampled sensor data begins.” *Id.*, 18:30-32. The device monitors its surroundings until it detects that it is in a vehicle. *Id.*, 18:34-38 (“For example, **the mobile device 17 may be configured to initiate the driving period once sensor data above a minimum threshold value is recorded, indicative of the vehicle being in motion.** For example, once a velocity greater than 20 kilometers per hour is detected.”). Once in driving mode, the device of Wright monitors and processes various sensor data. *Id.*, 18:49-54. When the system detects that the vehicle has been in an accident, the device automatically generates a signal to emergency services. *Id.*, 19:47-53.

B. Motivation to Combine Wright and Green

A POSITA would have been motivated to combine the teachings of Wright and Green to more accurately and efficiently determine whether a mobile device is in a vehicle before registering the start of a driving period to collect sensor data. Decl., ¶238.

Like the ’952 patent, Wright and Green are both directed to using a mobile device to determine whether a vehicle crash has occurred, so a POSITA would look to the teachings of both references to see what improvements can be made to Wright’s invention. *Id.*, ¶239; Wright, 1:19-24; Green, Title.

One aspect of Wright’s invention that a POSITA would try to improve is the determination of when the mobile device is in a vehicle such that the start of a driving period should be registered. Decl., ¶240. Wright discloses, as one example, that the

driving period may be initiated “once a velocity greater than 20 kilometers per hour is detected.” Wright, 18:35-39. This example determination in Wright is similar to the AT&T DriveMode application discussed in the ’952 patent, in which an in-vehicle determination is made when “the smartphone GPS sensor senses that the smartphone is travelling at greater than 25 miles per hour.” ’952 patent, 2:6-11.

A POSITA would know that DriveMode’s determination has drawbacks. Decl., ¶241. For example, the ’952 patent explains that “the speed threshold of the application is arbitrary, meaning that drive mode will not be detected/engaged at less than 25 mph. If the vehicle is stopped in traffic or at a traffic signal, for example, then the DriveMode application may inadvertently terminate.” *Id.*, 2:21-25. Additionally, “and perhaps more importantly, AT&T’s DriveMode application requires that the smartphone’s GPS functionality be turned on at all times[,]” which is “extremely demanding to the battery resources of a smartphone” *Id.*, 2:25-31.

Given these concerns, a POSITA implementing Wright’s invention would have looked for other more accurate and efficient ways to determine whether the smartphone is in a vehicle. Decl., ¶242. Green provides one such known alternative—namely, using accelerometer data “to determine when the device ... is transported into the interior of a moving vehicle.” Green, 13:42-45. Green explains that “[t]his change in environment can be discovered using **velocity and duration of velocity data**, as the speed achieved in a moving vehicle coupled with the time

spent at that speed is only rarely achieved outside of a moving vehicle. Velocity data can be garnered by integrating the acceleration data from the accelerometer as the area under the acceleration curve is the velocity.” *Id.*, 13:45-51. Green also discloses “continu[ing] to check data from the sensors to confirm that [the device] is, in reality, in a moving vehicle” *Id.*, 14:4-7.

Green’s teachings avoid the concerns with AT&T’s DriveMode application. Decl., ¶243. First, rather than using only velocity to make the in-vehicle determination, Green discloses also using duration of velocity and checking data to confirm the determination. *Id.*, 13:45-51. These teachings avoid the “arbitrary” nature of using just a speed threshold and decreases the likelihood of having a “false positive.” Decl., ¶243. Second, Green discloses using the accelerometer to acquire velocity and duration of velocity, rather than the battery-intensive GPS sensor, which reduces battery usage. *Id.* A POSITA seeking to improve on Wright therefore would have been motivated to modify the in-vehicle determination in accordance with Green’s teachings, i.e., by using the accelerometer and using multiple data points. *Id.*

Because Wright and Green both disclose mobile devices with accelerometers, this modification to Wright’s in-vehicle determination would have been straightforward with a reasonable expectation of success. *Id.*, ¶244. Indeed, a POSITA would not need to introduce additional hardware to Wright’s invention; she

could simply code Wright's mobile application to make an in-vehicle determination using accelerometer data instead of GPS data. Such a modification would have been readily implementable with very high confidence of success. *Id.*

C. Independent Claims

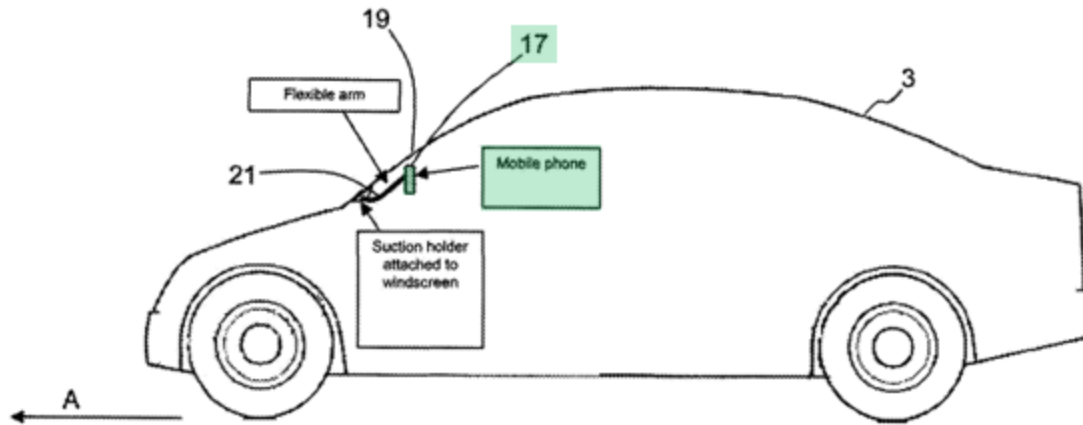
1. Claim 1

a. 1[pre]: "A device for use with a vehicle ..."

If the preamble is limiting, Wright discloses "[a] device for use with a vehicle."

Wright is directed to "[m]ethods and systems for logging driving information associated with a vehicle when driven." Specifically, Wright relates to "**a mobile telecommunications device**" that is "**configured to log driving information associated with the vehicle when driven.**" Wright, Abstract; *see also id.*, claim 1 ("A **mobile telecommunications device** configured to log driving information **associated with a vehicle ...**"); Decl., ¶239.

Figure 2 of Wright "illustrates a preferred arrangement of the mobile telecommunications device 17 within the automobile 3." Wright, 14:46-47.



Id., Fig. 2.

Accordingly, Wright discloses “[a] device for use with a vehicle.” Decl., ¶241-43.

b. 1[a]: “a mode-determining component ...”

Wright in view of Green renders obvious limitation 1[a]. In particular, Wright’s processor module 33,⁸ as modified by the teachings of Green, is “a mode-

⁸ Wright’s specification mistakenly refers to the processor module as element “31,” rather than “33,” as it is labeled in Fig. 3. A POSITA reviewing Wright would understand that any disclosures in Wright relating to a “processor module,” whether identified as 31 or 33, are intended to reference the same processor module. Decl., ¶252 n.3. Accordingly, Petitioner treats all references to a “processor module” in Wright as referencing processor module 33.

determining component operable to detect whether the device is in the vehicle and to generate an in-vehicle signal” (1[a]). Decl., ¶¶252-64.

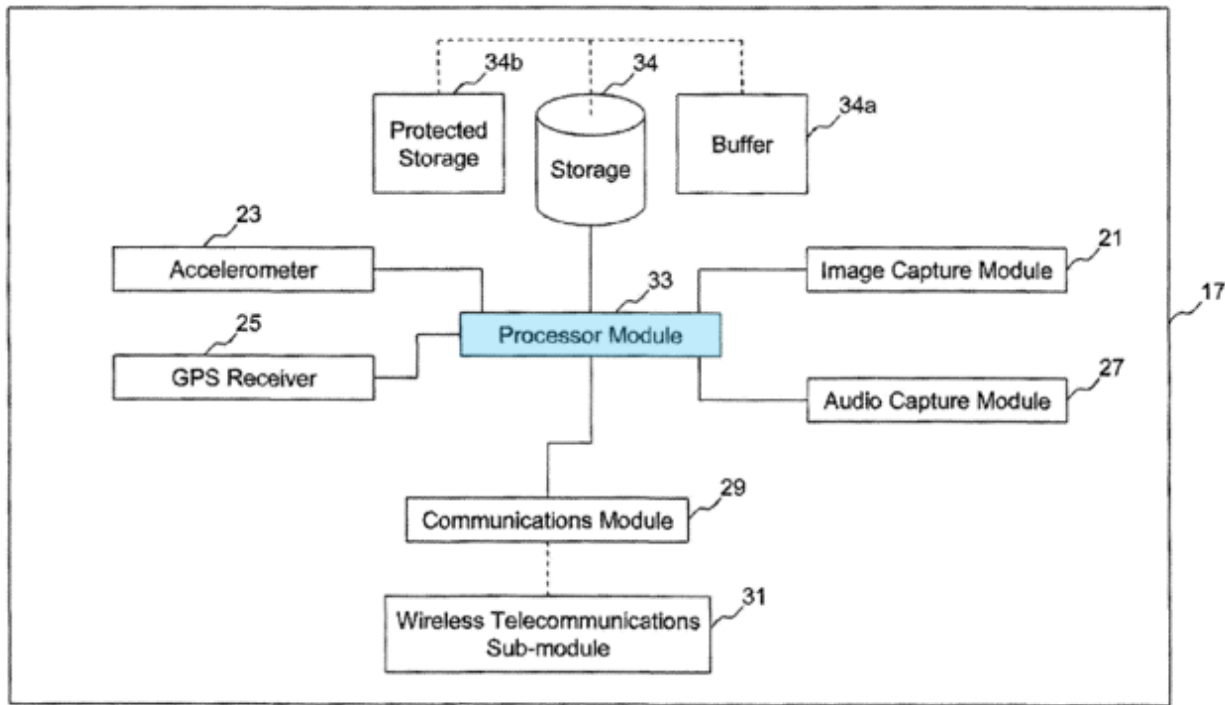


Fig. 3

Wright, Fig. 3.

Wright’s processor module 33 is “operable to detect whether the device is in the vehicle.” Wright’s mobile telecommunications device 17 (the “device”) includes “an image capture module 21, an accelerometer 23, a GPS receiver 25, [and] an audio capture module 27,” generally referred to as “data capture modules” in Wright, each of which “comprise sensors for sampling physical data.” Wright, 15:16-28. “This sampled physical data, which is also referred to as sensor data, is subsequently **processed by the processor module 31** and stored in the storage module 33.” Wright, 15:29-31.

As shown in Figure 4a below, Wright discloses that the device registers the start of a driving period, which “determines when the recording of sampled sensor data begins.” *Id.*, 18:30-32.

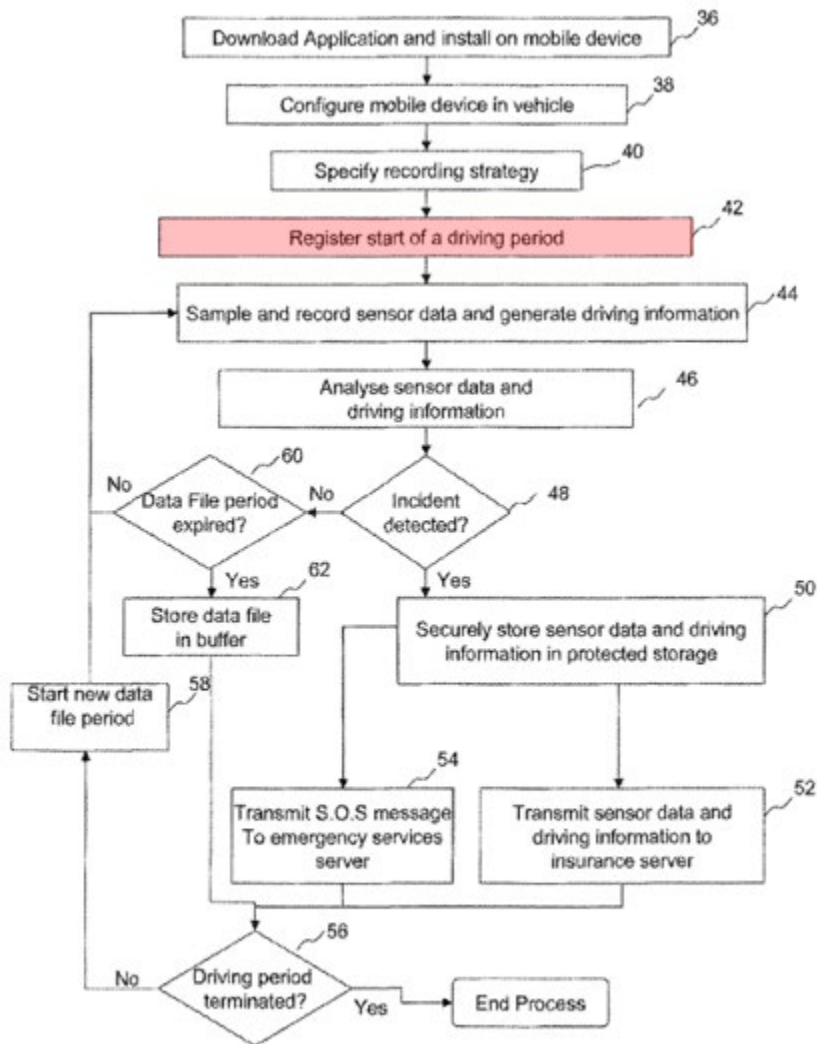


Fig. 4a

Id., Fig. 4a.

The mobile device 17 may automatically register the start of the driving period based on received sensor data. *Id.*, 18:34-35. “For example, **the mobile device 17 may be configured to initiate the driving period once sensor data above a**

minimum threshold value is recorded, indicative of the vehicle being in motion.” *Id.*, 18:35-38. In a non-limiting example, Wright discloses registering the start of a driving period “once a velocity greater than 20 kilometers per hour is detected.” *Id.*, 18:38-39. A POSITA would understand that the “driving period” is a first mode of the device. Decl., ¶244.

Given the problems in the prior art, §VII.B, a POSITA implementing Wright’s invention would have looked for more accurate and efficient ways to determine whether the smartphone is in a vehicle beyond simply using GPS data to see if a speed threshold has been exceeded. Green discloses using velocity and duration of velocity data from an accelerometer to accurately determine whether the mobile device is in a vehicle, which overcomes the problems with DriveMode. Therefore, a POSITA reviewing Wright would have modified the in-vehicle determination in accordance with Green’s teachings, i.e., by using the accelerometer. Decl., ¶260.

As discussed above, the processor module 33 is the component of Wright’s mobile device 17 that collects and processes sensor data. *Id.*, 15:29-31. Accordingly, a POSITA would understand that Wright’s processor module 33 is the component that is configured to detect the start of a driving period based on processed sensor data. Decl., ¶261. Accordingly, Wright’s processor module 33 is “operable to detect whether the device is in the vehicle.” *Id.*

Wright's processor module 33 as modified by Green's teachings also is "operable ... to generate an in-vehicle signal." For example, once the processor module detects, as taught by Green, that (1) velocity is greater than a certain speed and (2) such velocity has been maintained for a certain period of time, it recognizes that the mobile device is in a vehicle and registers the start of the driving period that causes the mobile device 17 to begin recording sensor data. Decl., ¶262. The processor module must generate a signal (i.e., the "in-vehicle signal") to communicate the beginning of the driving period and that recording of sensor data should begin. *Id.*

The teachings of Wright in view of Green are consistent with the '952 patent's disclosures. Decl., ¶263. The '952 patent states that the "device 202 may detect at least one of many parameters" and that "[d]atabase 204 may have stored therein known parameters values that are indicative of being in a vehicle." '952 patent, 7:66-8:1. The device may then compare detected parameters (such as velocity and duration of velocity) with previously stored parameters associated with a vehicle to generate an in-vehicle signal if appropriate. *Id.*, 8:1-7.

Accordingly, Wright's processor module 33, as modified by the teachings of Green, is "a mode-determining component operable to detect whether the device is in the vehicle and to generate an in-vehicle signal." Decl., ¶264.

c. **1[b]-1[c]: “a first detecting component ...” and “a second detecting component ...”**

As shown in Figure 3 below, Wright’s mobile device 17 includes accelerometer 23 and audio capture module 27, referred to as “data capture modules” in Wright. Wright, 15:22-24. Wright’s data capture modules “comprise sensors for **sampling physical data.**” Wright, 15:22-27. Thus, Wright’s accelerometer 23 and audio capture module 27 is each a “detecting component.” Decl., ¶265.

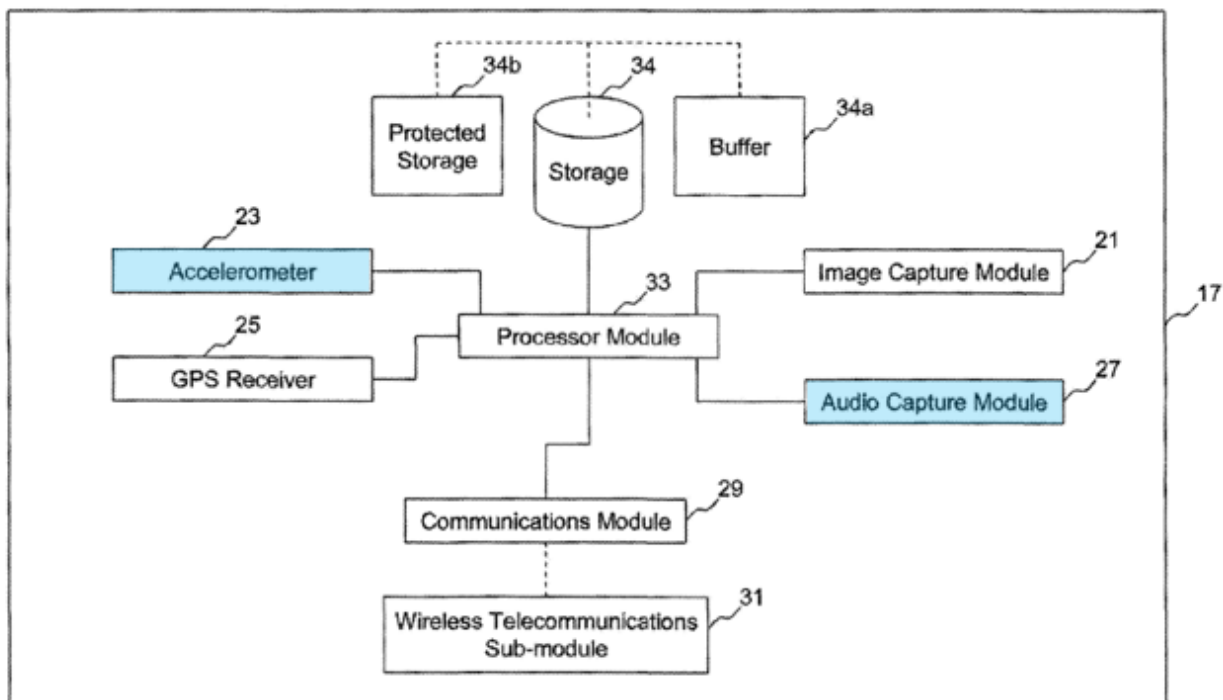


Fig. 3

Wright, Fig. 3.

Accelerometer 23: In Wright, “[t]he accelerometer 23 is arranged to provide information regarding the motion of the automobile 3 along all three dimensional axes.” Wright, 15:38-40. Wright discloses that the accelerometer is “for detecting

the **acceleration** of the mobile device.” *Id.*, 8:7-8. The ’952 patent identifies acceleration as an exemplary detected parameter. ’952 patent, 6:53-56. Wright’s accelerometer 23, therefore, is a “detecting component” as claimed in the ’952 patent. Decl., ¶268.

Audio capture module 27: Wright’s “audio capture module 27 provides **means, such as a microphone, for recording audio data**, which might be generated by a driving incident.” Wright, 15:66-16:1. The module may capture “any **sounds** generated externally to the vehicle, for example the sound of an impact, or the sound of the crumple zone being crushed. Additionally, **sounds** generated internally to the vehicle are also recorded.” *Id.*, 16:1-5. The ’952 patent identifies sound as an exemplary detected parameter. ’952 patent, 6:53-56. Accordingly, Wright’s audio capture module 27 is a “detecting component.” Decl., ¶269.

Wright’s mobile device 17 collects the same types of data recited in the ’952 patent. Decl., ¶271. For example, the ’952 patent states that “[p]arameter-detecting component 222 may be any known device or system that is operable to detect a parameter, non-limiting examples of which include ... acceleration [and] sound” ’952 patent, 6:53-56. Therefore, Wright’s disclosures of data capture modules are consistent with the ’952 patent’s detecting components.

For the reasons discussed above, either accelerometer 23 or audio capture module 27 could be the “first” or “second” detecting component of claim 1. Decl., ¶¶272-73; *Gillette*, 405 F.3d at 1367.

Wright also discloses that these detecting components are able to generate signals based on the data collected. Decl., ¶274. Wright’s method uses data from the sensors to generate driving information. Wright, Figure 4a; 18:49-50 (“Once the driving period has been initiated, **sensor data is sampled and recorded in storage 34, at step 44.** Additionally, the sampled sensor data is used to generate driving information by the processor module 33.”). A POSITA would understand that data collected by the sensors must be transmitted in the form of a signal in order for the data to be stored and used by other parts of Wright’s system. Decl., ¶274. As a result, each of the sensors operates to “detect a [first/second] parameter and to generate a [first/second] detector signal based on the [first/second] detected parameter.” *Id.* Even if Wright’s data capture modules did not already include the ability to generate a signal, it would have been obvious to a POSITA to design an improved crash detection method that includes a signal from the capture modules to the processor.

Accordingly, Wright in view of Green discloses or renders obvious limitations 1[b] and 1[c]. Decl., ¶265.

d. 1[d]: “wherein said mode-determining component is further operable to generate a crash mode signal ...”

Wright discloses that the “mode-determining component is further operable to generate a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal.” As discussed in §VIII.A.2 above, Wright’s processor module 33 is the “mode-determining component” of claim 1. As also discussed above, the parties agreed in litigation that the construction of “crash mode signal” is “a signal that indicates detection of a vehicle crash.” §VI, *supra*.

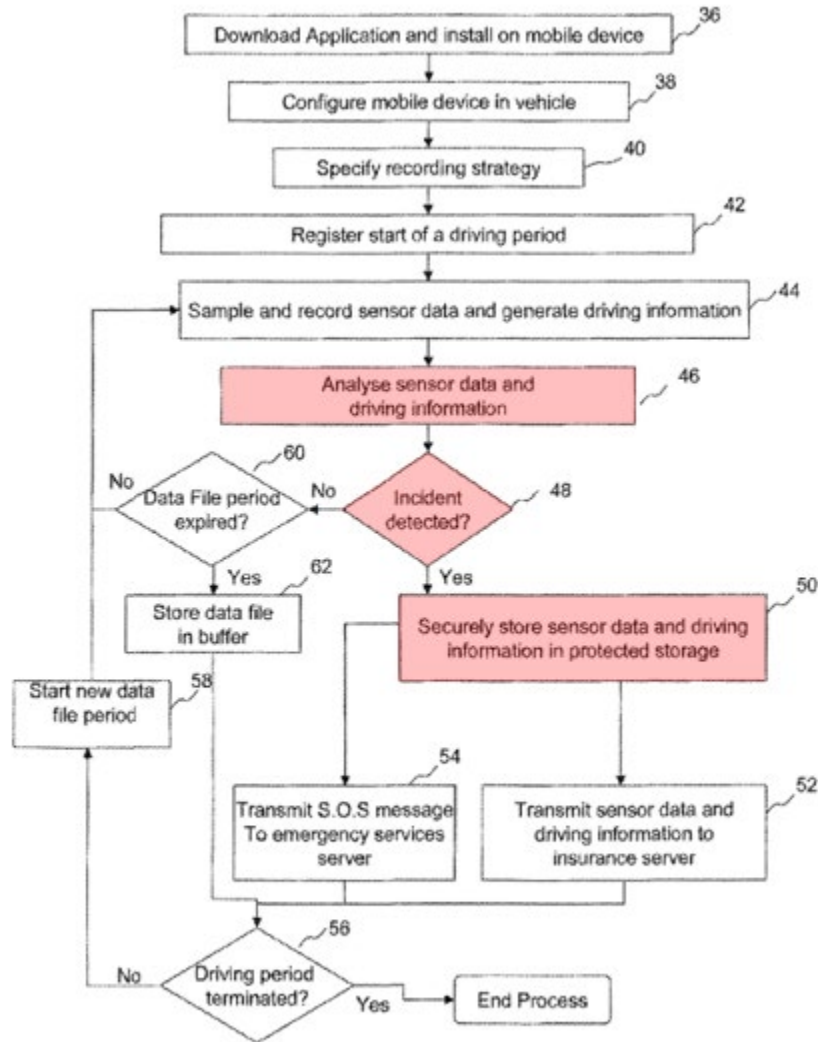


Fig. 4a

Wright, Fig. 4a.

As shown above, after sensor data has been recorded at step 44 (by the “detecting components,” as discussed above), “the sampled sensor data is used to generate driving information by the processor module 33.” *Id.*, 18:51-52. Then, “[t]he sampled sensor data and the driving information is continuously analysed by the processor module 33, at step 46.” *Id.*, 18:52-54. Wright’s processor module 33 then uses the sensor information to determine if the vehicle has been in a vehicle

incident, such as a collision. *Id.*, 18:55-57. Once a vehicle incident has been confirmed, the system proceeds to store sensor data and driving information in step 50. *Id.*, 18:57-60. A POSITA would understand that the processor module would need to send a signal communicating the vehicle incident in order to trigger the saving of data in step 50. Decl., ¶278. Wright's processor module 33, therefore, is operable to generate a "crash mode signal," i.e., "a signal that indicates detection of a vehicle crash." Even if Wright's system did not include a signal communicating the vehicle incident, it would have been obvious to a POSITA to employ such a computer signal, with a reasonable expectation of success, so that the system efficiently detects the crash and stores the appropriate information. *Id.*

Wright explains that the incident assessment is based on the in-vehicle signal and the first and second detector signals. As discussed above, Wright's processor module 33 ("mode-determining component") first determines if the device is in a vehicle. The mobile device does not begin to collect and analyze sensor data until the start of the driving period has been registered by the processor module 33, i.e., the "mode- determining component" has "generate[d] an in-vehicle signal." Wright, 18:30-32 ("The start of a driving period is registered, at step 42. The start of the driving period determines when the recording of sampled sensor data begins."). Therefore, any collection and analysis of data in Wright is based on the in-vehicle signal. Decl., ¶279.

Once the start of a driving period has been registered (i.e., an “in-vehicle signal” has been generated), Wright’s sensor set collects data. As shown in Figure 4a, the sensor data collected in step 44 is used to analyze whether the vehicle has been in an “incident” (steps 46 and 48), such as a vehicle collision. Wright, 12:58-62 (the mobile device contains a mobile application that “is arranged to record and document the events surrounding an incident involving the vehicle (a ‘driving incident’), such as a vehicle collision.”). With reference to Figure 4b below, Wright explains that within step 44, the device can analyze data from multiple sensors.

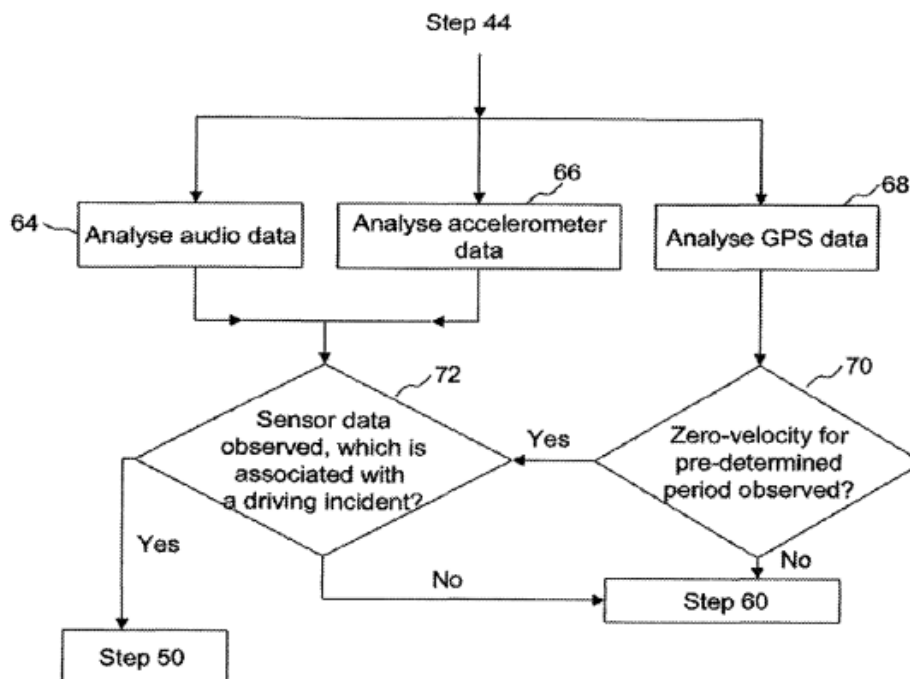


Fig. 4b

Id., Fig. 4b, 20:16-20.

Wright explains that audio data from the audio capture module 27 can be analyzed by comparing the collected audio data with predetermined audio data

representing sounds associated with vehicle incidents. *Id.*, 20:28-35 (“Such sounds may relate to the sound of tyre squeals, the sound of deforming metal, the sound of breaking glass, passenger screaming and/or shouting, the sound of airbag deployment, and any other sound which may be associated with a driving incident.”). Additionally, accelerometer data from the accelerometer 23 can be analyzed by comparing the collected acceleration data with predetermined accelerometer data models. *Id.*, 20:48-54 (“The data models represent specific states of motion of the vehicle. For example, this might comprise defining threshold values for yaw, pitch and roll, which if exceeded, indicate a state of motion of the vehicle indicative of a driving incident.”).

Then, “[o]n the basis of the audio data analysis and the accelerometer data analysis, the mobile telecommunications device determines, at step 72, if a driving incident has occurred.” *Id.*, 21:21-25. Wright discloses that, if the mobile device determines that a crash has occurred, it proceeds to perform steps 50, 52, and 54 of Figure 4a, which include storing sensor data and driving information in a file, transmitting data to an insurance company, and transmitting an S.O.S. message to emergency services:

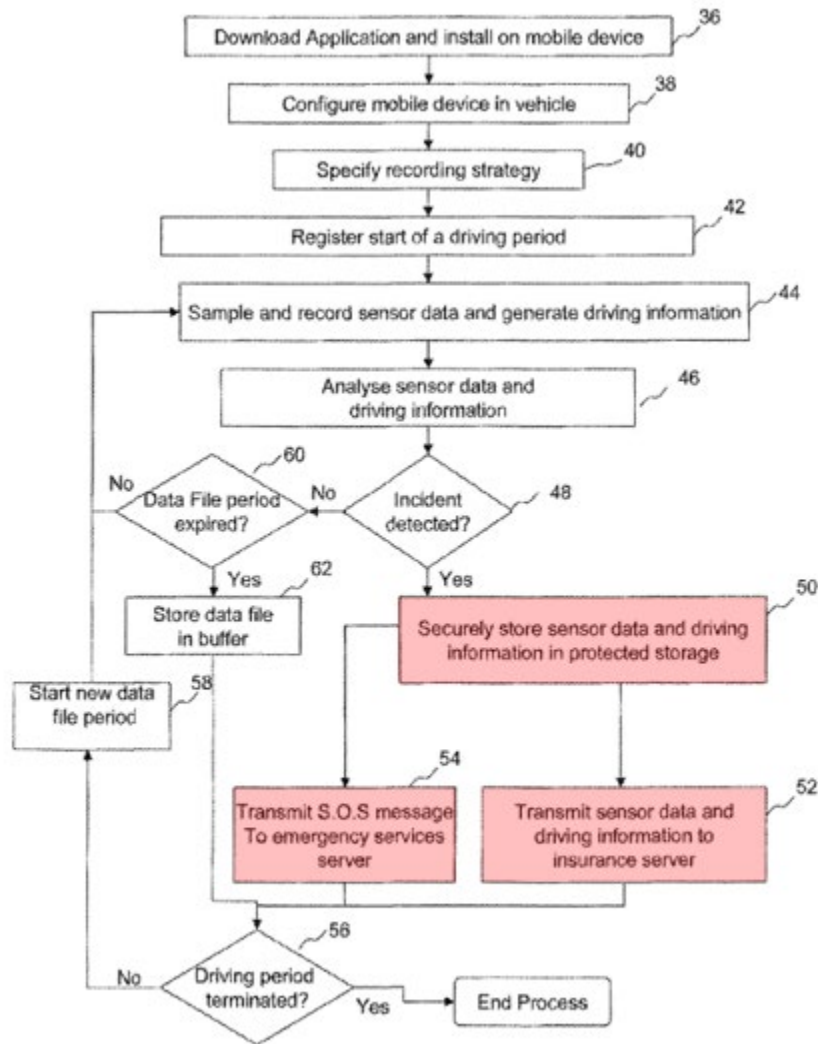


Fig. 4a

Id., Fig. 4a. These actions taken in Wright are similar to the actions disclosed in the '952 patent as occurring when a crash has been determined. '952 patent, 14:37-39 (“[L]et the crash mode be such a mode wherein predetermined functions of device 202 may be activated, such as **automatically contacting emergency services.**”); Decl., ¶284.

Thus, Wright’s mobile device generates a “crash mode signal” if (1) the device is confirmed to be in the vehicle, and (2) analysis of audio data (a “first

detector signal”) and accelerometer data (a “second detector signal”) indicates that there has been a driving incident, such as a collision. Decl., ¶285. That Wright does not specify an order in which this data is collected is immaterial, as the ’952 patent does not require a specific order in which the “first detector signal” and the “second detector signal” are generated. §VI.B.1.c; *Gillette*, 405 F.3d at 1373.

Accordingly, Wright teaches or discloses limitation 1[d].

2. Independent Claim 7

Claim 7 is directed to the method performed by the device of claim 1, rather than the device itself. As explained in more detail below, Wright in view of Green renders claim 7 obvious in largely the same manner as it does claim 1.

a. 7[pre]: “A method for use with a vehicle ...”

If the preamble is limiting, Wright discloses “[a] method for use with a vehicle.”

Wright is directed to “[m]ethods and systems **for logging driving information associated with a vehicle when driven.**” Wright, Abstract. Wright discloses an exemplary method for use with a vehicle in Figure 4a.

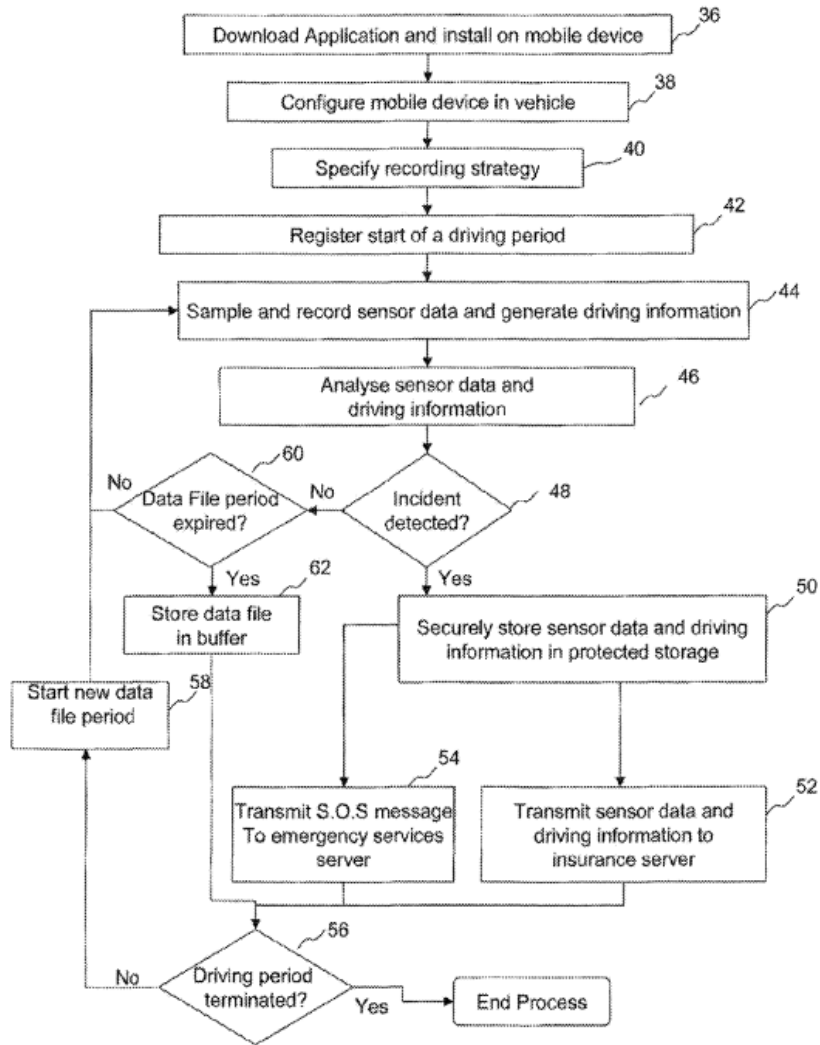


Fig. 4a

Id., Fig. 4a.

Accordingly, Wright discloses “[a] method for use with a vehicle.” Decl., ¶¶324-27.

b. 7[a]-7[b]: “detecting” and “generating” via a “mode-determining component”

Limitations 7[a]-7[b] recite that the “mode-determining component” performs the same functionality set forth in limitation 1[a]. While limitation 1[a] recites that

the “mode-determining component” is “operable to detect whether the **device** is in the vehicle” and limitation 7[a] recites that the component “detect[s] whether the **mode-determining component** is in the vehicle,” those limitations are substantively the same, as the mode-determining component is located within the device. Decl., ¶330. Accordingly, Wright in view of Green renders obvious limitations 7[a]-7[b] for the same reasons as limitation 1[a]. §VII.C.1.b; Decl., ¶¶328-30.

c. 7[c]-7[f]: “detecting” and “generating” via a “[first/second] detecting component”

Limitations 7[c]-7[d] recite that the “first detecting component” performs the same functionality set forth in limitation 1[b], and limitations 7[e]-7[f] recite that the “second detecting component” performs the same functionality set forth in limitation 1[c]. Accordingly, Wright in view of Green renders obvious limitations 7[c]-7[f] for the same reasons as limitations 1[b]-1[c]. §VII.C.1.c; Decl., ¶¶331-36.

d. 7[g]: “generating, via the mode-determining component, a crash mode signal ...”

Limitation 7[g] recites that the “mode-determining component” performs the same functionality set forth in limitation 1[d]. Accordingly, Wright in view of Green renders obvious limitation 7[g] for the same reasons as limitation 1[d]. §VI.C.1.d; Decl., ¶¶337-39.

3. Independent Claim 13

Claim 13 is directed to a non-transitory, computer-readable media containing instructions to be performed by the device of claim 1, rather than the device itself. As explained in more detail below, Wright in view of Green renders claim 13 obvious in largely the same manner as it does claim 1.

a. 13[pre]: “A non-transitory, computer-readable media ...”

If the preamble is limiting, Wright discloses “[a] non-transitory, computer-readable media having computer-readable instructions stored thereon, for use with a vehicle, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform [a] method.”

As discussed above, Wright discloses a “device for use with a vehicle,” including in the form of mobile telecommunications device 17. §VII.C.1.a. Wright further discloses that “[t]he mobile telecommunication device’s functionality is provided by the **Witness application, which is installed in the device’s local non-volatile storage, and which is executed by the device’s native processor.**” Wright, 13:36-39. The local non-volatile storage of Wright’s mobile device containing the code or instructions for the Witness application is a “non-transitory, computer-readable media having computer-readable instructions stored thereon.” Decl., ¶358. And the Witness application (“the computer-readable instructions”) can be executed by the mobile device’s processor (“a computer”), i.e., the

instructions are “capable of being read by a computer and being capable of instructing the computer to perform [a] method.” *Id.* Accordingly, Wright discloses the preamble of claim 13. *Id.*, ¶359.

b. 13[a]-13[b]: “detecting” and “generating” via a “mode-determining component”

Limitations 13[a]-13[b] recite that the “mode-determining component” performs the same functionality set forth in limitation 1[a]. As discussed above, Wright’s processor module 33 is the “mode-determining component.” Because the functionality of Wright’s mobile device is provided by computer-readable instructions in the form of the Witness application, the functionality of “detecting” and “generating” by the “mode-determining component,” as discussed in connection with limitation 1[a] above, is performed based on computer-readable instructions. Decl., ¶¶366-67. Accordingly, Wright in view of Green renders obvious limitations 13[a]-13[b] for the same reasons as limitation 1[a]. §VI.C.1.b; Decl., ¶368.

c. 13[c]-13[f]: “detecting” and “generating” via a “[first/second] detecting component”

Limitations 13[c]-13[d] recite that the “first detecting component” performs the same functionality set forth in limitation 1[b], and limitations 13[e]-13[f] recite that the “second detecting component” performs the same functionality set forth in limitation 1[c]. As discussed above, Wright’s accelerometer 23 and audio capture module 27 is each a “detecting component.” Because the functionality of Wright’s

mobile device is provided by computer-readable instructions in the form of the Witness application, the functionality of “detecting” and “generating” by the “[first/second] detecting component,” as discussed in connection with limitations 1[b]-1[c] above, is performed based on computer-readable instructions. Decl., ¶¶371, 375. Accordingly, Wright discloses limitations 13[c]-13[f] for the reasons explained above for limitations 1[b]-1[c]. §VI.C.1.c; Decl., ¶¶369-76.

d. 13[g]: “operating an operating component in a first mode”

Limitation 13[g] recites that the “operating component” performs the same functionality, i.e., operating in a first mode, that is recited in claim 6. As discussed below, Wright’s processor module 33 is the “operating component.” Because the functionality of Wright’s mobile device is provided by computer-readable instructions in the form of the Witness application, the functionality of “operating an operating component in a first mode,” as discussed in connection with claim 6 below, is performed based on computer-readable instructions. Decl., ¶379. Accordingly, Wright discloses limitation 13[g] for the reasons explained below for claim 6 with respect to operating in a first mode. §VI.D.4; Decl., ¶380.

e. 13[h]: “generating, via the mode-determining component, a crash mode signal ...”

Limitation 13[h] recites that the “mode-determining component” performs the same functionality set forth in limitation 1[d]. This functionality of the “mode-

determining component” also is performed based on computer-readable instructions. Decl., ¶383. Accordingly, Wright discloses limitation 13[h] for the reasons explained above for limitation 1[d]. §VI.C.1.d; Decl., ¶384.

f. 13[i]: “switching operation of the operating component ...”

Limitation 13[i] recites that the “operating component” performs the same functionality, i.e., switching operation from the first mode to a second mode based on the crash mode signal, that is recited in claim 6. This functionality of the “operating component” also is performed based on computer-readable instructions. Decl., ¶387. Accordingly, Wright discloses limitation 13[i] for the reasons explained below for claim 6 with respect to switching operation from the first mode to a second mode based on the crash mode signal. §VI.D.4; Decl., ¶¶388.

D. Dependent Claims

1. Claims 2, 3, 8, 9, 14, and 15

Claims 2, 8, and 14 require that “said first detecting component is operable to detect, as the first parameter, one of the group consisting of” a number parameters, including “acceleration in any of three dimensions ... sound ... change in acceleration in any of three dimensions ... a change in sound” Claims 3, 9, and 15 require that “said first detecting component is operable to detect, as the first parameter, a parameter associated with deployment of an airbag within the vehicle.”

As discussed in §VII.C.1.c, Wright discloses the use of an accelerometer 23 and an audio capture module 27, each of which can be the “first detecting component” of claim 1.

An accelerometer can detect at least “acceleration in any of three dimensions” and “change in acceleration in any of three dimensions.” Decl., ¶289; Wright, 8:11-14. An audio capture module may detect at least “sound” and “change in sound.” Decl., ¶290; Wright, 15:66-16:6. Wright further discloses that “the analysis of sampled audio data ... may comprise comparing the recorded audio data with predetermined audio data models representing specific sounds,” including, for example, “the sound of airbag deployment.” Wright, 20:28-33; Decl., ¶293.

Accordingly, Wright in view of Green renders obvious claims 2, 3, 8, 9, 14, and 15. Decl. ¶¶288-295, 341-348, 389-396.

2. Claims 4, 10, and 16

Claims 4, 10, and 16 require that “said first detecting component is operable to detect, as the first parameter, acceleration along a single axis, and wherein said first detecting component is operable to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.”

Wright’s accelerometer 23 is a “first detecting component.” §VII.B.1.c. Wright discloses that the accelerometer 23 may be a single axis accelerometer.

Wright, 8:10-11. Wright therefore discloses that the “first detecting component is operable to detect, as the first parameter, acceleration along a single axis.” Decl., ¶297.

Wright further discloses that “said first detecting component is operable to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.” Wright discloses using acceleration thresholds along a single axis to detect driving incidents. Wright, 19:9-13 (“Predefined threshold values may also be used to automate the detection of a driving incident. For example, each data type and/or derived driving information (e.g. **acceleration**, velocity, g-force, pitch, roll, yaw etc.) **may be associated with a threshold value.**”), 20:48-21:5; Decl., ¶287. For example, Wright states that a “[h]arsh acceleration” incident (i.e., a vehicle collision) occurs when there is, “from stationary, **an acceleration greater than 2.5 m/s²** or backward G-force of greater than 0.7 G for more than 800 msec.” Wright, 21:1-3; Decl., ¶¶298-99.

For Wright’s mobile device to make this harsh acceleration determination, the accelerometer 23 is providing the acceleration data, i.e., generating the “first detector signal,” when the detected acceleration is equal to or greater than a predetermined value—in this case, 2.5 m/s². Accordingly, Wright discloses that the “first detecting component” (accelerometer 23) “is operable to detect, as the first parameter, acceleration along a single axis, and wherein said first detecting component is

operable to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value.” Decl., ¶¶300-01.

Wright in view of Green therefore renders obvious claims 4, 10, and 16. Decl., ¶¶296-302, 349-353, 397-401.

3. Claims 5, 11, and 17

Claims 5, 11, and 17 require that the device include “a communication component operable to wirelessly communicate with a network.” As shown in Figure 3 below, Wright’s mobile device 17 includes a “communication module 29 [that] provides the mobile telecommunications device 17 with functionality for communicating” with other devices. Wright, 16:7-9.

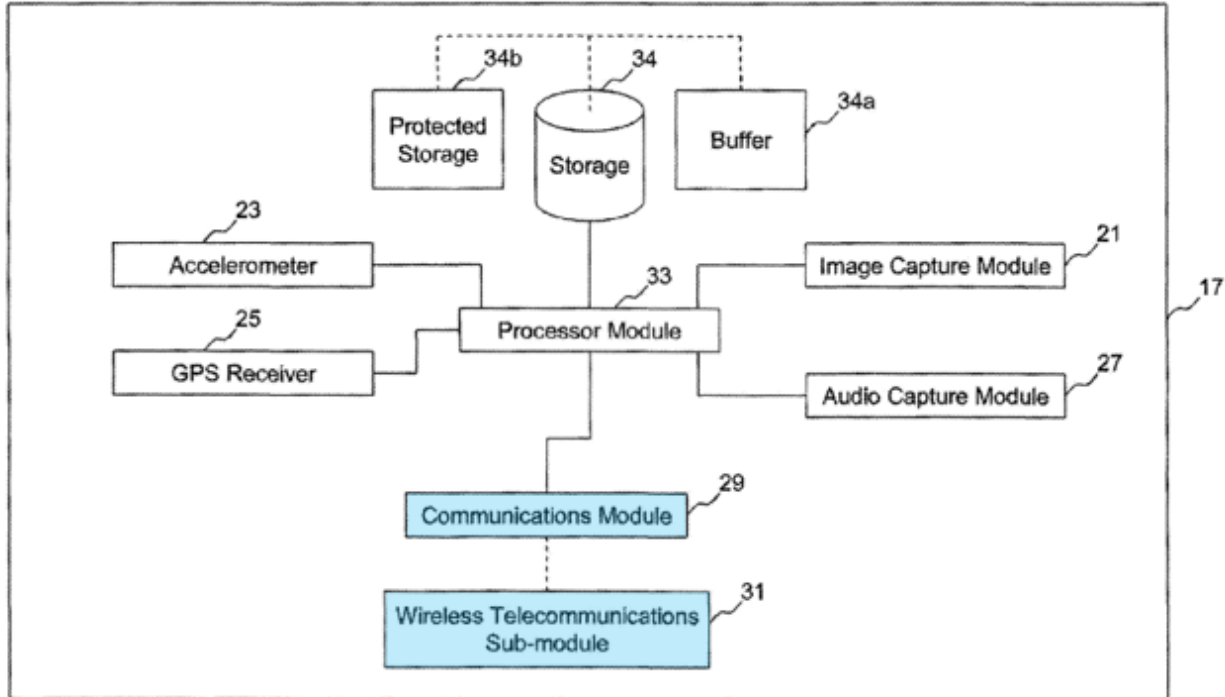


Fig. 3

Id., Fig. 3.

Furthermore, the communication module 29 of the mobile device “comprises a **wireless telecommunications sub-module** 31 enabling communication over a telecommunications network.” *Id.*, 16:10-12. Wright also discloses an “optional **wi-fi communication sub-module**,” *id.*, 16:12-13, which would also allow for wireless communications.

Wright’s communication module 29, therefore, is “a communication component operable to wirelessly communicate with a network.” Accordingly, Wright in view of Green renders obvious claims 5, 11, and 17. Decl., ¶¶303-06, 354-56, 402-04.

4. Claims 6, 12, and 18

Claims 6, 12, and 18 depend from claims 1, 7, and 13, respectively, and further require the device to include “an operating component operable to operate in a first mode and a second mode, wherein said operating component is operable to switch from operating in the first mode to operating in the second mode based on the crash mode signal.”

The ’952 patent explains that the device operates in a first mode when it is placed in “vehicle mode” after the in-vehicle signal has been generated. ’952 patent, 4:67-5:4 (“In accordance with aspects of the present invention, a communication device may be able to detect the crash of vehicle 102 **based on being in the vehicle mode** and based on detecting two parameters”). The ’952 patent confirms that

operating in a second mode, i.e., the “crash mode,” comprises taking predetermined actions once a crash has been detected: “[F]or purposes of discussion, let the **crash mode** be such a mode wherein predetermined functions of device 202 may be activated, such as automatically contacting emergency services.” *Id.*, 14:36-39.

A POSITA would understand that Wright’s device operates in two modes as related to its crash detection functionality: a normal driving mode and a vehicle incident/crash mode. Decl., ¶308. In Wright, once the start of a driving period has been registered, the mobile device 17 operates in its normal mode, collecting sensor data and driving information and analyzing that sensor data and driving information to determine whether a driving incident has occurred. Wright, Fig. 4a (steps 44, 46). This normal operation of the mobile device while the device is in the vehicle is a “first mode,” which is “a first mode of operation.” Decl., ¶¶309-10.

Once a driving incident has been detected (i.e., when the “crash mode signal” has been generated), Wright’s mobile device is operating in a “second mode,” i.e., “a second mode of operation.” Decl., ¶¶312-16. The mobile device 17 is configured to perform several actions in relation to a crash having occurred. For example, steps 50, 52, and 54 of Figure 4a depict exemplary actions taken by Wright’s mobile device after a crash has been detected:

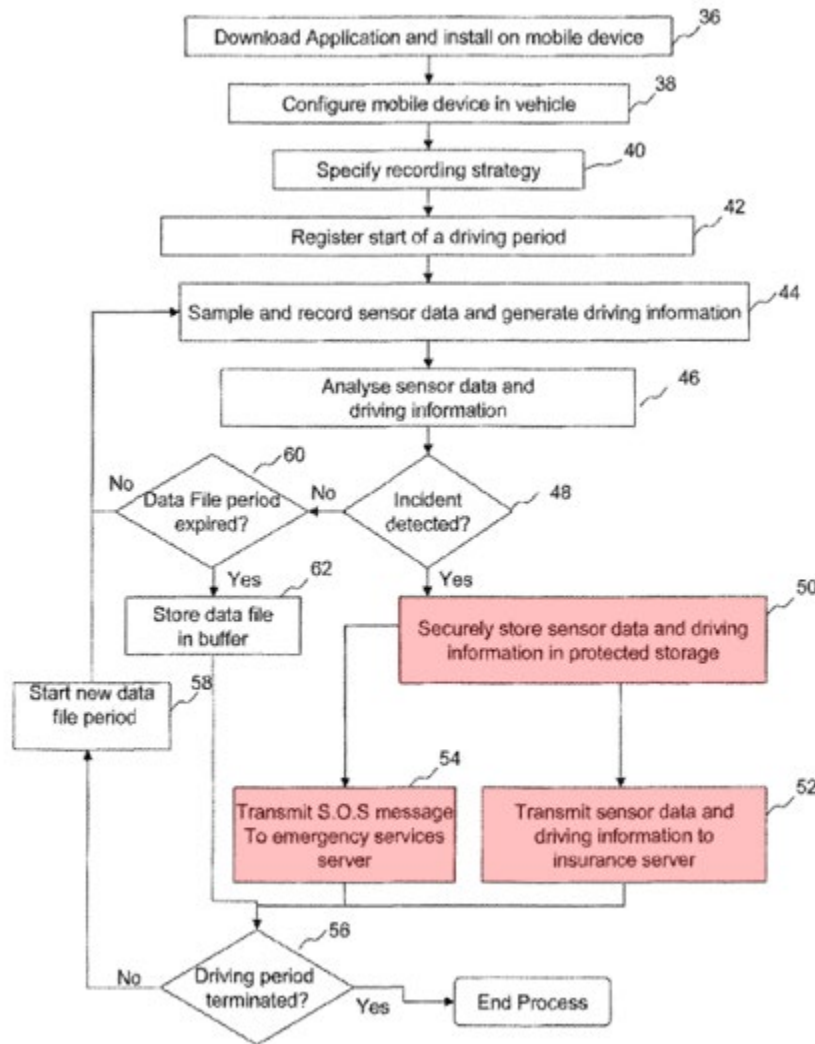


Fig. 4a

Id., Fig. 4a.

Wright discloses that, “[i]f a driving incident has been detected [at step 48], all the sensor data and driving information associated with the data file period, is stored in a data file in protected storage 34 b, at step 50.” *Id.*, 18:57-60. Additionally, the data file can be transmitted to the insurance provider to inform the provider “that a driving incident has occurred and provide[] the insurance provider with the sensor data and derived driving information.” *Id.*, 19:36-46 (step 52).

Finally, “once a driving incident has been detected, an S.O.S. message may be automatically forwarded from the mobile telecommunications device 17 to the emergency services server 7, at step 54.” *Id.*, 19:47-53.

A POSITA would understand that the processor module 33 is the component that controls the functionality of mobile device 17 as related to Wright’s crash detection functionality. Decl., ¶318. For example, Wright discloses that “[t]he mobile telecommunication device’s functionality is provided by the Witness application, which is installed in the device’s local non-volatile storage, and which is **executed by the device’s native processor.**” Wright, 13:36-39. Additionally, it is the processor module 33 that “determines if a driving incident has been detected” *Id.*, 18:55-56. Consistent with these disclosures, Figure 3 of Wright shows that all other components of the mobile device, including the sensors and the communications module, operate through the processor module 33.

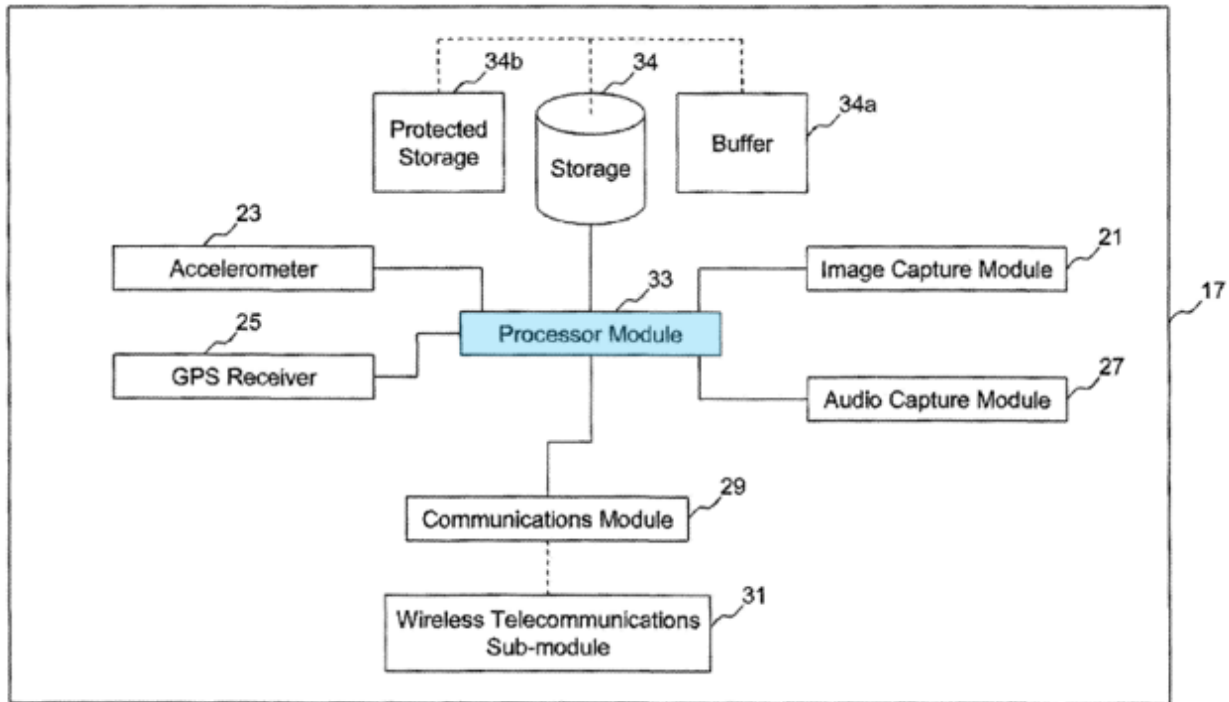


Fig .3

Id., Fig. 3.

Accordingly, a POSITA would understand that the processor module 33 would also control the mode of operation of the mobile device and, thus, would operate as an “operating component” as that term is used in the ’952 patent. Decl., ¶319. A POSITA would further understand that multiple components or modules, including the “operating component,” may exist in the processor module 33. Decl., ¶320. The ’952 patent confirms this understanding, as two or more of the claimed components “may be combined as a unitary device.” ’952 patent, 5:27-33; *see also Google LLC v. Pers. Audio, LLC*, 743 F. App’x 978, 985 (Fed. Cir. 2018) (“The Board’s [obviousness] holding is consistent with the principle that in infringement or obviousness analysis, a single element, feature, or mechanism can ordinarily

satisfy multiple claim limitations, including by performing multiple claimed functions.”).

For these reasons, Wright discloses the limitation of claim 6 of “an operating component operable to operate in a first mode and a second mode, wherein said operating component is operable to switch from operating in the first mode to operating in the second mode based on the crash mode signal.” Decl., ¶321.

Wright in view of Green, therefore, renders obvious claims 6, 12, and 18. Decl., ¶¶307-322, 357-59, 405-07.

VIII. No Secondary Considerations

Petitioner is unaware of any secondary considerations that may support the patentability of the Challenged Claims.

IX. Discretionary Issues

A. The Board Should Decline to Deny Institution Under *Advanced Bionics*.

The Board should decline to deny institution because the first part of the *Advanced Bionics* framework—“whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office”—is not satisfied. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, 2020 WL 740292, at *3 (PTAB Feb. 13, 2020) (precedential); 35 U.S.C. §325(d).

None of the references relied on in this Petition were cited during prosecution of the '952 patent, so the Examiner never applied or discussed them. '952 patent (References Cited section). The Board has “consistently held that a reference that was neither applied against the claims nor discussed by the Examiner does not weigh in favor of exercising ... discretion under § 325(d).” *Bowtech v. MCP IP, LLC*, IPR2019-00379, Paper 14, at 18 (PTAB July 3, 2019) (quotations omitted). Therefore, the Board should decline to exercise its discretion under §325(d).

B. The Board Decline to Deny Institution Under *Fintiv*.

The Board should not discretionarily deny this Petition under *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, 2020 WL 2126495, at *3 (PTAB Mar. 20, 2020). *Fintiv* factors 2, 3, 4, and 6 weigh against denial.⁹

Fintiv Factor 2 weighs strongly against discretionary denial. In the District Court Action, the court has not yet set a trial date. Based on the filing date of the Petition, an institution decision is likely to issue around December 2024, with a final written decision issuing in December 2025. The average time to trial is over three years in the District of New Jersey, meaning that a trial may not be held until 2026—well after a final written decision in this proceeding. Ex.1011.

Factor 3—under factor 3, the early stage of this case weighs against

⁹ *Fintiv* factors 1 and 5 do not outweigh the remaining factors here.

discretionary denial. Fact discovery does not close in the District Court Action until August 20, 2024, and no further case deadlines have been set beyond that date. Ex.1010. Patent Owner’s amended infringement contentions were served on May 31, 2024, less than one week before this Petition was filed. Ex.1010. While the parties have submitted claim construction briefing, the district court has not yet issued a *Markman* decision. Ex.1009. Thus, the court is unlikely to invest significant resources or issue substantive orders related to the ’952 patent prior to the issuance of an institution decision. *Fintiv*, 2020 WL 2126495, at *4.

Factor 4—regarding the overlap between issues raised in the Petition and the District Court Action—weighs against a discretionary denial. Given the estoppel provisions of §315(e)(2), if the Board institutes IPR here, Petitioner will be estopped from raising in the District Court Action “any ground that the petitioner raised or reasonably could have raised” in this proceeding. Thus, there is no risk of overlapping and conflicting findings. *Google LLC v. Wildseed Mobile, LLC*, IPR2023-00247, 2023 WL 3846399, at *11 (PTAB June 6, 2023).

Factor 6—the final *Fintiv* factor addressing other considerations weighs against discretionary denial. Under the Director’s Interim Procedures, “the PTAB will not rely on the *Fintiv* factors to discretionarily deny institution in view of parallel district court litigation where a petition presents compelling evidence of unpatentability.” Director’s Interim Procedures at 2. The grounds in the Petition

present compelling evidence of unpatentability of the Challenged Claims, so the Board should not exercise discretionary denial for this reason alone. This factor weighs against discretionary denial.

X. Conclusion

For the reasons set forth above, Petitioner respectfully submits that it has demonstrated a reasonable likelihood that it will prevail on one or more of the grounds set forth herein, and the Board should institute review.

XI. Mandatory Notices

A. Real Parties-in-Interest (37 C.F.R. § 42.8(b)(1))

The Petitioner, Cambridge Mobile Telematics, Inc., is the real party-in-interest.

B. Related Matters (37 C.F.R. § 42.8(b)(2))

The '952 patent is at issue in *Cambridge Mobile Telematics, Inc. v. Sfara, Inc.*, No. 3:23-cv-01368, pending in the District Court for the District of New Jersey ("District Court Action"). On June 7, 2023, Patent Owner asserted the '952 patent in its counterclaims in response to Petitioner's complaint alleging infringement of other patents.

Petitioner is not aware of any other judicial or administrative matter that would affect or be affected by a decision in this IPR.

C. Lead and Back-Up Counsel (37 C.F.R. § 42.8(b)(3))

Petitioner provides the following designation of counsel.

<i>Lead Counsel</i>	<i>Back-Up Counsel</i>
Linnea Cipriano (Reg. No. 67,729) lcipriano@goodwinlaw.com Goodwin Procter LLP 620 Eighth Avenue New York, NY 10018 Phone: (212) 813-8800 Fax: (212) 355-3333	Doug Kline (Reg. No. 35,574) dkline@goodwinlaw.com Goodwin Procter LLP 100 Northern Avenue Boston, MA 02210 Phone: (617) 570-1000 Fax: (617) 523-1231
	Lana Shiferman <i>(pro hac vice application to be filed)</i> lshiferman@goodwinlaw.com Goodwin Procter LLP 100 Northern Avenue Boston, MA 02210 Phone: (617) 570-1000 Fax: (617) 523-1231
	Andrew S. Ong (Reg. No. 69,076) aong@goodwinlaw.com Goodwin Procter LLP 601 Marshall Street Redwood City, CA 94063

	Phone: (650) 752-3100 Fax: (650) 853-1038
	Amanda E. Stephenson <i>(pro hac vice application to be filed)</i> astephenson@goodwinlaw.com Goodwin Procter LLP 1900 N Street NW Washington, DC 20036 Phone: (202) 346-4000 Fax: (202) 346-4444

D. Service Information (37 C.F.R. § 42.8(b)(4))

Counsel agrees to service by mail to the addresses of counsel listed above, and to electronic service by email at the following addresses:

lcipriano@goodwinlaw.com

dkline@goodwinlaw.com

lshiferman@goodwinlaw.com

aong@goodwinlaw.com

astephenson@goodwinlaw.com

DG-CMT-Sfara@goodwinlaw.com

Date: June 5, 2024

Respectfully submitted,

/Linnea Cipriano/

Linnea Cipriano (Reg. No. 67,729)

Goodwin Procter LLP

620 Eighth Avenue

New York, NY 10018

Phone: (212) 813-8800

Fax: (212) 355-3333

lcipriano@goodwinlaw.com

CERTIFICATE OF COMPLIANCE

Petitioner certifies that the word count in this Petition is 13,983 words, as counted by the word-processing program (Microsoft Word for Office 365) used to generate this Petition, where such word count excludes the table of contents, table of authorities, listing of challenged claims, mandatory notices, certificate of service, appendix of exhibits, and this certificate of word count. This Petition is in compliance with the 14,000 word limit set in 37 C.F.R. § 42.24(a)(1)(i).

Dated: June 5, 2024

By: /Linnea Cipriano/
Linnea Cipriano

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing Petition for *Inter Partes* Review together with Exhibits 1001-1028 has been served on the Patent Owner via Federal Express Next Business Day Delivery at the following correspondence address:

117849 - Kelly, Holt & Christenson, P.L.L.C.
141 West 1st Street, Suite 100
Waconia, MN 55387.

A courtesy copy has also been emailed to Patent Owner's litigation counsel at the email addresses provided below:

Scott R. Samay
Tedd W. Van Buskirk
Oded Burger
Stephanie Mandir
DAIGNAULT IYER LLP
8618 Westwood Center Drive
Suite 150
Vienna, VA 22182
ssamay@daignaultiyer.com
tvanbuskirk@daignaultiyer.com
oburger@daignaultiyer.com
smandir@daignaultiyer.com

Dated: June 5, 2024

By: /Linnea Cipriano/
Linnea Cipriano