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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/454,944	02/05/2019	10198878	044228.010203	6521

30734 7590 01/16/2019

BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Andrew William Wright, Surrey, UNITED KINGDOM;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, D.C. 20036-5304

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/454,944	03/09/2017	Andrew William Wright	044228.010203	6521

TITLE OF INVENTION:

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	yes	$500	$0	$0	$500	2/6/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 BAKER & HOSTETLER LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE	(B) RESIDENCE: (CITY and STATE OR COUNTRY)
Andrew William Wright	Virginia Water, United Kingdom
Gillian Switalski	Virginia Water, United Kingdom

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☑ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 502036 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Mark H. Krietzman/ Date 2018-12-14

Typed or printed name Mark H. Krietzman Registration No. 41,128

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	15454944
Filing Date:	09-Mar-2017
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Filer:	Mark Krietzman H/Kate Duttera
Attorney Docket Number:	044228.010203

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	500	500

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**500**

Electronic Acknowledgement Receipt	
EFS ID:	34596714
Application Number:	15454944
International Application Number:	
Confirmation Number:	6521
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Customer Number:	30734
Filer:	Mark Krietzman H/Kate Duttera
Filer Authorized By:	Mark Krietzman H
Attorney Docket Number:	044228.010203
Receipt Date:	14-DEC-2018
Filing Date:	09-MAR-2017
Time Stamp:	18:58:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$500
RAM confirmation Number	121718INTEFSW00007180502036
Deposit Account	502036
Authorized User	Kate Duttera
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	010203_IF_Transmittal.pdf	74897 8c822481c4074f1f14cbdb707c62c1dfff5b441f	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30398 1ea7cc7e216b80c08425401a588ac328d5c6260f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	105295		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
15/454,944	03/09/2017	3661	1030	044228.010203	20	1

CONFIRMATION NO. 6521

CORRECTED FILING RECEIPT

30734
BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

Date Mailed: 12/13/2018

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Andrew William Wright, Surrey, UNITED KINGDOM;

Applicant(s)

Andrew William Wright, Surrey, UNITED KINGDOM;

Assignment For Published Patent Application

Andrew William Wright, Wentworth, UNITED KINGDOM
Gillian Switalski, Wentworth, UNITED KINGDOM

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 15/061,910 03/04/2016 PAT 9633487
which is a CON of 13/994,455 07/24/2013 PAT 9311271
which is a 371 of PCT/GB2011/052491 12/15/2011

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
UNITED KINGDOM 1118777.0 10/31/2011 No Access Code Provided
UNITED KINGDOM 1109759.9 06/10/2011 No Access Code Provided
UNITED KINGDOM 1101259.8 01/25/2011 No Access Code Provided
UNITED KINGDOM 1021292.6 12/15/2010 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/16/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/454,944**

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****
Title

Method and System for Logging Vehicle Behaviour

Preliminary Class

701

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

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The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

DOCKET NO.: 044228.010203 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Andrew William Wright **Confirmation No.: 6521**

Application No.: 15/454,944 **Group Art Unit: 3661**

Filing Date: March 9, 2017 **Examiner: Paige, Tyler D.**

For: METHOD AND SYSTEM FOR LOGGING VEHICLE BEHAVIOUR

REQUEST FOR CORRECTED FILING RECEIPT

1. A Corrected Filing Receipt is respectfully requested to correct the Applicant Information. A corrected Application Data Sheet and marked-up copy of the filing receipt accompany this request.

2. The Commissioner is hereby authorized to charge any payment, deficiency or credit any overpayment of the fees associated with this communication to Deposit Account No. 50-2036.

Date: December 10, 2018

/Mark H. Krietzman/
Mark H. Krietzman
Registration No. 41,128

Baker & Hostetler LLP
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Suite 900
Costa Mesa, CA 92626
Telephone: (714) 754-6600
Facsimile: (714) 754-6611

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
15/454,944	03/09/2017	3661	730	044228.010203	20	1

CONFIRMATION NO. 6521

CORRECTED FILING RECEIPT

30734
BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

OC000000090887495

Date Mailed: 04/25/2017

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

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Andrew William Wright, Surrey, UNITED KINGDOM;

Applicant(s)

~~Gillian Switalski, Wentworth, UNITED KINGDOM;~~

Assignment For Published Patent Application

Andrew William Wright, Wentworth, UNITED KINGDOM
Gillian Switalski, Wentworth, UNITED KINGDOM

Power of Attorney: None

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UNITED KINGDOM 1109759.9 06/10/2011 No Access Code Provided
UNITED KINGDOM 1101259.8 01/25/2011 No Access Code Provided
UNITED KINGDOM 1021292.6 12/15/2010 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/16/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/454,944**

Projected Publication Date: 06/22/2017

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****
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Method and System for Logging Vehicle Behaviour

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For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andrew	William	Wright	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Surrey	Country of Residence i	GB

Mailing Address of Inventor:

Address 1	Cedar Springs, Waverly Drive		
Address 2			
City	Virginia Water	**State/Province**	
Postal Code	GU25 4 PZ	**Country** i	GB

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	30734		
Email Address	patents@bakerlaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	Method and System for Logging Vehicle Behaviour		
Attorney Docket Number	044228.010203	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	25	**Suggested Figure for Publication (if any)**	

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	30734		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	15061910	2016-03-04

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15061910	Continuation of	13994455	2013-07-24	9311271	2016-04-12

Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13994455	a 371 of international	PCTGB2011052491	2011-12-15

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
1118777.0	GB	2011-10-31	

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
1109759.9	GB	2011-06-10	

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
1101259.8	GB	2011-01-25	

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
1021292.6	GB	2010-12-15	

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

~~Assignee~~	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☐

Prefix	Given Name	Middle Name	Family Name	Suffix
	~~Gillian~~		~~Switalski~~	

Mailing Address Information For Applicant:

Address 1	~~16 Monks Road~~		
Address 2			
City	~~Wentworth~~	**State/Province**	
Country	~~GB~~	Postal Code	~~GU25 4RR~~
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button.

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix
	Andrew	William	Wright	

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1	16 Monks Road		
Address 2			
City	Wentworth	**State/Province**	
Country i	GB	Postal Code	GU25 4RR
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Assignee 2

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix
	Gillian		Switalski	

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Mailing Address Information For Assignee including Non-Applicant Assignee:			
Address 1	16 Monks Road		
Address 2			
City	Wentworth	**State/Province**	
Country i	GB	Postal Code	GU25 4RR
Phone Number		Fax Number	
Email Address			
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.			

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Mark H. Krietzman/			Date (YYYY-MM-DD)	2018-12-10
First Name	Mark H.	Last Name	Krietzman	Registration Number	41128
Additional Signature may be generated within this form by selecting the Add button.					

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Andrew William Wright

Application No./Patent No.: 15/454,944 Filed/Issue Date: 2017-03-09

Titled: METHOD AND SYSTEM FOR LOGGING VEHICLE BEHAVIOUR

Gillian Switalski, a individual

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☐ The assignee of the entire right, title, and interest.

2. ☑ An assignee of less than the entire right, title, and interest (check applicable box):

   ☑ The extent (by percentage) of its ownership interest is 50 %. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☑ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 047609, Frame 0417, or for which a copy thereof is attached.

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

   The document was recorded in the United States Patent and Trademark Office at

   Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

   The document was recorded in the United States Patent and Trademark Office at

   Reel _____, Frame _____, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Mark H. Krietzman/	2018-12-10
Signature	Date
Mark H. Krietzman	41,128
Printed or Typed Name	Title or Registration Number

[Page 2 of 2]

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Andrew William Wright

Application No./Patent No.: 15/454,944 Filed/Issue Date: 2017-03-09

Titled: METHOD AND SYSTEM FOR LOGGING VEHICLE BEHAVIOUR

Andrew William Wright, a individual

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☐ The assignee of the entire right, title, and interest.

2. ☑ An assignee of less than the entire right, title, and interest (check applicable box):

   ☑ The extent (by percentage) of its ownership interest is 50 %. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☑ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 047609, Frame 0417, or for which a copy thereof is attached.

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

   The document was recorded in the United States Patent and Trademark Office at

   Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

   The document was recorded in the United States Patent and Trademark Office at

   Reel _____, Frame _____, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Mark H. Krietzman/	2018-12-10
Signature	Date
Mark H. Krietzman	41,128
Printed or Typed Name	Title or Registration Number

[Page 2 of 2]

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	15454944
Filing Date:	09-Mar-2017
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Filer:	Mark Krietzman H/Kate Duttera
Attorney Docket Number:	044228.010203

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
PROCESSING FEE, EXCEPT PROV. APPLS.	2830	1	70	70
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**70**

Electronic Acknowledgement Receipt	
EFS ID:	34541601
Application Number:	15454944
International Application Number:	
Confirmation Number:	6521
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Customer Number:	30734
Filer:	Mark Krietzman H/Kate Duttera
Filer Authorized By:	Mark Krietzman H
Attorney Docket Number:	044228.010203
Receipt Date:	10-DEC-2018
Filing Date:	09-MAR-2017
Time Stamp:	20:01:29
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$70
RAM confirmation Number	121118INTEFSW00007585502036
Deposit Account	502036
Authorized User	Kate Duttera
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Corrected Filing Receipt	010203_RequestforCorrectedFilingReceipt_Dec10.pdf	101296 ee8896bbe42dc4d359d6692031b10452ce347166	no	1
Warnings:					
Information:					
2	Request for Corrected Filing Receipt	010203_Markedup_OFR_Dec10_.pdf	129313 0314b255d6edc6806d80b1c67fb6025877cb95ea	no	4
Warnings:					
Information:					
3	Application Data Sheet	010203_Supp_ADS_Dec10.pdf	144474 bd385a2a6d2db292bff98faef1d8e5de6e994b5f	no	9
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
4	Assignee showing of ownership per 37 CFR 3.73	Switalski_373cStatement_.pdf	118240 8daa227c6f17f62e6a1b5bb8d1435d46365f276c	no	3
Warnings:					
Information:					
5	Assignee showing of ownership per 37 CFR 3.73	Wright_373cStatement_.pdf	118242 32375d6dca7c5af7ce2d388b358103bb3b18f9b6	no	3
Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	30870 81616626ff9860fb97a611c6f70a12cfd0ad7037	no	2
Warnings:					

Information:	
Total Files Size (in bytes):	642435

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Document code: WFEE

United States Patent and Trademark Office
Sales Receipt for Accounting Date: 12/12/2018

VVAN11 ADJ #00000006 Mailroom Dt: 12/10/2018
Seq No: 7585 Sales Acctg Dt: 12/11/2018 502036 15454944
01 FC : 2830 70.00 CR

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

30734 7590 11/06/2018
BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

EXAMINER
PAIGE, TYLER D

ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 11/06/2018

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/454,944	03/09/2017	Andrew William Wright	044228.010203	6521

TITLE OF INVENTION: Method and System for Logging Vehicle Behaviour

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	02/06/2019

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

30734 7590 11/06/2018
BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/454,944	03/09/2017	Andrew William Wright	044228.010203	6521

TITLE OF INVENTION: Method and System for Logging Vehicle Behaviour

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	02/06/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
PAIGE, TYLER D	3661	701-033400

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1_____
2_____
3_____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑Issue Fee ❑Publication Fee (if required) ❑Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/454,944	03/09/2017	Andrew William Wright	044228.010203	6521

30734 7590 11/06/2018
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WASHINGTON, DC 20036-5304

EXAMINER
PAIGE, TYLER D

ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 11/06/2018

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 15/454,944	Applicant(s) Wright, Andrew William	
	Examiner TYLER D PAIGE	Art Unit 3661	AIA Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 07/23/2018.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-27 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file areply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 03/05/2018.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/TYLER D PAIGE/
Examiner, Art Unit 3661

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Allowable Subject Matter

1. Claims 1 – 27 are allowed.

2. The following is an Examiner's Statement for reasons for allowance. None of the references of record either alone or in combination teaches or suggest the following limitations as claimed in claim 1, A mobile telecommunications device configured to log driving information associated with a vehicle, the mobile telecommunications device comprising: a sensor set comprising an image sensor, an audio sensor, an accelerometer or a positioning module, or a combination thereof, a user interface; a processor and; a memory; the mobile telecommunications device being configured to: determine, based on at least one of the inputs received by the user interface and sensor data from the device's sensor set, a start of a driving period during which the mobile device is removably attached to the vehicle and the vehicle is in use; process the sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven; and store a selection of the driving information to the memory; wherein the driving information is derived without data from the vehicle sensors, and the mobile telecommunications device is further configured to: interface with an external device, the external device having access to external driving information associated with a condition of the vehicle; and, to receive at least a portion of the external driving

information from the external device. This limitation, in combination with the other elements of the claim, is not shown or suggested in the prior art of record.

3. None of the references of record either alone or in combination teaches or suggest the following limitations as claimed in claim 26, A mobile telecommunications device configured to log driving information associated with a vehicle, the mobile telecommunications device comprising: a sensor set comprising an image sensor, an audio sensor, an accelerometer or a positioning module, or a combination thereof, a user interface; a processor; and a memory; the mobile telecommunications device being configured to: determine, based on at least one of the inputs received by the user interface and sensor data from the device's sensor set, a start of a driving period during which the mobile device is removably affixed to the vehicle and the vehicle is in use; process the sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven; and store a selection of the driving information to the memory; wherein the driving information is derived without data from the vehicle sensors, and the mobile telecommunications device is further configured to: interface with an external device, the external device having access to external driving information associated with a condition of the vehicle; and to receive at least a portion of the external driving information from the external device. This limitation, in combination with the other elements of the claim, is not shown or suggested in the prior art of record.

4. None of the references of record either alone or in combination teaches or suggest the following limitations as claimed in claim 27, A mobile telecommunications device configured to log driving information associated with a vehicle, the mobile telecommunications device comprising: a sensor set comprising an image sensor, an audio sensor, an accelerometer or a positioning module, or a combination thereof, a user interface; a processor and; a memory; the

mobile telecommunications device being configured to: 7 determine, based on at least one of the inputs received by the user interface and sensor data from the device's sensor set, a start of a driving period during which the mobile device is removably affixed to the vehicle and the vehicle is in use; process the sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven, the processing involving the use of a neural network on the mobile telecommunications device to determine whether the driving information represents an acceptable or unacceptable driving pattern; and, store a selection of the driving information to the memory; wherein the driving information is derived without data from the vehicle sensors, and the mobile telecommunications device is further configured to: interface with an external device, the external device having access to external driving information associated with a condition of the vehicle; and to receive at least a portion of the external driving information from the external device. This limitation, in combination with the other elements of the claim, is not shown or suggested in the prior art of record.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submission should be clearly labeled, "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TYLER D PAIGE whose telephone number is (571)270-5425. The examiner can normally be reached on M-F 7:00am - 6:00pm (mst).

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TYLER D PAIGE/
Examiner, Art Unit 3661

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/454,944	Wright, Andrew William
	Examiner	**Art Unit**
	TYLER D PAIGE	3661

CPC - Searched*		
Symbol	**Date**	**Examiner**

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**
G07C5/02 or G07C5/008 or H04M1/72527 or G06Q40/08 or G07C5/0858 or G07C5/0866 or H04M1/6041	01/19/2018	tdp

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
701	33.4	01/19/2018	tdp

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	01/19/2018	tdp
East Search	01/19/2018	tdp
NPL Search	01/19/2018	tdp

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
701	33.4	10/29/2018	tdp

/TYLER D PAIGE/ Examiner, Art Unit 3661	/TYLER PAIGE/ Examiner.Art Unit 3661

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/454,944	Wright, Andrew William
	Examiner	**Art Unit**
	TYLER D PAIGE	3661

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/19/2018	10/29/2018							
1	1	✓	=							
2	2	✓	=							
3	3	✓	=							
4	4	✓	=							
5	5	✓	=							
6	6	✓	=							
7	7	✓	=							
8	8	✓	=							
9	9	✓	=							
10	10	✓	=							
11	11	✓	=							
18	12	✓	=							
19	13	✓	=							
12	14	✓	=							
13	15	✓	=							
14	16	✓	=							
15	17	✓	=							
16	18	✓	=							
17	19	✓	=							
20	20	✓	=							
21	21	✓	=							
22	22	✓	=							
23	23	✓	=							
24	24	✓	=							
25	25	✓	=							
26			=							
27			=							

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/454,944	Wright, Andrew William
	Examiner	**Art Unit**
	TYLER D PAIGE	3661

CPC

Symbol					Type	Version
G07C	/	5	/	02	F	2013-01-01
G07C	/	5	/	008	I	2013-01-01
G07C	/	5	/	0858	I	2013-01-01
G07C	/	5	/	0866	I	2013-01-01
H04M	/	1	/	72527	I	2013-01-01
G06F	/	17	/	00	I	2013-01-01
G09B	/	19	/	14	I	2013-01-01
G06Q	/	40	/	08	I	2013-01-01
H04M	/	1	/	6075	I	2013-01-01
H04M	/	1	/	6041	I	2013-01-01
G09B	/	5	/	02	I	2013-01-01
H04M	/	1	/	72525	I	2013-01-01
H04M	/	1	/	7253	I	2013-01-01
H04M	/	1	/	72569	I	2013-01-01
H04M	/	2201	/	36	A	2013-01-01
H04M	/	2250	/	12	A	2013-01-01
H04M	/	2250	/	74	A	2013-01-01

CPC Combination Sets

Symbol					Type	Set	Ranking	Version
	/		/					

NONE (Assistant Examiner) (Date)		**Total Claims Allowed:** 27	
/TYLER D PAIGE/ Examiner, Art Unit 3661 (Primary Examiner) (Date)	29 October 2018	O.G. Print Claim(s) 1	O.G. Print Figure 1

U.S. Patent and Trademark Office Part of Paper No.: 20181029

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/454,944	Wright, Andrew William
	Examiner	**Art Unit**
	TYLER D PAIGE	3661

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G07C	/	5	/	02
H04M	/	1	/	60
G09B	/	5	/	02

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
701	33.4

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 27	
/TYLER D PAIGE/ Examiner, Art Unit 3661 (Primary Examiner)	29 October 2018 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

U.S. Patent and Trademark Office

Part of Paper No.: 20181029

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/454,944	Wright, Andrew William
	Examiner	**Art Unit**
	TYLER D PAIGE	3661

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10	17	19										
2	2	11	11	20	20										
3	3	18	12	21	21										
4	4	19	13	22	22										
5	5	12	14	23	23										
6	6	13	15	24	24										
7	7	14	16	25	25										
8	8	15	17	26	26										
9	9	16	18	27	27										

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 27	
/TYLER D PAIGE/ Examiner, Art Unit 3661 (Primary Examiner)	29 October 2018 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

U.S. Patent and Trademark Office Part of Paper No.: 20181029

Substitute for Form SB08a/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(use as many sheets as necessary)*	***Complete if Known***	
	Application Number	15/454,944
	Filing Date	March 9, 2017
	First Named Inventor	Wright, Andrew William
	Art Unit	3661
	Examiner Name	Paige, Tyler D.
	Attorney Docket Number	044228.010203

U. S. PUBLICATION AND PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number Number – Kind Code (if known)	Publication or Grant Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
	38	2009/0157255 A1	06-18-2009	Plante
	39	2010/0317314 A1	12-16-2010	Roland
	40	2011/0212717 A1	09-01-2011	Rhoads et al.
	41	2017/0178422 A1	06-22-2017	Wright
	42	8,554,468 B1	10-08-2013	Bullock
	43	8,781,442 B1	07-15-2014	Link II
	44	9,311,271 B2	04-12-2016	Wright
	45	9,633,487 B2	04-25-2017	Wright

Examiner Signature	/TYLER D PAIGE/ (10/29/2018)	**Date Considered**	10/29/2018

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in § 1.56(c) more than three months prior to the filing of the information disclosure statement.

CONTENT OF IDS

☐ Copies of reference numbers are not being submitted because they were previously cited by or submitted to the U.S. Patent and Trademark Office in patent application number , filed for which a claim for priority under 35 U.S.C. § 120 has been made in the instant application.

612014843.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.D.P/

Substitute for Form SB08a/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(use as many sheets as necessary)*	***Complete if Known***	
	Application Number	15/454,944
	Filing Date	March 9, 2017
	First Named Inventor	Wright, Andrew William
	Art Unit	3661
	Examiner Name	Paige, Tyler D.
	Attorney Docket Number	044228.010203

☐ The month of publication for reference numbers is not available. However, the year of publication for these references is sufficiently earlier than the effective US filing date and any foreign priority date so that the particular month of publication is not in issue pursuant to 37 CFR § 1.98(b).

STATEMENT UNDER 37 C.F.R. § 1.704(d)(1)

☐ This information disclosure statement is in compliance with §§ 1.97 and 1.98 and will not be considered a failure to engage in reasonable efforts to conclude prosecution (processing or examination) of the application under paragraphs 37 C.F.R. § 1.704(c)(6), (c)(8), (c)(9), or (c)(10) because each item of information contained in the information disclosure statement:

☐ Was first cited in any communication from a patent office in a counterpart foreign or international application or from the Office, and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the information disclosure statement; or

☐ Is a communication that was issued by a patent office in a counterpart foreign or international application or by the Office, and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the information disclosure statement.

☐ See attached certification statement.

☒ The fee set forth in § 1.17(p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

Please charge any deficiency or credit any overpayment to Deposit Account No. 23-3050.

612014843.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.D.P/

Substitute for Form SB08a/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(use as many sheets as necessary)*	***Complete if Known***	
	Application Number	15/454,944
	Filing Date	March 9, 2017
	First Named Inventor	Wright, Andrew William
	Art Unit	3661
	Examiner Name	Paige, Tyler D.
	Attorney Docket Number	044228.010203

SIGNATURE

Mark H. Krietzman
Mark H. Krietzman
Registration No. 41128

Date: March 2, 2018

Baker & Hostetler LLP
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2929 Arch Street, 12th Floor
Philadelphia, PA 19104-2891
Telephone: (215) 568-3100
Facsimile: (215) 568-3439

612014843.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.D.P/

UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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Alexandria, VA 22313-1450
www.uspto.gov

SEP 07 2018

BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON DC 20036-5304

In re Application of	:	
WRIGHT, ANDREW WILLIAM	:	SUA SPONTE EXERCISE
Application No. 15/454,944	:	OF
Filed: March 9, 2017	:	SUPERVISORY REVIEW
For: METHOD AND SYSTEM FOR LOGGING VEHICLE	:	
BEHAVIOUR	:	

A sua sponte review of the above-noted application file has been conducted. As a result, it has been determined that certain errors on the part of the Office have occurred. In particular, it has been determined that the holding of abandonment on August 29, 2018 was premature. The purpose of this communication is to correct this error and clarify the record.

The record of this application indicates that a non-final rejection was mailed on January 23, 2018. Applicant timely filed a response to the Office action on July 23, 2018 with the appropriate fees for a three month extension of time. However, the response was not entered into records and a Notice of Abandonment was inadvertently mailed on August 29, 2018.

Accordingly, the holding of abandonment is premature and hereby **VACATED**.

The application will be returned to the Examiner of record for consideration of the response filed July 23, 2018.

Any inquiries related to this decision may be directed to Supervisory Patent Examiner Thomas Black at 571-272-6956.

Rinaldi Rada, Director
Technology Center 3600
(571) 272-5050

TB/LM: 08/29/2018

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/454,944	03/09/2017	Andrew William Wright	044228.010203	6521

30734 7590 08/29/2018
BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

EXAMINER
PAIGE, TYLER D

ART UNIT	PAPER NUMBER
3661	

NOTIFICATION DATE	DELIVERY MODE
08/29/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

edervis@bakerlaw.com
eofficemonitor@bakerlaw.com
patents@bakerlaw.com

PTOL-90A (Rev. 04/07)

Notice of Abandonment	Application No.	Applicant(s)
	15/454,944	Wright, Andrew William
	Examiner	**Art Unit**
	TYLER D PAIGE	3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

This application is abandoned in view of:

1. ☑ Applicant's failure to timely file a proper reply to the Office letter mailed on 23 January 2018.
   (a) ☐ A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
   (b) ☐ A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 to the final rejection. (A proper reply under 37 CFR 1.113 to a final rejection consists only of:(1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) if this is utility or plant application, a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. Note that RCEs are not permitted in design applications.)
   (c) ☐ A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
   (d) ☑ No reply has been received.

2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
   (a) ☐ The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
   (b) ☐ The submitted fee of $ _____ is insufficient. A balance of $ _____ is due.
   The issue fee required by 37CFR 1.18 is $ _____ . The publication fee, if required by 37 CFR 1.18(d), is $ _____ .
   (c) ☐ The issue fee and publication fee, if applicable, has not been received.

3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
   (a) ☐ Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
   (b) ☐ No corrected drawings have been received.

4. ☐ The letter of express abandonment which is signed by the attorney or agent of record or other party authorized under 37 CFR 1.33 (b). See 37 CFR 1.138(b).

5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34) upon the filing of a continuing application.

6. ☐ The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.

7. ☐ The reason(s) below:

_____

/TYLER D PAIGE/ Examiner, Art Unit 3661	

Petitions to revive under 37 CFR 1.137, or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination
	15/454,944	WRIGHT, ANDREW WILLIAM

Document Code - DISQ	Internal Document – DO NOT MAIL

TERMINAL DISCLAIMER	☐ APPROVED	☒ DISAPPROVED
Date Filed : 23 July, 2018	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:

/CRYSTAL QUEEN/

Technology Center: PLRC

Telephone:

The person who signed the terminal disclaimer is not the applicant, patentee or an attorney or agent of record. 37 CFR 1.321(a) and (b). (See FP 14.26.08)

(Note: PoA can be given to a customer number, wherein all practitioners listed under the customer number have PoA. given to a list of practitioners by registration number, the list may not comprise more than 10 practitioners or a separate paper signed by a 37 CFR I.33(b) party must be in the record identifying which of the practitioners, up to 10, are recognized as having PoA. If the applicant is a juristic entity (e.g., corporation), a representative of the applicant cannot sign the TD unless it is established that the representative is a party authorized to act on behalf of the applicant.)

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/454,944	Filing Date 03/09/2017	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **07/23/2018**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 27	Minus	** 25	= 2	X $50 =	100
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $230 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	**100**

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

SLIE
ERIC DANTZLER

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Andrew William Wright	)	Group Art Unit: 3661
	)	
Application No.: 15/454,944	)	Examiner: Not Yet Assigned
	)	
Filed: March 9, 2017	)	Confirmation No.: 6521

Title: Method and System for Logging Vehicle Behaviour

Mail Stop: Amendments
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NON-FINAL OFFICE ACTION

Madam:

This is in response to the Office Action dated January 23, 2018, to which a response is due hereby with a three-month extension of time by July 23, 2018. In view of the following amendments and remarks, Applicants respectfully request the Examiner to reconsider and withdraw the outstanding rejections and allow all claims pending in the application.

Amendments to the Claims are reflected on page **2** of this paper.

Remarks begin on page **9** of this paper.

CLAIMS

1. (Previously Presented) A mobile telecommunications device configured to log driving information associated with a vehicle, the mobile telecommunications device comprising:

a sensor set comprising an image sensor, an audio sensor, an accelerometer or a positioning module, or a combination thereof;

a user interface;

a processor and;

a memory;

the mobile telecommunications device being configured to:

determine, based on at least one of the inputs received by the user interface and sensor data from the device's sensor set, a start of a driving period during which the mobile device is removably attached to the vehicle and the vehicle is in use;

process the sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven; and

store a selection of the driving information to the memory;

wherein the driving information is derived without data from the vehicle sensors, and the mobile telecommunications device is further configured to:

interface with an external device, the external device having access to external driving information associated with a condition of the vehicle; and,

to receive at least a portion of the external driving information from the external device.

2. (Currently Amended) ~~The~~ A mobile telecommunications device according to claim 1, wherein the mobile telecommunications device is controlled by a downloaded application to control the mobile device to detect occurrence of a predetermined event

and in response take at least one predetermined action.

3. (Currently Amended) ~~The~~ A mobile telecommunication device according to claim 2, wherein predetermined action is storing driving information associated with that event to the memory.

4. (Currently Amended) ~~The~~ A mobile telecommunication device according to claim 2, wherein predetermined action is storing driving information captured at a higher sampling rate than when an event is not detected.

5. (Currently Amended) ~~The~~ A mobile telecommunication device according to claim 2, wherein predetermined action is transmitting driving information via a wireless telecommunication module of the mobile telecommunication device to a remote system.

6. (Currently Amended) ~~The~~ A mobile telecommunications device according to claim 2, wherein the predetermined action comprises providing feedback to a user to indicate that an event has been detected, the mobile telecommunications device being configured to receive a user interaction to confirm or deny whether the detected event has actually occurred following said feedback.

7. (Currently Amended) ~~The~~ A mobile telecommunications device according to claim 6, wherein the feedback comprises notifying a user that a further action has been scheduled, and will be taken within a predetermined period, the mobile telecommunications device being further configured to receive a user interaction to confirm or deny whether the further scheduled action should be taken within a predetermined period.

8. (Original) A mobile telecommunications device according to claim 2, wherein the predetermined action comprises communicating to a remote system that an event has been detected, the mobile telecommunications device being further configured to receive from the remote system a request to transmit to the remote system selected portions of the

driving information associated with the detected event.

9. (Currently Amended) ~~The~~ A mobile telecommunications device according to claim 2, wherein the memory comprises:

a long term memory for persistently storing driving information and a short term memory for transiently storing driving information, wherein the short term memory receives driving information at a higher update rate than the long term memory, the mobile telecommunications device being further configured to:

write driving information to the short term memory at a predetermined update rate during the driving period in a predetermined sequence; and,

overwrite the driving information previously written to the short term memory in accordance with the predetermined sequence.

10. (Currently Amended) ~~The~~ A mobile telecommunications device according to claim 9, wherein the mobile telecommunications device is controlled by the downloaded application to control the mobile device to detect an occurrence of a predetermined event and in response transfer data from the short term memory to the long term memory.

11. (Currently Amended) ~~The~~ A mobile telecommunications device according to claim 2, wherein the mobile telecommunications device is controlled by the downloaded application to control the mobile device to process the driving information to generate a driving score associated with a particular driver.

12. (Currently Amended) ~~The~~ A mobile telecommunications device according to claim 1, wherein the mobile telecommunications device utilizes its own power supply.

13. (Currently Amended) ~~The~~ A mobile telecommunications device according to claim 1, wherein the mobile telecommunications device is a smartphone.

14. (Original) A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to manage voice-calls incoming to the

mobile telecommunications device during a driving period.

15. (Original) A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to enable a hands-free mode of operation on detection of the driving period.

16. (Original) A mobile telecommunications device according to claim 15, wherein the hands-free mode of operation comprises enabling voice-activated commands on the mobile device.

17. (Original) A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to detect the occurrence of a predetermined event of significance, such as a crash, and in response to store driving information associated with that event to the memory.

18. (Original) A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to detect the occurrence of a predetermined event of significance, such as a crash, and in response to transmit driving information associated with that event via the wireless telecommunication module to a remote data-logging system.

19. (Original) A mobile telecommunications device according to claim 2, wherein the at least one predetermined action comprises providing the user with options to control the mobile device to take further actions.

20. (Original) A mobile telecommunications device according to claim 1, further arranged to interface with the external device wirelessly.

21. (Previously Presented) A mobile telecommunications device according to claim 1, wherein the process step comprises determination of at least one of: vehicle acceleration events and vehicle braking events.

22. (Previously Presented) A mobile telecommunications device according to claim 21, wherein the process step comprises determination of vehicle swerving events and the determination of such events occurs when data from the sensor set accords with preset parameters.

23. (Previously Presented) A mobile telecommunications device according to claim 1, wherein the process step comprises determination of both vehicle acceleration events and vehicle braking events.

24. (Previously Presented) A mobile telecommunications device according to claim 23, wherein the process step comprises the determination of vehicle swerving events and the determination of such events occurs when data from the sensor set accords with preset parameters.

25. (Previously Presented) A mobile telecommunications device according to claim 1, wherein the mobile telecommunications device further comprises a proximity sensor and the instructions, upon execution by the processor, enable the mobile telecommunications device to detect the proximity of the mobile telecommunications device to the vehicle.

26. (New) A mobile telecommunications device configured to log driving information associated with a vehicle, the mobile telecommunications device comprising:

a sensor set comprising an image sensor, an audio sensor, an accelerometer or a positioning module, or a combination thereof;

a user interface;

a processor; and

a memory;

the mobile telecommunications device being configured to:

determine, based on at least one of the inputs received by the user interface and sensor data from the device's sensor set, a start of a driving period during which the mobile device is removably affixed to the vehicle and the vehicle is in use;

process the sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven; and

store a selection of the driving information to the memory;

wherein the driving information is derived without data from the vehicle sensors, and the mobile telecommunications device is further configured to:

interface with an external device, the external device having access to external driving information associated with a condition of the vehicle; and

to receive at least a portion of the external driving information from the external device.

27. (New) A mobile telecommunications device configured to log driving information associated with a vehicle, the mobile telecommunications device comprising:

a sensor set comprising an image sensor, an audio sensor, an accelerometer or a positioning module, or a combination thereof;

a user interface;

a processor and;

a memory;

the mobile telecommunications device being configured to:

determine, based on at least one of the inputs received by the user interface and sensor data from the device's sensor set, a start of a driving period during which the mobile device is removably affixed to the vehicle and the vehicle is in use;

process the sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven, the processing involving the use of a neural network on the mobile telecommunications device to determine whether the driving information represents an acceptable or unacceptable driving pattern; and,

store a selection of the driving information to the memory;

wherein the driving information is derived without data from the vehicle sensors, and the mobile telecommunications device is further configured to:

interface with an external device, the external device having access to external driving information associated with a condition of the vehicle; and

to receive at least a portion of the external driving information from the external device.

REMARKS

Claims 2-7 and 9-13 have been amended. Claims 26 and 27 are new. No new matter has been added. Support for the amendments can be found in the as-filed application at, e.g., [0033], [0090]-[0091], [0109], [0112].

Double Patenting

Claims 1-25 are rejected on the grounds of double patenting as being unpatentable over U.S. Patent 9,311,271, U.S. Patent 9,633,487, and U.S. Patent Application 15/454,937.

Terminal disclaimers have been filed herewith with regard to U.S. Patent 9,311,271 and U.S. Patent 9,633,487.

The applicant respectfully requests reconsideration of the double patenting rejection based on application no. 15/454,937. The pending claims in the present application and application no. 15/454,937 recite patentably distinct subject matter, as the table below shows:

15/454,944 (claim 1)	15/454,937 (claim 1)
wherein . . . the mobile telecommunications device is further configured to: • interface with an external device, the external device having access to external driving information associated with a condition of the vehicle; and, • to receive at least a portion of the external driving information from the external device.	wherein . . . the memory comprises: • a long term memory for persistently storing driving information and a short term memory for transiently storing driving information, wherein the short term memory receives driving information at a higher update rate than the long term memory, the mobile telecommunications device being further configured to: • write driving information to the short term memory at a predetermined update rate during the driving period in a predetermined sequence; and, • overwrite the driving information previously written to the short term memory in accordance with the predetermined sequence.

In addition to the independent claims in the two applications, no dependent claims in the two applications recite patentably indistinct subject matter.

Claim Rejections - 35 USC §103

Claims 1-8, 11-25 are rejected under 35 USC 103 as being unpatentable over Choi (US 2010-0030540) in view of Katsman (US 2010-0157061).

Prima facie obviousness requires that the prior art teach or suggest every one of applicant's claim elements.[1] "Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious."[2]

Regarding the non-obviousness of Claim 1, the applicants disagree that Choi in view of Katsman teaches or suggests all of the claim elements. The applicants note that during the prosecution of the parent patent application no. 13,944,455, a substantially similar claim (claim 15) was found to be allowable subject matter. (See September 23, 2015 office action in US application no. 13/944,455 at item 10). The applicants assert that the pending obviousness rejections are made only with the benefit of hindsight, as the claimed features are not entirely taught or suggested by the cited references, as explained below.

Choi merely describes a conventional black box system which may be permanently installed to a vehicle and which records data from the sensor set of the vehicle. Therefore, the feature of the claim which requires the driving information to be derived without data from the vehicle sensors is simply not present in Choi. There is no

[1] MPEP 2143.03 ("All words in a claim must be considered in judging the patentability of that claim against the prior art.").
[2] *In re Fine*, 871 F.2d 1071, 1076 (Fed. Cir. 1988).

disclosure in Choi of a mobile telecommunications device which can be removably attached or affixed to the vehicle.

The applicants disagree that there is inadequate motivation to combine the cited documents as suggested in the Office Action. A need to ensure the black box recording device is not damaged in an accident does not create a motivation to combine the alleged teachings of Katsman and Choi. A black box recorder in a car (or even an aeroplane) is specifically designed to withstand a crash. That is its whole purpose and that is why it requires careful installation by a trained installer and also why it is so expensive. Katsman in contrast provides a general purpose mobile device in a holder which is more susceptible to damage in an accident as the mobile device is not physically designed to withstand a vehicle crash and is positioned in the vehicle be accessible to the driver and not specifically in a position which is less likely to be damaged. Furthermore, the purpose mobile phone of Katsman is an alternative to the black box of Choi. It operates in a similar manner taking readings from vehicle sensors and recording data. Katsman even teaches away from the combination as in Para [0006] it discusses black box recorders and the problems of the prohibitive cost of installing a black box recorder. Accordingly, at best Katsman could be seen as a replacement for Choi but not a reason to combine the teachings together.

Choi describes a system for reconstructing a traffic accident. Figure 1 shows the data collection unit 100 which comprise black boxes 110 driver data collectors 130 and position data collectors 150 as well as roadside sensors and weather data collectors. The black boxes are installed into the vehicle and record data from the vehicle sensors for example ‘engine operation status data’ and ‘component status data of the vehicle’ (see

Para [0022]). Also, Para [0024] states that the black box records image data from cameras installed at the periphery of the vehicle. Furthermore, Para [0032] mentions collecting driver data from pressure sensors installed on the driver seat and temperature sensors in the driving wheel and speed changes from the speedometer of the vehicle. From this it is clear that the black box does not have its own sensor set but rather obtains sensor data from the sensors of the vehicle itself. This also further supports the view that the black box device of Choi is permanently installed to the vehicle.

The use of a mobile telecommunications device with its own sensor set in place of a black box solution, which is expensive to install and update, is one important aspect of the invention. In this regard, Katsman is the most relevant disclosure. However, what Katsman does not do is appreciate that driving information can be derived without data from the vehicle sensors. This exemplary differentiator enables the mobile telecommunications device to be truly independent of the vehicle and useable in any vehicle regardless of that vehicle's age or availability of compatible sensors/ interfaces.

There is no motivation to combine Choi and Katsman as they present mutually exclusive solutions to data recording during a driving period. Even if they were combined, they would not disclose all of the features in Claim 1. In particular, the feature of deriving driving information without data from the vehicle sensors is not taught or suggested. Katsman and Choi both teach to use the vehicle sensors for obtaining sensor data, see Choi Paras [0022] and [0060] for example, and Katsman Paras [0058] and [0078] and Figure 1 for example. The office action does not identify any teaching or suggestion this feature of the claim.

Regarding the feature of Claim 1 that lists the tasks which the mobile device is configured to carry out, which includes: 'process sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is being driven', the applicants disagree that any teaching or suggestion of this claim element has been identified in the Office Action. The Office Action relies upon Choi Para [0040] to support this view that this feature is disclosed. However, this paragraph is concerned with the accident data analyzer 310, which can be seen from Figure 1 to be located at the Accident Analyzing Centre 300. It is not located on the mobile telecommunications device or in the vehicle black box 110. Accordingly, Choi does not teach or suggest this claim element but rather determines driving information at the data center to which the data collecting units communicate. There is a clear disadvantage to the Choi set up as it requires the transmission of large amounts of data from the black boxes in order to determine the driving information of the claim. In the present invention there is no need to transmit anything but important data which has been determined from the driving information on the mobile telecommunication device.

The applicants disagree that Choi discloses both the feature of the mobile telecommunications device interfacing with an external device, which has access to external driving information associated with the condition of the vehicle, and the receipt by the mobile telecommunications device of the external driving information from the external device in Paras [0040] and [0041]. While an external device of a roadside sensor 120 is described in Choi, there is no disclosure of that roadside sensor interfacing with the mobile telecommunications device or the black box in the vehicle. Also there is no teaching or suggestion of the roadside sensor communicating with the mobile

telecommunications device or the black box in the vehicle. Rather, the roadside sensors 'transmit/communicate data to/with the accident analyzing center through a wired or wireless network' Para [0025]. There is also no teaching or suggestion of the recited feature of the mobile telecommunications device being arranged 'to receive at least a portion of the external driving information from the external device.' Accordingly, the applicants respectfully assert that Claim 1 is nonobvious over the identified prior art.

The remaining dependent claims are allowable because they depend from an allowable claim. However, further observations showing that the features of these claims are not disclosed are set out below. For the further reasons below, the particular dependent claims discussed are nonobvious over the cited art.

In Claim 4 the predetermined action of the downloadable app is recited as storing driving information captured at a higher rate than when an event is not detected. Both Paras [0006] and [0022] of Choi, which have been cited as disclosing this feature are directed to the amount of time that a sample is obtained from captured data with the start and end period of that time being determined by the detection of an accident. This information is analyzed at the data position analyzer 315 which is at the central server (accident analyzing center 300) and not at the mobile device (see Figure 1). Furthermore, the data which is read by the position analyzer 315 is constantly recorded. There is no disclosure in Choi of a differentiation of the rate of data recording, and so the information cannot be captured at a higher sampling rate. Accordingly, the applicants respectfully assert that Claim 4 is nonobvious in view of the cited portions of Choi.

The Office Action identifies Katsman Para [0078] as disclosing the features of Claim 6 and Claim 7. The applicants disagree, as Claim 6 requires the confirmation of an

event occurring whereas the above paragraph refers to the mobile device simply having an input/output interface. This general disclosure of an interface does not teach or suggest that a confirmation would be required before an action was taken. Similarly Claim 7 requires the deferment of action indicated to the mobile device by the user for a predetermined time period. Nothing in Katsman at Para [0078] teaches or suggests this feature, and accordingly, the claim is nonobvious over the cited references.

Referring to the rejection to Claim 8, Claim 8 is dependent on Claim 2 which requires the downloaded application to control the mobile device to carry out the predetermined action, which is specified in Claim 8 as being communication of an event detection to the central server and then receiving a request for selected portions of the driving information. Choi does not teach or suggest all of the features of this claim. Paragraph [0041] referred to by the Examiner, describes the black box data analyzer 311 transmitting data to the accident environment constructor 320 and the mechanical data extractor 330. However, all of these elements of Choi are located at the accident analyzing center (akin to the central server) and not at the mobile device (see Figure 1). Accordingly, there is no teaching or suggestion of the device on board the vehicle transmitting selected portions of its driving information associated with the detected event.

Claim 11 is also not taught or suggested by Katsman. Paragraphs [0017] and [0065] cited by the Examiner do not describe a downloadable application controlling the mobile device to process the driving information to generate a driving score associated with a particular driver. In Katsman the driving score is generated by the server or a database manager system associated with the vehicle monitoring system server, and it

does not show that any driving information is processed at the mobile device to derive a driving score. Accordingly, as all of the recited features of the claim are not taught or suggested by the reference, the claim is nonobvious for these further reasons in addition to the dependence from nonobvious claim 1 as explained above. Reconsideration of the pending rejection is requested.

Regarding Claims 12 and 13, the features of these claims are not taught or suggested in Katsman. Claim 12 requires the mobile telecommunications device to use its own power supply, whereas in contrast Para [0076] referred to by the Examiner states that the 'the connection to the electrical system 24 may provide electrical power to the mobile phone.' This is completely the opposite of Claim 12. Similarly, the Examiner considers that Para [0078] discloses that the mobile telecommunications device is a smartphone. However this paragraph only lists components of the mobile telephone but not that it is a smartphone. It is noted that a smartphone is defined as: 'a mobile phone that performs many of the functions of a computer, typically having a touchscreen interface, Internet access, and an operating system capable of running downloaded apps.' Para [0078] is silent in terms of the operating system used by the mobile phone, and in fact Para [0076] explains that the mobile phone 14 is programmed with vehicle monitoring software but is silent as to the form of that software: there is no disclosure of that software being a downloadable application. Accordingly, the features of Claim 13 are also not taught or suggested by Katsman. Therefore, both Claims 12 and 13 are nonobvious over the cited prior art for these further reasons.

The features of Claim 19 are not taught or suggested in Choi at the cited Para [0040]. This paragraph does not show the claimed feature of the predetermined action

comprising providing the user with options to control of the mobile device to take further actions. Rather Para[0040] is directed to the accident data analyzer 310 which is located at the accident analyzing center (akin to the central server) and not at the mobile device (see Figure 1). Accordingly, there is no teaching or suggestion of the device on board the vehicle providing the user with options as recited the claim, and Claim 19 is nonobvious under section 103 over the cited prior art.

Similarly Claim 20, which is directed to the interfacing of the mobile device with an external device wirelessly, is not taught or suggested in Choi. Paras [0040] and [0041] referred to by the Examiner are directed to the accident data analyzer 310 and the black box data analyzer 311 transmitting data to the accident environment constructor 320 and the mechanical data extractor 330. All of these elements are located at the accident analyzing center (akin to the central server) and not at the mobile device (see Figure 1). There is simply no interfacing, as has been described earlier in relation to Claim 1, and therefore the interfacing is not carried out wirelessly. Accordingly, there is no teaching or suggestion of all of the features of Claim 20, and Claim 20 is nonobvious in view of the cited prior art.

Regarding Claim 25, the applicants note that the Examiner has failed to provide any reference to specific portions of Katsman or Choi to support a prima facie case of obviousness. The applicants respectfully assert that the recited features of the claim are not taught or suggested by either reference.

Claims 9 and10 are rejected under 35 USC 103 as being unpatentable over Choi (US 2010-0030540) in view of Katsman (US 2010-0157061) in view of Koonce (US 2010-0166583).

The applicants request reconsideration of the rejections to Claims 9 and 10 (from the combination of Choi, Katsman and Koonce). First, the applicants note that Koonce has a priority date of December 23, 2010 which is after the effective priority date of December 15, 2010; accordingly, the Koonce reference is not proper under 35 USC 103. Second, even if considered a proper reference based on priority dates, Koonce has nothing to do with vehicles or driving or recording driver behavior. Rather, it is directed to a complicated system for exchanging various forms of information but particularly, as strongly emphasized in Koonce, semantic information between computing devices. The semantic meaning of the data the system gathers is critical to this prior art document and the system takes actions as a result of understanding that semantic data. One skilled in the art would have no motivation to look at this document because it is directed to a pure computing/IT field rather than a vehicle movement logging instrumentation field. Accordingly, the Koonce reference is non-analogous art and should not be considered a proper reference for this further reason.

Third, Koonce only alleged relevance is that it describes in Para [0222] that data can be stored on a short term basis and moved a long term memory. It is not clear where this data is stored. Certainly the term 'globally stored' in Para [0222] seems to suggest that it is stored at the master agent namely on the central server rather than on a mobile telecommunications device. There does not appear to be a clear and unambiguous disclosure in Koonce of the long term and short term storage as being present on the agent, which would be akin to the mobile device as recited in the applicants' claims. The applicants also note that Para [0293] is simply describing the fact that due to limited processing power and battery life, a mobile device can have an algorithm to remove less-

likely data from the decision making process, namely filter that lower priority data out. The less-likely data is determined by a scoring system, for example. This has nothing to do with the mobile device having a long term memory and a short term memory and these elements being arranged to overwrite driving information written to the short term memory in accordance with a predetermined sequence. This feature of the applicants' claim does not appear to be taught or suggested by Koonce.

New Claims 26 and 27:

New claim 26 recites similar features to independent claim 1, and is nonobvious for the same reasoning discussed above with regard to how the references fail to teach or suggest all of the recited elements of the claim.

New claim 27 recites similar features to independent claim 1, and also recites claim features related to "use of a neural network on the mobile telecommunications device to determine whether the driving information represents an acceptable or unacceptable driving pattern." In addition to the failure to teach or suggest the claim elements in common with claim 1 as discussed above, the cited references fail to teach or suggest the claimed use of a neural network.

The applicants assert that claims 26 and 27 are novel and nonobvious over the cited references for at least these reasons.

CONCLUSION

The applicants respectfully request that the terminal disclaimers be entered, the claim amendments be entered, the pending rejections be reconsidered and withdrawn, and the claims pass to allowance. Please charge any fee deficiencies or credit any

overpayments to Deposit Account No. 50-2036 with reference to Docket. No.:

044228.010203.

Respectfully submitted,

Date: July 23, 2018

/Mark H. Krietzman/
Mark H. Krietzman
Registration No.: 41128

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Electronic Patent Application Fee Transmittal

Application Number:	15454944
Filing Date:	09-Mar-2017
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Filer:	Mark Krietzman H/Kate Duttera
Attorney Docket Number:	044228.010203

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 3 months with $0 paid	2253	1	700	700
Miscellaneous:				
			Total in USD ($)	**700**

Electronic Acknowledgement Receipt	
EFS ID:	33260127
Application Number:	15454944
International Application Number:	
Confirmation Number:	6521
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Customer Number:	30734
Filer:	Mark Krietzman H/Kate Duttera
Filer Authorized By:	Mark Krietzman H
Attorney Docket Number:	044228.010203
Receipt Date:	23-JUL-2018
Filing Date:	09-MAR-2017
Time Stamp:	21:19:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$700
RAM confirmation Number	072418INTEFSW00007630502036
Deposit Account	502036
Authorized User	Kate Duttera
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer Filed	010203_TerminalDisclaimer.pdf	160324 1c2ca7a070557fb095eb11510e7f0a8a2764f83b	no	2
Warnings:					
Information:					
2		010203_Response_FINAL.pdf	203146 f6eaf797985f87eb1400e71250af352367d744a1	yes	20

Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Claims	2	8
Applicant Arguments/Remarks Made in an Amendment	9	20

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30558 10543e57c17e19a2542b83ede7ec27cb896786f9	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	394028	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/AIA/26 (04-14)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional) 044228.010203

In re Application of: Andrew William Wright

Application No.: 15/454,944

Filed: March 9, 2017

For: Method and System for Logging Vehicle Behaviour

The applicant, Andrew William Wright, owner of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 9311271; 9633487 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The applicant hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the applicant does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the **prior patent**, "as the term of said **prior patent** is presently shortened by any terminal disclaimer," in the event that said **prior patent** later:

expires for failure to pay a maintenance fee;
is held unenforceable;
is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. ☐ The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee.

I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 67259

/Mark H. Krietzman/	07-23-2018
Signature	Date
Mark H. Krietzman	
Typed or printed name	
Attorney for Applicant	714-966-8864
Title	Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.321. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Substitute for Form SB08a/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(use as many sheets as necessary)*	***Complete if Known***	
	Application Number	15/454,944
	Filing Date	March 9, 2017
	First Named Inventor	Wright, Andrew William
	Art Unit	3661
	Examiner Name	Paige, Tyler D.
	Attorney Docket Number	044228.010203

U. S. PUBLICATION AND PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number Number – Kind Code (if known)	Publication or Grant Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
	38	2009/0157255 A1	06-18-2009	Plante
	39	2010/0317314 A1	12-16-2010	Roland
	40	2011/0212717 A1	09-01-2011	Rhoads et al.
	41	2017/0178422 A1	06-22-2017	Wright
	42	8,554,468 B1	10-08-2013	Bullock
	43	8,781,442 B1	07-15-2014	Link II
	44	9,311,271 B2	04-12-2016	Wright
	45	9,633,487 B2	04-25-2017	Wright

Examiner Signature		**Date Considered**	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in § 1.56(c) more than three months prior to the filing of the information disclosure statement.

CONTENT OF IDS

☐ Copies of reference numbers are not being submitted because they were previously cited by or submitted to the U.S. Patent and Trademark Office in patent application number , filed for which a claim for priority under 35 U.S.C. § 120 has been made in the instant application.

612014843.1

Substitute for Form SB08a/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(use as many sheets as necessary)*	***Complete if Known***	
	Application Number	15/454,944
	Filing Date	March 9, 2017
	First Named Inventor	Wright, Andrew William
	Art Unit	3661
	Examiner Name	Paige, Tyler D.
	Attorney Docket Number	044228.010203

☐ The month of publication for reference numbers is not available. However, the year of publication for these references is sufficiently earlier than the effective US filing date and any foreign priority date so that the particular month of publication is not in issue pursuant to 37 CFR § 1.98(b).

STATEMENT UNDER 37 C.F.R. § 1.704(d)(1)

☐ This information disclosure statement is in compliance with §§ 1.97 and 1.98 and will not be considered a failure to engage in reasonable efforts to conclude prosecution (processing or examination) of the application under paragraphs 37 C.F.R. § 1.704(c)(6), (c)(8), (c)(9), or (c)(10) because each item of information contained in the information disclosure statement:

☐ Was first cited in any communication from a patent office in a counterpart foreign or international application or from the Office, and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the information disclosure statement; or

☐ Is a communication that was issued by a patent office in a counterpart foreign or international application or by the Office, and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the information disclosure statement.

☐ See attached certification statement.

☒ The fee set forth in § 1.17(p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

Please charge any deficiency or credit any overpayment to Deposit Account No. 23-3050.

612014843.1

Substitute for Form SB08a/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(use as many sheets as necessary)*	***Complete if Known***	
	Application Number	15/454,944
	Filing Date	March 9, 2017
	First Named Inventor	Wright, Andrew William
	Art Unit	3661
	Examiner Name	Paige, Tyler D.
	Attorney Docket Number	044228.010203

SIGNATURE

Mark H. Krietzman
Mark H. Krietzman
Registration No. 41128

Date: March 2, 2018

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Facsimile: (215) 568-3439

612014843.1

Electronic Patent Application Fee Transmittal

Application Number:	15454944
Filing Date:	09-Mar-2017
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Filer:	Mark Krietzman H/Kelly Quach
Attorney Docket Number:	044228.010203

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	120	120
		Total in USD ($)		**120**

Electronic Acknowledgement Receipt	
EFS ID:	31951495
Application Number:	15454944
International Application Number:	
Confirmation Number:	6521
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Customer Number:	30734
Filer:	Mark Krietzman H/Kelly Quach
Filer Authorized By:	Mark Krietzman H
Attorney Docket Number:	044228.010203
Receipt Date:	05-MAR-2018
Filing Date:	09-MAR-2017
Time Stamp:	09:19:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$120
RAM confirmation Number	030518INTEFSW00007980233050
Deposit Account	233050
Authorized User	Kelly Quach
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	044228_010203_SIDS_1449_03-05-18.pdf	154055 872f9e57ba52b443bc253bc654480672858ce970	no	3
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
2	Fee Worksheet (SB06)	fee-info.pdf	30862 9b8c58424431a6b22d7c16a9e52e46c8954ac295	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	184917		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/454,944	03/09/2017	Andrew William Wright	044228.010203	6521

30734 7590 01/23/2018
BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

EXAMINER
PAIGE, TYLER D

ART UNIT	PAPER NUMBER
3661	

NOTIFICATION DATE	DELIVERY MODE
01/23/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eofficemonitor@bakerlaw.com
edervis@bakerlaw.com
patents@bakerlaw.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No. 15/454,944	Applicant(s) WRIGHT, ANDREW WILLIAM	
	Examiner TYLER PAIGE	Art Unit 3661	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03/09/2017*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-25* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-25* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *03/09/2017* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☒ All b)☐ Some** c)☐ None of the:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *05/22/2017*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

The present application is being examined under the pre-AIA first to invent provisions. This office action is in response to an application filed on 03/09/2017. The applicant submits one Information Disclosure Statement dated 05/22/2017. Applicant claims Domestic priority to several applications dated 12/15/2011, 04/12/2016, and 03/04/2016. Applicant claims International priority to applications dated 12/15/2010, 01/25/2011, 06/10/2011, and 10/31/2011.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit http://www.uspto.gov/forms/. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

2. Claims 1 - 25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 - 7 of U.S. Patent No. 9,311,271. Although the conflicting claims are not identical, they are not patentably distinct from each other because removing inherent and/or unnecessary limitations/step would be within the level of one of ordinary skill in the art. It is well settled that the omission of an element/limitation, e.g. elements b, e, and f of the patent makes its function an obvious expedient if the remaining elements perform the same function as before. The patent discloses as a series; the tests of the application. Thus, the function performed the claims of the patent would extend the protection beyond the

statutory allotment. In re Karlson, 136 USPQ 184 (CCPA 1963). Also note Ex parte Rainu, 168 USPQ 375 (Bd. App. 1969). Omission of a reference element or step whose function is not needed would be obvious to one of ordinary skill in the art.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of

activities undertaken within the scope of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit http://www.uspto.gov/forms/. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

4. Claims 1 - 25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 - 13 of U.S. Patent No. 9,633,487. Although the conflicting claims are not identical, they are not patentably distinct from each other because removing inherent and/or unnecessary limitations/step would be within the level of one of ordinary skill in the art. It is well settled that the omission of an element/limitation, e.g. elements b, e, and f of the patent makes its function an obvious expedient if the remaining elements perform the same function as before. The patent discloses as a series; the tests of the application. Thus, the function performed the claims of the patent would extend the protection beyond the statutory allotment. In re Karlson, 136 USPQ 184 (CCPA 1963). Also note Ex parte Rainu, 168 USPQ 375 (Bd. App. 1969). Omission of a reference element or step whose function is not needed would be obvious to one of ordinary skill in the art.

Double Patenting

5. Claims 1 - 25 of this application is patentably indistinct from claims 1 - 25 of Application No. 15454937. Pursuant to 37 CFR 1.78(f), when two or more applications filed by the same applicant contain patentably indistinct claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the patentably indistinct claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Claim Rejections - 35 USC § 103

6. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

7. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under pre-AIA 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1 – 8, 11 - 25 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Choi US 2010/0030540 in view Katsman US 2010/0157061.

1. As per claim 1, A mobile telecommunications device configured to log driving information associated with a vehicle, the mobile telecommunications device comprising:

a sensor set comprising an image sensor, an audio sensor, an accelerometer or a positioning module, or a combination thereof, a user interface; (Choi paragraph 0024 discloses, “Preferably, the blackbox data include image data of external environments around each vehicle. The images of the external environments are captured at various angles by cameras installed at the periphery of the vehicle (e.g., the centers of the front/rear bumpers of the vehicle and the certain points of the left/right sides of the vehicle).” And paragraph 0021 discloses, “The data collecting unit 100 collects and outputs various data related to the occurrence of a traffic accident. The data collecting

unit 100 includes a vehicle blackbox 110, a roadside sensor 120, a driver data collector 130, a weather data collector 140, and a position data collector 150.")

a processor and; (Choi paragraph 0099 discloses, "Also, all the functional modules of the exemplary embodiments may be implemented in one chip in a hardware manner, or may be implemented by the software running in a general-purpose processor.")

a memory; (Choi paragraph 0006 discloses, "To reconstruct the circumstances of a traffic accident, the vehicle blackbox stores accident-related data from a certain point before the accident time to a certain point after the accident time in its electromagnetic recording medium.")

the mobile telecommunications device being configured to:

determine, based on at least one of the inputs received by the user interface and sensor data from the device's sensor set, a start of a driving period during which the mobile device is removably attached to the vehicle and the vehicle is in use; (Katsman paragraph 0078)

process the sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven; (Choi paragraph 0040 discloses, "The accident data analyzer 310 analyzes various data received from the data collecting unit 100, for reconstructing the traffic accident. The accident data analyzer 310 includes a blackbox data analyzer 311, a sensor data analyzer 312, a driver data analyzer 313, a weather data analyzer 314, and a position data analyzer 315.") and

store a selection of the driving information to the memory; (Choi paragraph 0006 discloses, “To reconstruct the circumstances of a traffic accident, the vehicle blackbox stores accident-related data from a certain point before the accident time to a certain point after the accident time in its electromagnetic recording medium.” and paragraph 0022 discloses, " When a traffic accident occurs, the vehicle blackbox 110 transmits the blackbox data for a predetermined time interval around the time of the accident (e.g., from 3 minutes before the accident to 30 seconds after the accident) to the accident analyzing center 300.”)

wherein the driving information is derived without data from the vehicle sensors, and the mobile telecommunications device is further configured to:

interface with an external device, the external device having access to external driving information associated with a condition of the vehicle; (Choi paragraph 0025 discloses, “The roadside sensor 120 is located on the roadside to transmit/communicate data to/with the accident analyzing center 300 through a wired or wireless network. The roadside sensor 120 collects accident circumstance data according to the detection of roadside conditions (i.e., external condition data of the vehicle at the accident time) and transmits the collected accident circumstance data to the accident analyzing center 300.”) and,

to receive at least a portion of the external driving information from the external device. (Choi paragraphs 0040 and 0041)

Choi discloses a system and method for reconstructing traffic accident. Choi does not disclose a mobile device. Katsman teaches of a mobile telephone. Therefore, at the

time of the invention it would have been obvious to one of ordinary skill to incorporate the teachings of Katsman et.al. into the invention of Choi. Such incorporation is motivated by the need to ensure the recording device isn't damaged and easy to manage as a blackbox may not survive an accident.

2. As per claim 2, The mobile telecommunications device according to claim 1, wherein the mobile telecommunications device is controlled by a downloaded application to control the mobile device to detect occurrence of a predetermined event and in response take at least one predetermined action. (Katsman paragraph 0047)

3. As per claim 3, The mobile telecommunication device according to claim 2, wherein predetermined action is storing driving information associated with that event to the memory. (Choi paragraph 0006 discloses, "To reconstruct the circumstances of a traffic accident, the vehicle blackbox stores accident-related data from a certain point before the accident time to a certain point after the accident time in its electromagnetic recording medium." and paragraph 0022 discloses, " When a traffic accident occurs, the vehicle blackbox 110 transmits the blackbox data for a predetermined time interval around the time of the accident (e.g., from 3 minutes before the accident to 30 seconds after the accident) to the accident analyzing center 300.")

4. As per claim 4, The mobile telecommunication device according to claim 2, wherein predetermined action is storing driving information captured at a higher sampling rate than when an event is not detected. (Choi paragraph 0006 discloses, "To reconstruct the circumstances of a traffic accident, the vehicle blackbox stores accident-related data from a certain point before the accident time to a certain point after the

accident time in its electromagnetic recording medium." and paragraph 0022 discloses, " When a traffic accident occurs, the vehicle blackbox 110 transmits the blackbox data for a predetermined time interval around the time of the accident (e.g., from 3 minutes before the accident to 30 seconds after the accident) to the accident analyzing center 300.")

5. As per claim 5, The mobile telecommunication device according to claim 2, wherein predetermined action is transmitting driving information via a wireless telecommunication module of the mobile telecommunication device to a remote system. (Choi paragraph 0006 discloses, "To reconstruct the circumstances of a traffic accident, the vehicle blackbox stores accident-related data from a certain point before the accident time to a certain point after the accident time in its electromagnetic recording medium." and paragraph 0022 discloses, " When a traffic accident occurs, the vehicle blackbox 110 transmits the blackbox data for a predetermined time interval around the time of the accident (e.g., from 3 minutes before the accident to 30 seconds after the accident) to the accident analyzing center 300.")

6. As per claim 6, The mobile telecommunications device according to claim 2, wherein the predetermined action comprises providing feedback to a user to indicate that an event has been detected, the mobile telecommunications device being configured to receive a user interaction to confirm or deny whether the detected event has actually occurred following said feedback. (Katsman paragraph 0078)

7. As per claim 7, The mobile telecommunications device according to claim 6, wherein the feedback comprises notifying a user that a further action has been

scheduled, and will be taken within a predetermined period, the mobile telecommunications device being further configured to receive a user interaction to confirm or deny whether the further scheduled action should be taken within a predetermined period. (Katsman paragraph 0078)

8. As per claim 8, A mobile telecommunications device according to claim 2, wherein the predetermined action comprises communicating to a remote system that an event has been detected, the mobile telecommunications device being further configured to receive from the remote system a request to transmit to the remote system selected portions of the driving information associated with the detected event. (Choi paragraph 0041 discloses, “The blackbox data analyzer 311 analyzes whether any internal defect and any driver input existed at the time of the accident, on the basis of the driving status data and the vehicle status data included in the blackbox data of the vehicle blackbox 110, and transmits the analysis results to the accident environment constructer 320 and the mechanical data extractor 330.” And paragraph 0085)

9. As per claim 11, The mobile telecommunications device according to claim 2, wherein the mobile telecommunications device is controlled by the downloaded application to control the mobile device to process the driving information to generate a driving score associated with a particular driver. (Katsman paragraphs 0017 and 0065)

10. As per claim 12, The mobile telecommunications device according to claim 1, wherein the mobile telecommunications device utilizes its own power supply. (Katsman paragraph 0076)

11. As per claim 13, The mobile telecommunications device according to claim 1, wherein the mobile telecommunications device is a smartphone.(Katsman paragraph 0078)

12. As per claim 14, A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to manage voice-calls incoming to the mobile telecommunications device during a driving period. (Katsman paragraph 0053)

13. As per claim 15, A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to enable a hands-free mode of operation on detection of the driving period. (Katsman paragraph 0053)

14. As per claim 16, A mobile telecommunications device according to claim 15, wherein the hands-free mode of operation comprises enabling voice-activated commands on the mobile device. (Katsman paragraph 0053)

15. As per claim 17, A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to detect the occurrence of a predetermined event of significance, such as a crash, and in response to store driving information associated with that event to the memory. (Choi paragraph 0006 discloses, “To reconstruct the circumstances of a traffic accident, the vehicle blackbox stores accident-related data from a certain point before the accident time to a certain point after the accident time in its electromagnetic recording medium.” and paragraph 0022 discloses, " When a traffic accident occurs, the vehicle blackbox 110 transmits the blackbox data for a predetermined time interval around the time of the accident (e.g.,

from 3 minutes before the accident to 30 seconds after the accident) to the accident analyzing center 300.")

16. As per claim 18, A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to detect the occurrence of a predetermined event of significance, such as a crash, and in response to transmit driving information associated with that event via the wireless telecommunication module to a remote data-logging system. (Choi paragraph 0006 discloses, "To reconstruct the circumstances of a traffic accident, the vehicle blackbox stores accident-related data from a certain point before the accident time to a certain point after the accident time in its electromagnetic recording medium." and paragraph 0022 discloses, " When a traffic accident occurs, the vehicle blackbox 110 transmits the blackbox data for a predetermined time interval around the time of the accident (e.g., from 3 minutes before the accident to 30 seconds after the accident) to the accident analyzing center 300.")

17. As per claim 19, A mobile telecommunications device according to claim 2, wherein the at least one predetermined action comprises providing the user with options to control the mobile device to take further actions. (Choi paragraph 0040)

18. As per claim 20, A mobile telecommunications device according to claim 1, further arranged to interface with the external device wirelessly. (Choi paragraphs 0040 and 0041)

19. As per claim 21, A mobile telecommunications device according to claim 1, wherein the process step comprises determination of at least one of: vehicle acceleration events and vehicle braking events. (Choi paragraph 0045)

20. As per claim 22, A mobile telecommunications device according to claim 21, wherein the process step comprises determination of vehicle swerving events and the determination of such events occurs when data from the sensor set accords with preset parameters. (Choi paragraph 0047)

21. As per claim 23, A mobile telecommunications device according to claim 1, wherein the process step comprises determination of both vehicle acceleration events and vehicle braking events. (Choi paragraph 0045)

22. As per claim 24, A mobile telecommunications device according to claim 23, wherein the process step comprises the determination of vehicle swerving events and the determination of such events occurs when data from the sensor set accords with preset parameters. (Choi paragraphs 0005 and 0006)

23. As per claim 25, A mobile telecommunications device according to claim 1, wherein the mobile telecommunications device further comprises a proximity sensor and the instructions, upon execution by the processor, enable the mobile telecommunications device to detect the proximity of the mobile telecommunications device to the vehicle.

24. Claims 9 and 10 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Choi US 2010/0030540 in view Katsman US 2010/0157061 in view of Koonce US 2012/0166583.

25. As per claim 9, The mobile telecommunications device according to claim 2, wherein the memory comprises:

a long term memory for persistently storing driving information and a short term memory for transiently storing driving information, wherein the short term memory receives driving information at a higher update rate than the long term memory, the mobile telecommunications device being further configured to: write driving information to the short term memory at a predetermined update rate during the driving period in a predetermined sequence; (Koonce paragraphs 0168 and 0222) and,

overwrite the driving information previously written to the short term memory in accordance with the predetermined sequence. (Koonce paragraphs 0168 and 0222)

Choi discloses a system and method for reconstructing traffic accident. Choi does not disclose a short term or long term memory. Koonce teaches of a short term and long term memory that may be used in a mobile device. Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to incorporate the teachings of Koonce et.al. into the invention of Choi. Such incorporation is motivated for the need to maintain a record of those details and events deemed important and not overload the memory with extraneous data.

26. As per claim 10, The mobile telecommunications device according to claim 9, wherein the mobile telecommunications device is controlled by the downloaded application to control the mobile device to detect an occurrence of a predetermined event and in response transfer data from the short term memory to the long term memory. (Koonce paragraphs 0168 and 0222)

Examiner Request

The examiner requests, in response to this office action, support must be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line number(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application. When responding to this office action, applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. In amending in reply to a rejection of claims in an application or patent under reexamination, the applicant or patent owner must clearly point out the patentable novelty which he or she thinks the claims present in view the state of the art disclosed by the references cited or the objections made. The applicant or patent owner must also show how the amendments avoid such references or objections.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TYLER PAIGE whose telephone number is (571)270-5425. The examiner can normally be reached on 7:30am - 5:00pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an

interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TYLER PAIGE/
Examiner, Art Unit 3661

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
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*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Bibliographic Data

Application No: 15454944

Foreign Priority claimed: ◉ Yes ○ No

35 USC 119 (a-d) conditions met: ☑ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged: /TYLER D PAIGE/ (Examiner's Signature) tdp (Initials)

Title: Method and System for Logging Vehicle Behaviour

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
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CONTINUING DATA

This application is a CON of 15061910 03/04/2016 PAT 9633487

15061910 is a CON of 13994455 07/24/2013 PAT 9311271

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03/16/2017

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FILING FEE RECEIVED

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Substitute for Form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	15/454,944
				Filing Date	March 9, 2017
				First Named Inventor	Wright, Andrew William
				Art Unit	3661
(use as many sheets as necessary)				**Examiner Name**	Paige, Tyler D.
Sheet	1	of	3	**Attorney Docket Number**	044228.010203

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Examiner Signature	/TYLER D PAIGE/ (01/19/2018)	**Date Considered**	01/19/2018

610641397.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.D.P/

Substitute for Form 1449/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(use as many sheets as necessary)*				***Complete if Known***	
				Application Number	15/454,944
				Filing Date	March 9, 2017
				First Named Inventor	Wright, Andrew William
				Art Unit	3661
				Examiner Name	Paige, Tyler D.
Sheet	2	of	3	**Attorney Docket Number**	044228.010203

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	34	Meyer, Stefan; "Fahrtenbuch – iPhone Apps Plus"; https://web.archive.org/web/20091210215707/http://www.iphoneappsplus.com/business/fahrtenbuch/index.htm; retrieved January 19, 2016; 2 pages (XP055242544)	
	35	"iPhone & iPad iOS Entwicklung"; NeuMedienFraktion; http://www.neuemedienfraktion.de/iPhone/iPhone.html; retrieved January 19, 2016; 2 pages (XP055242566)	
	36	Kanjo et al.; "MobGeoSen: facilitating personal geosensor data collection and visualization using mobile phones"; Personal and Ubiquitous Computing; Vol. 12 No. 8; 2008; p. 599-607	

Examiner Signature	/TYLER D PAIGE/ (01/19/2018)	**Date Considered**	01/19/2018

610641397.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.D.P/

Substitute for Form 1449/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(use as many sheets as necessary)*				***Complete if Known***	
				Application Number	15/454,944
				Filing Date	March 9, 2017
				First Named Inventor	Wright, Andrew William
				Art Unit	3661
				Examiner Name	Paige, Tyler D.
Sheet	3	of	3	**Attorney Docket Number**	044228.010203

NON PATENT LITERATURE DOCUMENTS			
	37	European Patent Application No. 11813683.7; Office Action Article 94(3); dated January 26, 2016; 6 pages	

Examiner Signature	/TYLER D PAIGE/ (01/19/2018)	**Date Considered**	01/19/2018

610641397.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /T.D.P/

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	(("SWITALSKI") near3 ("Gillian")).AANM.	USPAT	OR	OFF	2018/01/18 17:43
S2	117	(("WRIGHT") near3 ("Andrew")).INV.	EPO; JPO; DERWENT	OR	OFF	2018/01/18 17:43
S3	553	(("WRIGHT") near3 ("Andrew")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/01/18 17:44
S4	1996	701/33.4.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 17:44
S5	57974	(G07C5/02 or G07C5/008 or H04M1/72527 or G06Q40/08 or G07C5/0858 or G07C5/0866 or H04M1/6041).cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 17:45
S6	2	(("20100030540") or ("20120166583")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/01/18 17:53
S7	18	(accelerometer) and image and audio and interface and blackbox same (vehicle or automobile)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 17:58
S8	18	(accelerometer) and image and audio and blackbox same (vehicle or automobile)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 17:59
S9	20	(accelerometer) and image and interface and blackbox same (vehicle or automobile)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 18:00
S10	0	blackbox same (vehicle or automobile) same smartphone and interface and score	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2018/01/18 20:38

			DERWENT; IBM_TDB			
S11	1	blackbox same (vehicle or automobile) and smartphone and interface and score	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:39
S12	646	(crash or collision) same (vehicle or automobile) and smartphone and interface and score	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:39
S13	1	(crash or collision) same (vehicle or automobile) same smartphone same interface and score	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:39
S14	35	(crash or collision) same (vehicle or automobile) same smartphone and interface and score	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:40
S15	108	(crash or collision) same (vehicle or automobile) same (mobilephone or mobile adj phone or cellphone or cell$1phone or cell adj phone) and interface and score	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:40
S16	95	S15 not S14	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:40
S17	78	(crash or collision) same (vehicle or automobile) same (mobilephone or mobile adj phone or cellphone or cell$1phone or cell adj phone) and interface and score and insurance	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:42
S18	33	(crash or collision) same (vehicle or automobile) same (mobilephone or mobile adj phone or cellphone or cell$1phone or cell adj phone) and interface and score and insurance and (start or begin) with (trip or journey or path)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:48
S19	2	(crash or collision) same (vehicle or automobile) same (mobilephone or mobile adj phone or cellphone or	US-PGPUB; USPAT; USOCR;	OR	ON	2018/01/18 20:55

		cell$1phone or cell adj phone) and score and insurance and (start or begin) with (trip or journey or path) same interface	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S20	15	(crash or collision) same (vehicle or automobile) same (mobilephone or mobile adj phone or cellphone or cell$1phone or cell adj phone) and score and insurance and (start or begin) same (trip or journey or path) same interface	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:55
S21	15	(crash or collision) same (vehicle or automobile) same (mobilephone or mobile adj phone or cellphone or cell$1phone or cell adj phone) and score and insurance and (start or begin or commence) same (trip or journey or path) same interface	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:56
S22	31	(crash or collision) same (vehicle or automobile) same (mobilephone or mobile adj phone or cellphone or cell$1phone or cell adj phone) and score and insurance and (start or begin or commence) same interface	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:57
S23	16	S22 not S21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/18 20:57

1/19/2018 11:47:23 AM
C:\Users\tpaige\Documents\EAST\Workspaces\15454944_vehicle_blackbox_2.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15454944	WRIGHT, ANDREW WILLIAM
	Examiner	**Art Unit**
	TYLER PAIGE	3661

CPC- SEARCHED		
Symbol	**Date**	**Examiner**

CPC COMBINATION SETS - SEARCHED		
Symbol	**Date**	**Examiner**
G07C5/02 or G07C5/008 or H04M1/72527 or G06Q40/08 or G07C5/0858 or G07C5/0866 or H04M1/6041	01/19/2018	tdp

US CLASSIFICATION SEARCHED			
Class	**Subclass**	**Date**	**Examiner**
701	33.4	01/19/2018	tdp

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	**Date**	**Examiner**
Inventor Search	01/19/2018	tdp
East Search	01/19/2018	tdp
NPL Search	01/19/2018	tdp

INTERFERENCE SEARCH			
US Class/ CPC Symbol	**US Subclass / CPC Group**	**Date**	**Examiner**

/TYLER PAIGE/ Examiner.Art Unit 3661	

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15454944	WRIGHT, ANDREW WILLIAM
	Examiner	**Art Unit**
	TYLER PAIGE	3661

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/19/2018								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
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	7	✓								
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	22	✓								
	23	✓								
	24	✓								
	25	✓								

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Andrew William Wright	)	Group Art Unit: 3661
	)	
Application No.: 15/454,944	)	Examiner: Not Yet Assigned
	)	
Filed: March 9, 2017	)	Confirmation No.: 6521

Title: Method and System for Logging Vehicle Behaviour

Mail Stop: Amendments
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT

Madam:

Prior to examination on the merits in this application, please amend the above-identified application as follows:

Amendments to the Claims are reflected on page **2** of this paper.

Remarks begin on page **12** of this paper.

CLAIMS

Claims:

1. (Currently Amended) A mobile telecommunications device configured to log driving information associated with a vehicle, the mobile telecommunications device comprising:

a sensor set comprising an image sensor, an audio sensor, an accelerometer or a positioning module, or a combination thereof;

a user interface;

a processor and;

a memory;

the mobile telecommunications device being configured to:

determine, based on at least one of the inputs received by the user interface and sensor data from the device's sensor set, a start of a driving period during which the mobile device is removably attached to the vehicle and the vehicle is in use;

process the sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven; and

store a selection of the driving information to the memory;

wherein the driving information is derived without data from the vehicle sensors, and the mobile telecommunications device is further configured to:

interface with an external device, the external device having access to external driving information associated with a condition of the vehicle; and,

to receive at least a portion of the external driving information from the external device.

2. (Original) The mobile telecommunications device according to claim 1, wherein the mobile telecommunications device is controlled by a downloaded application to control the mobile device to detect occurrence of a predetermined event and in response

take at least one predetermined action.

3. (Original) The mobile telecommunication device according to claim 2, wherein predetermined action is storing driving information associated with that event to the memory.

4. (Original) The mobile telecommunication device according to claim 2, wherein predetermined action is storing driving information captured at a higher sampling rate than when an event is not detected.

5. (Original) The mobile telecommunication device according to claim 2, wherein predetermined action is transmitting driving information via a wireless telecommunication module of the mobile telecommunication device to a remote system.

6. (Original) The mobile telecommunications device according to claim 2, wherein the predetermined action comprises providing feedback to a user to indicate that an event has been detected, the mobile telecommunications device being configured to receive a user interaction to confirm or deny whether the detected event has actually occurred following said feedback.

7. (Original) The mobile telecommunications device according to claim 6, wherein the feedback comprises notifying a user that a further action has been scheduled, and will be taken within a predetermined period, the mobile telecommunications device being further configured to receive a user interaction to confirm or deny whether the further scheduled action should be taken within a predetermined period.

8. (Original) A mobile telecommunications device according to claim 2, wherein the predetermined action comprises communicating to a remote system that an event has been detected, the mobile telecommunications device being further configured to receive from the remote system a request to transmit to the remote system selected portions of the driving information associated with the detected event.

9. (Original) The mobile telecommunications device according to claim 2, wherein the memory comprises:

a long term memory for persistently storing driving information and a short term memory for transiently storing driving information, wherein the short term memory receives driving information at a higher update rate than the long term memory, the mobile telecommunications device being further configured to:

write driving information to the short term memory at a predetermined update rate during the driving period in a predetermined sequence; and,

overwrite the driving information previously written to the short term memory in accordance with the predetermined sequence.

10. (Original) The mobile telecommunications device according to claim 9, wherein the mobile telecommunications device is controlled by the downloaded application to control the mobile device to detect an occurrence of a predetermined event and in response transfer data from the short term memory to the long term memory.

11. (Original) The mobile telecommunications device according to claim 2, wherein the mobile telecommunications device is controlled by the downloaded application to control the mobile device to process the driving information to generate a driving score associated with a particular driver.

12. (Original) The mobile telecommunications device according to claim 1, wherein the mobile telecommunications device utilizes its own power supply.

13. (Original) The mobile telecommunications device according to claim 1, wherein the mobile telecommunications device is a smartphone.

14. (Original) A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to manage voice-calls incoming to the mobile telecommunications device during a driving period.

15. (Original) A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to enable a hands-free mode of operation on detection of the driving period.

16. (Original) A mobile telecommunications device according to claim 15, wherein the hands-free mode of operation comprises enabling voice-activated commands on the mobile device.

17. (Original) A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to detect the occurrence of a predetermined event of significance, such as a crash, and in response to store driving information associated with that event to the memory.

18. (Original) A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to detect the occurrence of a predetermined event of significance, such as a crash, and in response to transmit driving information associated with that event via the wireless telecommunication module to a remote data-logging system.

19. (Original) A mobile telecommunications device according to claim 2, wherein the at least one predetermined action comprises providing the user with options to control the mobile device to take further actions.

20. (Original) A mobile telecommunications device according to claim 1, further arranged to interface with the external device wirelessly.

21. (New) A mobile telecommunications device according to claim 1, wherein the process step comprises determination of at least one of: vehicle acceleration events and vehicle braking events.

22. (New) A mobile telecommunications device according to claim 21, wherein the process step comprises determination of vehicle swerving events and the determination of such events occurs when data from the sensor set accords with preset parameters.

23. (New) A mobile telecommunications device according to claim 1, wherein the process step comprises determination of both vehicle acceleration events and vehicle braking events.

24. (New) A mobile telecommunications device according to claim 23, wherein the process step comprises the determination of vehicle swerving events and the determination of such events occurs when data from the sensor set accords with preset parameters.

25. (New) A mobile telecommunications device according to claim 1, wherein the mobile telecommunications device further comprises a proximity sensor and the instructions, upon execution by the processor, enable the mobile telecommunications device to detect the proximity of the mobile telecommunications device to the vehicle.

REMARKS

Applicants respectfully request that the foregoing amendments to the claims prior to examination. Claim 1 has been amended. Claims 21-25 are new. No new matter has been added. An early and favorable action on the merits is respectfully requested.

No fee is due in connection with the submission of this amendment. Please charge any fee deficiencies or credit any overpayments to Deposit Account No. 50-2036 with reference to Docket. No.: 044228.010203.

Respectfully submitted,

Date: July 11, 2017

/Mark H. Krietzman/
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Electronic Patent Application Fee Transmittal

Application Number:	15454944
Filing Date:	09-Mar-2017
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Filer:	Mark Krietzman H/Kate Duttera
Attorney Docket Number:	044228.010203

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	5	40	200
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**200**

Electronic Acknowledgement Receipt	
EFS ID:	29754022
Application Number:	15454944
International Application Number:	
Confirmation Number:	6521
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Customer Number:	30734
Filer:	Mark Krietzman H/Kate Duttera
Filer Authorized By:	Mark Krietzman H
Attorney Docket Number:	044228.010203
Receipt Date:	11-JUL-2017
Filing Date:	09-MAR-2017
Time Stamp:	20:37:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$200
RAM confirmation Number	071217INTEFSW00006348502036
Deposit Account	502036
Authorized User	Kate Duttera
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		010203_Prelim.PDF	104162 28a55cfe79defe7224074ed42f4d6bd58deb205b	yes	7
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Preliminary Amendment		1	1	
	Claims		2	6	
	Applicant Arguments/Remarks Made in an Amendment		7	7	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30555 ac513db3a62211295bc4c27dd2d76cc1edcedd45	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	134717		

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/454,944	Filing Date 03/09/2017	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT

07/11/2017	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 25	Minus	** 20	= 5	X $40 =	200
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	**200**

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
BRENDA J. DENNY

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/454,944	03/09/2017	Andrew William Wright	044228.010203

CONFIRMATION NO. 6521

30734
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WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

PUBLICATION NOTICE

OC000000092292107

Title: Method and System for Logging Vehicle Behaviour

Publication No.US-2017-0178423-A1
Publication Date:06/22/2017

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

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In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Substitute for Form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	15/454,944
				Filing Date	March 9, 2017
				First Named Inventor	Wright, Andrew William
				Art Unit	3661
(use as many sheets as necessary)				**Examiner Name**	Paige, Tyler D.
Sheet	1	of	3	**Attorney Docket Number**	044228.010203

U. S. PUBLICATION AND PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number Number – Kind Code (if known)	Publication or Grant Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
	1	2005/0030224 A1	02-10-2005	Koch
	2	2005/0046584 A1	03-03-2005	Breed
	3	2006/0103513 A1	05-18-2006	Ihara et al.
	4	2007/0135979 A1	06-14-2007	Plante
	5	2007/0135980 A1	06-14-2007	Plante
	6	2007/0150139 A1	06-28-2007	Hardy
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	8	2007/0219685 A1	09-20-2007	Plante
	9	2008/0255722 A1	10-16-2008	McClellan et al.
	10	2009/0109037 A1	04-30-2009	Farmer
	11	2010/0039254 A1	02-18-2010	Cooper et al.
	12	2010/0131307 A1	05-27-2010	Collopy et al.
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	14	2011/0112717 A1	05-12-2011	Resner
	15	2011/0117856 A1	05-19-2011	Veluppillai et al.
	16	2012/0072244 A1	03-22-2012	Collins
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	19	4,992,943 A	02-12-1991	McCracken
	20	5,638,273 A	06-10-1997	Coiner et al.
	21	7,756,617 B1	07-13-2010	Cluff et al.
	22	7,765,058 B2	07-27-2010	Doering
	23	7,908,191 B1	03-15-2011	Dinamani et al.
	24	8,140,358 B1	03-20-2012	Ling et al.

Examiner Signature		**Date Considered**	

610641397.1

Substitute for Form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	15/454,944
				Filing Date	March 9, 2017
				First Named Inventor	Wright, Andrew William
				Art Unit	3661
(use as many sheets as necessary)				**Examiner Name**	Paige, Tyler D.
Sheet	2	of	3	**Attorney Docket Number**	044228.010203

FOREIGN PATENT DOCUMENTS					
Examiner Initials	Cite No.	Foreign Patent Document Country Code- Number -Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	T
	25	EP 1615178 A2	01-11-2006	EAS Surveillance GmbH	
	26	EP 1764749 A2	03-21-2007	Suzuki et al.	
	27	EP 2177811 A2	04-21-2010	Native Design Ltd.	
	28	JP 2008-244674 A	10-09-2008	Kyocera Corp.	
	29	WO 2006/075419 A1	07-20-2006	Yugen Kaisha Azu Rinku	
	30	WO 2006/127534 A1	11-30-2006	Siemens VDO Automotive Corp.	
	31	WO 2007/067775 A2	06-14-2007	Smartdrive Systems Inc.	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), Volume-issue Number(s), publisher, city and/or country where published.	T
	32	Barbeau et al.; "TRAC-IT – A Software Architecture Supporting Simutaneous Travel Behavior Data Collection & Real-time Location-Based Services for GPS-Enabled Mobile Phones"; Proceedings of the Nat'l Academy of Sciences Transportation Research Board 88th Annual Meeting; Paper #09-3175; January 2009; 20 pages	
	33	Barbeau et al.; "Dynamic Management of Real-Time Location Data on GPS-Enabled Mobile Phones"; The 2nd Int'l Conf. on Mobile Ubiquitous Computing, Systems, Services and Techniques; 2008; p. 343-348	
	34	Meyer, Stefan; "Fahrtenbuch – iPhone Apps Plus"; https://web.archive.org/web/20091210215707/http://www.iphoneappsplus.com/business/fahrtenbuch/index.htm; retrieved January 19, 2016; 2 pages (XP055242544)	
	35	"iPhone & iPad iOS Entwicklung"; NeuMedienFraktion; http://www.neuemedienfraktion.de/iPhone/iPhone.html; retrieved January 19, 2016; 2 pages (XP055242566)	
	36	Kanjo et al.; "MobGeoSen: facilitating personal geosensor data collection and visualization using mobile phones"; Personal and Ubiquitous Computing; Vol. 12 No. 8; 2008; p. 599-607	

Examiner Signature		**Date Considered**	

610641397.1

Substitute for Form 1449/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(use as many sheets as necessary)*				***Complete if Known***	
				Application Number	15/454,944
				Filing Date	March 9, 2017
				First Named Inventor	Wright, Andrew William
				Art Unit	3661
				Examiner Name	Paige, Tyler D.
Sheet	3	of	3	**Attorney Docket Number**	044228.010203

NON PATENT LITERATURE DOCUMENTS			
	37	European Patent Application No. 11813683.7; Office Action Article 94(3); dated January 26, 2016; 6 pages	

Examiner Signature		**Date Considered**	

610641397.1

Electronic Acknowledgement Receipt

EFS ID:	29267899
Application Number:	15454944
International Application Number:	
Confirmation Number:	6521
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Customer Number:	30734
Filer:	Mark Krietzman H/Kelly Quach
Filer Authorized By:	Mark Krietzman H
Attorney Docket Number:	044228.010203
Receipt Date:	22-MAY-2017
Filing Date:	09-MAR-2017
Time Stamp:	09:10:07
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	044228_010203_IDS_Trans_05-22-17.PDF	121238 e98f2df19ea66b578c1520098778ef971c4e3d6e	no	4

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	044228_010203_IDS_1449_05-22-17.PDF	157589 94fd7f379fe5bc11f43a163ff5305635bc112932	no	3
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	278827	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

DOCKET NO.: 044228.010203 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Wright, Andrew William **Confirmation No.: 6521**

Application No.: 15/454,944 **Group Art Unit: 3661**

Filing Date: March 9, 2017 **Examiner: Paige, Tyler D.**

For: Method And System For Logging Vehicle Behaviour

Filed Via EFS

INFORMATION DISCLOSURE STATEMENT

Pursuant to 37 CFR § 1.56 and in accordance with 37 CFR §§ 1.97-1.98, information relating to the above-identified application is hereby disclosed. Inclusion of information in this statement is not to be construed as an admission that this information is material as that term is defined in 37 CFR § 1.56(b).

☒ **IDS Filed Under 37 CFR 1.97(b)**

In accordance with § 1.97(b), since this Information Disclosure Statement is being filed either within three months of the filing date of the above-identified application, within three months of the date of entry into the national stage of the above identified application as set forth in § 1.491, before the mailing date of a first Office Action on the merits of the above-identified application, or before the mailing date of a first Office Action after the filing of request for continued examination under § 1.114, no additional fee is required.

☐ **IDS filed Under 37 CFR 1.97(c)**

In accordance with § 1.97(c), this Information Disclosure Statement is being filed after the period set forth in § 1.97(b) above but before the mailing date of either a Final Action under § 1.113 or a Notice of Allowance under § 1.311, or before an action that otherwise closes prosecution in the application, therefore:

☐ Certification in Accordance with § 1.97(e) is attached; or

☐ The fee of ☐ **$180.00** (Undiscounted)

☐ **$90.00** (Small entity)

☐ **$45.00** (Micro entity) as set forth in § 1.17(p) is attached.

☐ **IDS filed Under 37 CFR 1.97(d)**

In accordance with § 1.97(d), this Information Disclosure Statement is being filed after the mailing date of either a Final Action under § 1.113 or a Notice of Allowance under § 1.311 but before, or simultaneously with, the payment of the Issue Fee, therefore included are: Certification in Accordance with § 1.97(e); and the submission of ☐ **$180.00** (Undiscounted) ☐ **$90.00** (Small entity) ☐ **$45.00** (Micro entity) as set forth in § 1.17(p).

CONTENT OF IDS PURSUANT TO 37 CFR 1.98

☐ Copies of reference numbers listed on the attached Form 1449/PTO or Substitute for Form 1449/PTO are not required to be submitted pursuant to 37 CFR § 1.98(a)(2)(iii).

☐ Copies of reference numbers listed on the attached Form 1449/PTO or Substitute for Form 1449/PTO are enclosed herewith.

☒ Copies of reference numbers **1 - 37** are not being submitted because they were previously cited by or submitted to the U.S. Patent and Trademark Office in patent application number **15/061,910**, filed **March 4, 2016** in patent application number **13/994,455**, filed **July 24, 2013 now patent number 9,311,271** for which a claim for priority under 35 U.S.C. § 120 has been made in the instant application.

☐ The month of publication for reference numbers is not available. However, the year of publication for these references is sufficiently earlier than the effective US filing date and any foreign priority date so that the particular month of publication is not in issue pursuant to 37 CFR § 1.98(b).

REFERENCES IN A LANGUAGE OTHER THAN ENGLISH

☐ The following documents are not in the English language. Accordingly, a concise explanation of the relevance of the document was incorporated in the specification passages identified below, the document was identified in a foreign communication as identified below or an English language counterpart application has been provided as indicated below.

Foreign Language Document	Cite No.	Pages of Reference in Specification or Relevance of Document

Foreign Language Document	Cite No.	English Language Counterpart	Cite No.

☐ **CERTIFICATION IN ACCORDANCE WITH § 1.97(e)**

I hereby certify that:

☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement.

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in § 1.56(c) more than three months prior to the filing of this information disclosure statement.

Please charge any deficiency or credit any overpayment to Deposit Account No. 23-3050.

Date: May 19, 2017

/Mark H. Krietzman/
Mark H. Krietzman
Registration No. 41128

Baker & Hostetler LLP
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Philadelphia, PA 19104-2891
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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/454,944	03/09/2017	Andrew William Wright	044228.010203

CONFIRMATION NO. 6521

IMPROPER CFR REQUEST

30734
BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

OC000000090867470

Date Mailed: 04/25/2017

RESPONSE TO REQUEST FOR CORRECTED FILING RECEIPT

Power of Attorney, Claims, Fees, System Limitations, and Miscellaneous

In response to your request for a corrected Filing Receipt, the Office is unable to comply with your request because:

- The ADS submitted on 04/21/2017 attempts to change the applicant but cannot be entered. Any request to change the applicant once the applicant has been specified must include (1) an application data sheet specifying the new applicant in the Applicant Information section, and (2) a statement under 37 CFR 3.73(c) (USPTO Form PTO/AIA/96 or an equivalent) to show chain of title to the new applicant. The application data sheet must contain markings to show the information that is being changed, with underlining for additions and strike-through or brackets for deletions. See 37 CFR 1.76(c)(2).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/byemane/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
15/454,944	03/09/2017	3661	730	044228.010203	20	1

CONFIRMATION NO. 6521

CORRECTED FILING RECEIPT

30734
BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

OC000000090887495

Date Mailed: 04/25/2017

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Andrew William Wright, Surrey, UNITED KINGDOM;

Applicant(s)

Gillian Switalski, Wentworth, UNITED KINGDOM;

Assignment For Published Patent Application

Andrew William Wright, Wentworth, UNITED KINGDOM
Gillian Switalski, Wentworth, UNITED KINGDOM

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 15/061,910 03/04/2016 PAT 9633487
which is a CON of 13/994,455 07/24/2013 PAT 9311271
which is a 371 of PCT/GB2011/052491 12/15/2011

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
UNITED KINGDOM 1118777.0 10/31/2011 No Access Code Provided
UNITED KINGDOM 1109759.9 06/10/2011 No Access Code Provided
UNITED KINGDOM 1101259.8 01/25/2011 No Access Code Provided
UNITED KINGDOM 1021292.6 12/15/2010 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/16/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/454,944**

Projected Publication Date: 06/22/2017

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****
Title

Method and System for Logging Vehicle Behaviour

Preliminary Class

701

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

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technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

DOCKET NO.: 044228.010203 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Andrew William Wright **Confirmation No.: 6521**

Application No.: 15/454,944 **Group Art Unit: 3661**

Filing Date: March 9, 2017 **Examiner: Not Yet Assigned**

For: METHOD AND SYSTEM FOR LOGGING VEHICLE BEHAVIOUR

REQUEST FOR CORRECTED FILING RECEIPT

1. A Corrected Filing Receipt is respectfully requested to correct the Applicant Information. A corrected Application Data Sheet and marked-up copy of the filing receipt accompany this request.

2. The Commissioner is hereby authorized to charge any payment, deficiency or credit any overpayment of the fees associated with this communication to Deposit Account No. 50-2036.

Date: April 21, 2017

/Mark H. Krietzman/
Mark H. Krietzman
Registration No. 41,128

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Telephone: (714) 754-6600
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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
15/454,944	03/09/2017	3661	730	044228.010203	20	1

CONFIRMATION NO. 6521

FILING RECEIPT

30734
BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

OC000000089353526

Date Mailed: 03/17/2017

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Inventor(s)

Andrew William Wright, Surrey, UNITED KINGDOM;

Applicant(s)

~~Gillian Switalski, Wentworth, UNITED KINGDOM;~~

Assignment For Published Patent Application

Andrew William Wright, Wentworth, UNITED KINGDOM
Gillian Switalski, Wentworth, UNITED KINGDOM

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 15/061,910 03/04/2016
which is a CON of 13/994,455 07/24/2013 PAT 9311271
which is a 371 of PCT/GB2011/052491 12/15/2011

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
UNITED KINGDOM 1118777.0 10/31/2011 No Access Code Provided
UNITED KINGDOM 1109759.9 06/10/2011 No Access Code Provided
UNITED KINGDOM 1101259.8 01/25/2011 No Access Code Provided
UNITED KINGDOM 1021292.6 12/15/2010 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/16/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/454,944**

Projected Publication Date: 06/22/2017

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****
Title

Method and System for Logging Vehicle Behaviour

Preliminary Class

701

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop

technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andrew	William	Wright	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Surrey	Country of Residence i	GB

Mailing Address of Inventor:

Address 1	Cedar Springs, Waverly Drive		
Address 2			
City	Virginia Water	**State/Province**	
Postal Code	GU25 4 PZ	**Country** i	GB

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	30734		
Email Address	patents@bakerlaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	Method and System for Logging Vehicle Behaviour		
Attorney Docket Number	044228.010203	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	25	**Suggested Figure for Publication (if any)**	

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	30734		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	15061910	2016-03-04

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15061910	Continuation of	13994455	2013-07-24	9311271	2016-04-12

Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13994455	a 371 of international	PCTGB2011052491	2011-12-15

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
1118777.0	GB	2011-10-31	

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
1109759.9	GB	2011-06-10	

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
1101259.8	GB	2011-01-25	

			Remove
Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
1021292.6	GB	2010-12-15	

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

~~Assignee~~	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☐

Prefix	Given Name	Middle Name	Family Name	Suffix
	~~Gillian~~		~~Switalski~~	

Mailing Address Information For Applicant:

Address 1	~~16 Monks Road~~		
Address 2			
City	~~Wentworth~~	**State/Province**	
Country	~~GB~~	Postal Code	~~GU25 4RR~~
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button.

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix
	Andrew	William	Wright	

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1	16 Monks Road		
Address 2			
City	Wentworth	**State/Province**	
Country i	GB	Postal Code	GU25 4RR
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Assignee 2

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix
	Gillian		Switalski	

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Mailing Address Information For Assignee including Non-Applicant Assignee:			
Address 1	16 Monks Road		
Address 2			
City	Wentworth	**State/Province**	
Country i	GB	Postal Code	GU25 4RR
Phone Number		Fax Number	
Email Address			
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.			

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Mark H. Krietzman/			Date (YYYY-MM-DD)	2017-04-21
First Name	Mark H.	Last Name	Krietzman	Registration Number	41128
Additional Signature may be generated within this form by selecting the Add button.					

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	28997169
Application Number:	15454944
International Application Number:	
Confirmation Number:	6521
Title of Invention:	Method and System for Logging Vehicle Behaviour
First Named Inventor/Applicant Name:	Andrew William Wright
Customer Number:	30734
Filer:	Mark Krietzman H/Kate Duttera
Filer Authorized By:	Mark Krietzman H
Attorney Docket Number:	044228.010203
Receipt Date:	21-APR-2017
Filing Date:	09-MAR-2017
Time Stamp:	17:02:58
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Corrected Filing Receipt	010203_RequestCorrectedOFR.PDF	97902 e90de524a1f0fb0fc5c882fe035d00bb0fa8e714	no	1

Warnings:

Information:					
2	Miscellaneous Incoming Letter	010203_Marked-up_Official_Filing_Receipt_.PDF	224156 4b83e5c1afb3a7fad10d3dfc2b0821a0a07a786f	no	4
Warnings:					
Information:					
3	Application Data Sheet	010203_Supp_ADS.PDF	120365 c16ed35cd94c7aa4e60e1201e1ae1b21b7f671dd	no	9
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
			Total Files Size (in bytes):	442423	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
15/454,944	03/09/2017	3661	730	044228.010203	20	1

CONFIRMATION NO. 6521

FILING RECEIPT

30734
BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

OC000000089353526

Date Mailed: 03/17/2017

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Andrew William Wright, Surrey, UNITED KINGDOM;

Applicant(s)

Gillian Switalski, Wentworth, UNITED KINGDOM;

Assignment For Published Patent Application

Andrew William Wright, Wentworth, UNITED KINGDOM

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 15/061,910 03/04/2016
which is a CON of 13/994,455 07/24/2013 PAT 9311271
which is a 371 of PCT/GB2011/052491 12/15/2011

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
UNITED KINGDOM 1118777.0 10/31/2011 No Access Code Provided
UNITED KINGDOM 1109759.9 06/10/2011 No Access Code Provided
UNITED KINGDOM 1101259.8 01/25/2011 No Access Code Provided
UNITED KINGDOM 1021292.6 12/15/2010 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/16/2017

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/454,944**

Projected Publication Date: 06/22/2017

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****
Title

Method and System for Logging Vehicle Behaviour

Preliminary Class

701

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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NOT GRANTED

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technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
15/454,944

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*	x 210 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	730		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
AMENDMENT A	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
AMENDMENT A	Application Size Fee (37 CFR 1.16(s))									
AMENDMENT A	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
AMENDMENT B	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
AMENDMENT B	Application Size Fee (37 CFR 1.16(s))									
AMENDMENT B	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/454,944	03/09/2017	Andrew William Wright	044228.010203

CONFIRMATION NO. 6521

IMPROPER CPOA LETTER

30734
BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

OC000000089958624

Date Mailed: 03/17/2017

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 03/09/2017. The power of attorney in this application is not accepted for the reason(s) listed below:

- The revocation is not signed by the applicant, the assignee of the entire interest, or one particular principal attorney having the authority to revoke.

/ylueng/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PTO/AIA/80 (07-12)
Approved for use through 11/30/2014. OMB 0651-0035
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

■ Practitioners associated with Customer Number: 30734

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

■ The address associated with Customer Number: 30734

OR

☐ Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address: Andrew William Wright and Gillian Switalski
16 Monks Road
Wentworth, GU25 4RR
United Kingdom

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	A Wright	Date	8/12/2015
Name	Andrew William Wright	Telephone	+44 1344 844326
Title	Joint Assignee		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PTO/AIA/96 (08-12)
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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Andrew William Wright

Application No./Patent No.: Not Yet Available Filed/Issue Date: Concurrently Herewith

Titled: Method and System for Logging Vehicle Behavior

Andrew William Wright and Gillian Switalski, a individuals

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☑ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 037121, Frame 0850, or for which a copy thereof is attached.

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Mark H. Krietzman/	March 9, 2017
Signature	Date
Mark H. Krietzman	41,128
Printed or Typed Name	Title or Registration Number

[Page 2 of 2]

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	METHOD AND SYSTEM FOR LOGGING VEHICLE BEHAVIOUR
First Named Inventor/Applicant Name:	Andrew William Wright
Filer:	Mark Krietzman H/Kate Duttera
Attorney Docket Number:	044228.010203

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	70	70
UTILITY SEARCH FEE	2111	1	300	300
UTILITY EXAMINATION FEE	2311	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**730**

Electronic Acknowledgement Receipt

EFS ID:	28588364
Application Number:	15454944
International Application Number:	
Confirmation Number:	6521
Title of Invention:	METHOD AND SYSTEM FOR LOGGING VEHICLE BEHAVIOUR
First Named Inventor/Applicant Name:	Andrew William Wright
Customer Number:	30734
Filer:	Mark Krietzman H/Kate Duttera
Filer Authorized By:	Mark Krietzman H
Attorney Docket Number:	044228.010203
Receipt Date:	09-MAR-2017
Filing Date:	
Time Stamp:	18:45:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$730
RAM confirmation Number	031017INTEFSW00005335502036
Deposit Account	502036
Authorized User	Mark Krietzman
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	010203_ADS.PDF	1842280 c638669f79830898de12230e0fe1f46bdbaf936d	no	9
Warnings:					
Information:					
2	Oath or Declaration filed	Declaration_Copy.PDF	133196 4a987937249179b471a6cda7b13d8fd3070bf74a	no	1
Warnings:					
Information:					
3		010203_Application_AsFiled.PDF	255049 e8b36a30495a685a57157139461d16dc2e327040	yes	51

Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	46
Claims	47	50
Abstract	51	51

Warnings:					
Information:					
4	Drawings-only black and white line drawings	010203_Drawings.PDF	1336359 d3313fae7a9def48073e7e34f2ff7a965f99151d	no	25
Warnings:					
Information:					
5	Power of Attorney	010203_POA.PDF	299567 00b2379ddb9c3fd478945d7b6ed27fe838afb520	no	3

Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	35150 fb1f1c4f18f7ac171b360917cea6e9b5bfcb009a	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	3901601		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/AIA/14 (11-15)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Andrew	William	Wright	

Residence Information (Select One) US Residency ● Non US Residency Active US Military Service

City	Surrey	Country of Residence i	GB

Mailing Address of Inventor:

Address 1	Cedar Springs, Waverly Drive		
Address 2			
City	Virginia Water	**State/Province**	
Postal Code	GU25 4 PZ	**Country** i	GB

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	30734		
Email Address	patents@bakerlaw.com	Add Email	Remove Email

Application Information:

Title of the Invention	Method and System for Logging Vehicle Behaviour		
Attorney Docket Number	044228.010203	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	25	**Suggested Figure for Publication (if any)**	

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	30734		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	15061910	2016-03-04

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15061910	Continuation of	13994455	2013-07-24	9311271	2016-04-12
Prior Application Status	Expired				Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
13994455	a 371 of international	PCTGB2011052491	2011-12-15		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.					Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
1118777.0	GB	2011-10-31	
1109759.9	GB	2011-06-10	
1101259.8	GB	2011-01-25	
1021292.6	GB	2010-12-15	

Remove

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

PTO/AIA/14 (11-15)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

☐	This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

● Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☐

Prefix	Given Name	Middle Name	Family Name	Suffix
	Gillian		Switalski	

Mailing Address Information For Applicant:

Address 1	16 Monks Road		
Address 2			
City	Wentworth	**State/Province**	
Country	GB	Postal Code	GU25 4RR
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix
	Andrew	William	Wright	

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1	16 Monks Road		
Address 2			
City	Wentworth	**State/Province**	
Country i	GB	Postal Code	GU25 4RR
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

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NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Mark H. Krietzman/			Date (YYYY-MM-DD)	2017-03-09
First Name	Mark H.	Last Name	Krietzman	Registration Number	41128

Additional Signature may be generated within this form by selecting the Add button. Add

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	044228.010203
	Application Number	
Title of Invention	Method and System for Logging Vehicle Behaviour	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	METHOD AND SYSTEM FOR LOGGING VEHICLE BEHAVIOR

As the below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application, or

■ United States application or PCT international application number 13/994,455

filed on June 14, 2013.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Andrew William Wright Date (Optional): 23/7/2013

Signature: AWright

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Method and system for logging vehicle behaviour

Cross-reference to related applications

This application is a continuation of U.S. patent application no. 15/061,910 filed March 4, 2016, which is a continuation of U.S. patent application no. 13/994,455 filed July 24, 2013 and now issued as U.S. 9,311,271, which is a 371of international patent application PCT/GB2011/052491 filed December 15, 2011, which claims foreign priority to GB patent application no. 1118777.0 filed October 31, 2011, GB patent application no. 1109759.9 filed June 10, 2011, GB patent application no. 1101259.8 filed January 25, 2011, and GB patent application no. 1021292.6 filed December 15, 2010, the contents of which are incorporated in their entirety as if fully presented herein.

Field of the invention

The present invention relates to methods and systems for logging driving information associated with vehicle behaviour. Moreover, the present invention relates to a mobile device adapted for installation to a vehicle and configured to log such driving information, for example, video footage associated with how the vehicle is driven. Such driving information may subsequently be utilised to determine the cause of an event such as an accident, to modify driver behaviour and/or to determine insurance premiums.

Background

Data logging devices are commonly installed on aircraft that log data about events associated with the behaviour of the aircraft and also the crew controlling the aircraft. Such data logging devices are commonly termed "black boxes" and are very useful for determining the cause of problems that have effected the aircraft, especially when no other record of a significant event such as a crash exists.

Similar data logging devices exist for road vehicles, and can be used to realise similar advantages. Vehicle users as well as authorities can use such devices to determine the cause of traffic accidents or other vehicle-related events, whether these stem from a vehicle malfunction or driver negligence. For example, the data logged by these devices can be used as evidence for insurance claims and so potentially to determine insurance premiums.

Some of these data logging devices can be integrated with the car data network, and so may take inputs from sensors integrated with the vehicle, such as those measuring the speed of the vehicle. However, these can be difficult and costly to install. Others having their own internal sensor set are more readily retrofitted to a vehicle. Nonetheless, such data logging devices for road vehicles are less prevalent perhaps due to their unjustifiable expense. Accordingly the uptake of data logging devices that can be retrofitted to road vehicles, as are known in the art, has been minimal.

It is the object of the present invention to alleviate the above-mentioned problems, at least in part.

Summary of the invention

According to a first aspect of the present invention there is provided a mobile telecommunications device adapted for installation to a vehicle and configured to log driving information associated with the vehicle when driven, the mobile device comprising: a sensor set comprising at least one of an image sensor, an audio sensor, an accelerometer and a positioning module; a processor for processing sensor data from the sensor set to derive said driving information; a memory for storing said derived driving information; and a wireless telecommunications module operable to download an application; the mobile device being arranged to execute the downloaded application to control the mobile device to: register the start of a driving period during which the mobile device is installed to the vehicle and the vehicle is being driven by a driver; process sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven; and store a selection of the driving information to the memory.

Advantageously, the use of a mobile telecommunication device enables a data logging device to be conveniently and inexpensively retrofitted to a vehicle. Mobile telecommunication devices such as “smart-phones” are becoming increasingly widespread, and these devices tend to have the requisite sensor sets to capture data concerning vehicle behaviour. Thus, a generic mobile telecommunication device already owned by a driver of the vehicle can be loaded with the application to provide such data logging functionality that would otherwise necessitate a dedicated black-box. Thus, the functionality of a black-box can be realised without additional expense.

Following on from this, it will be appreciated that the mobile device is ideally a portable mobile telecommunication device. Ideally, the mobile device is a hand-portable mobile device. Advantageously, the portability permits the mobile device to be conveniently fitted to and removed from the vehicle.

Furthermore, such a mobile telecommunication device presents additional advantages over known dedicated black-box systems as the data logging functionality of the mobile telecommunication device can be continually refined. This can be achieved without physically upgrading the hardware of the device, and also without significant user intervention. Specifically, the application may be arranged to determine whether a software update exists and if so, control the mobile device to download at least portions of an improved version of the application. Conveniently, downloading may be via the wireless telecommunication module. Said downloading may be automatic, or may be user-confirmed. For the avoidance of doubt, the application will typically be stored on a portion of the memory of the mobile device and executed therefrom, as is known in the art. Also, it will be appreciated that the application, or portion thereof may be downloaded via the wireless telecommunication module and/or via an intermediary device. For example the application may be side-loaded to the mobile device from an intermediary computing device.

The application may be sourced from an application store and/or content provider. For example, the content provider may comprise the Apple® Appstore®. The content provider may comprise a cloud computing provider.

It will be appreciated that the use of such a generic mobile device in this context may be counter-intuitive to a person skilled in the art - such generic devices are not designed to withstand events such as catastrophic crashes. Furthermore, such generic devices are usually not necessarily configured to appropriately detect conditions that may need to be recorded. Such devices are usually kept in a user's pocket or bag, and so are not best placed to generate sensor data associated with the behaviour of a vehicle. However, the inventor of the present invention has realised that such a mobile device that is adapted for installation to the vehicle can overcome such drawbacks and fulfil a role similar to a black box. To this end, the mobile telecommunication device may comprise an adapter arranged to hold the device securely to the vehicle.

Advantageously, as well as protecting the device from damage, the adapter improves the suitability and reliability of the sensor data and so the driving information associated with when and/or how the vehicle is being driven. For example, if the sensor set comprises an accelerometer, the acceleration of the vehicle can be more accurately measured due to the mobile device being firmly attached to the vehicle. Similarly, if the sensor set comprises an image sensor, for example, for capturing video footage of the road ahead, better footage can be obtained as the mobile device can be held in the correct position and orientation relative to the vehicle. In particular, the mobile device may be positioned by the adapter so that its image sensor views the road ahead through a windshield of the vehicle.

As mentioned, the device is arranged to log driving information associated with the vehicle, when that vehicle is being driven. This is realised by registering the start of the driving period during which the mobile device is installed to the vehicle and the vehicle is being driven by the driver. Advantageously, this prevents driving information from being needlessly recorded. As will be appreciated the mobile device has only a finite storage capacity and so registering the start of the driving period is useful for minimising the unnecessary usage of memory. In particular, where the mobile device comprises an image sensor, and the sensor data comprises a sequence of images (e.g. a video) the storage space can be very quickly filled by the memory.

To this end, it is preferred that when the application is executed, it controls the mobile device to register the start of a driving period in response to an initialisation input. The initialisation input may comprise a user input - for example, the user manually executing the application on the mobile device. The initialisation input may also or instead be generated automatically in response to the mobile device being installed to the vehicle and/or the vehicle being driven. The initialisation input may be generated automatically in response to the sensor data having predetermined values. For example, if the sensor data reflects a detected speed above a predetermined threshold – for example, 20 kilometres per hour – then this can be used to trigger the start of the driving period. Similarly, if the sensor data reflects that the mobile device is held securely to the vehicle in a predetermined position (for example, via the adapter) this can also be used to trigger the start of the driving period. To this end, the adapter and/or the mobile device may comprise a registration module configured to register the installation of the mobile device to the vehicle and/or the adapter. The

registration module may comprise a proximity sensor to detect the proximity of the mobile device to the vehicle. The registration module may comprise a NFC (near field communication) device. The registration module may be arranged to determine a match between the location of the mobile device and the location of the vehicle. The match may be performed by receiving and comparing a first positioning input associated with the position of the vehicle and a second positioning input associated with the position of the mobile device. The registration module and/or adapter may be a smart holster.

Preferably, the executed application controls the mobile device to manage voice-calls incoming to the mobile device during a driving period. For example, said voice-call management may comprise temporarily disabling and/or diverting voice-calls incoming to the mobile device during a driving period. Advantageously, this safety feature discourages users from making or receiving phone calls whilst driving. It will be appreciated that a driver is less able to control a vehicle effectively whilst also manipulating a mobile device, and in many countries doing so is illegal. However, the provision of a 'hands-free' mode or accessory – as are well known in the art - may obviate the need for a user to manipulate the mobile device. Accordingly, the executed application may be arranged to control the mobile device to selectively disable and/or divert voice-calls incoming to the mobile device during a driving period, in dependence on the detection of a hands-free accessory or hands-free mode enabled on the mobile device.

Furthermore, the executed application may be arranged to control the mobile device to enable a hands-free mode of operation on detection of a driving period. For example, the enabled hands-free mode of operation may comprise enabling voice-activated commands. In light of this, it is preferred that the adapter is configured to hold the mobile device in a way that facilitates reception of voice commands from the user. In particular, the mobile device may be held in a position relative to the user to permit clear reception of the users voice. Typically, this position is about the dashboard in a vehicle such as car or van. Furthermore, the adapter is configured with an opening through which an audio sensor of the mobile device is able to receive the user's voice.

Also, even though a drivers control of a vehicle may be affected by manipulating the mobile device, under certain circumstances, this may not be objectionable – for example, when the vehicle is stationary. Accordingly, the executed application may be arranged to

control the mobile device to selectively disable and/or divert voice-calls incoming to the mobile device during a driving period, in dependence on the driving information – for example, the speed and location of the vehicle.

Furthermore, it will be appreciated that the driver may not be the only user within the vehicle, and so disabling functions of the mobile device may not be appropriate under all circumstances, as a passenger of the vehicle may want to use the mobile device whilst the driver is driving. Under these circumstances, the executed application is arranged to control the mobile device to register the presence of a non-driver (for example, via image recognition, or entry of an unlock code) and unlock, or retain the original functionality of the mobile device. Furthermore, the executed application may be arranged to run in the background. Accordingly, the mobile device may be used for other purposes, such as making or receiving a telephone call.

It is advantageous to store only selected driving information for the purpose of logging how a vehicle is being driven during the driving period. Whilst it may be possible to sample and process sensor data at a relatively high rate (i.e. many times a second), continually storing driving information derived from that sensor data at such a high rate can use up a lot of storage space on the mobile device, the majority of which is likely to be redundant. Therefore, by being selective about the driving information that is stored, storage utilisation can be made more efficient.

In particular, the executed application may control the mobile device to store a summary of the driving period. The summary may comprise compressed and/or summarised driving information. For example, the sensor data can be processed at a first sampling rate and then down-sampled to a fraction of the first sampling rate for storage as driving information. Put another way, the mobile device can be controlled by the executed application to down-sample sensor data from a first sampling rate to a second sampling and store the sensor data as driving information at said second sampling rate. Advantageously, this retains a snapshot of when and/or how the vehicle is being driven, but with fewer data points, and so requiring less storage space.

Nonetheless, under certain circumstances, it is more useful to retain information at higher or the highest possible sampling rates. In particular, it is more important to have

detailed information associated with the behaviour of a vehicle during a crash than when the vehicle is being driven normally.

Accordingly, the executed application may be arranged to control the mobile device to detect the occurrence of a predetermined event of significance (such as a crash) and in response store driving information associated with that event to the memory. Preferably, said driving information associated with that event comprises driving information in the lead up to and immediately following the event. In particular, detailed driving information in the lead up to, and immediately following a predetermined event of significance is preferably stored. It will be understood that the driving information associated with the detected event may be transmitted via the wireless telecommunication module in addition to, or instead of storing said data. Said transmitted driving information may be transmitted to a remote data logging system.

To this end the mobile device may comprise an event detector for detecting the occurrence of an event.

Preferably, the event detector is arranged to detect the occurrence of a predetermined event by correlating data, such as sensor data, against an event indication model. The application may comprise the event indication model.

Preferably, the event indication model comprises a set of predetermined data values corresponding to a predetermined event. Accordingly, the event detector is arranged to compare the set of predetermined data values against corresponding sensor data to determine whether the predetermined event has occurred.

For example, the event indication model may indicate that a serious crash has occurred if values returned by an accelerometer sensor exceed predetermined data values of the event indication model, thereby representing a sustained vehicle deceleration beyond a threshold level. Following on from this, it will be appreciated that detection of an event may be dependent on matching a sequence of data values that have occurred over time. Moreover, the event indication model may comprise a sequence of predetermined data values, the sequence being associated by a function of time. Thus, the event detector may be arranged to compare the sequence of predetermined data values against corresponding sensor data that have been generated over a given time period. Put another way, the event detector and event indication model are arranged to indicate the occurrence of an event in dependence on the

correlation between a set of predetermined data values occurring over time. Thus, a set of values returned from sensor data over a period of time are compared against a corresponding sequence of predetermined data values of the event indication model. Typically, this is to determine a rate of change of variables associated with a sensor set.

It will be understood that an event indication model may comprise a plurality of sets of predetermined data values, each set corresponding to different sensor data. For example, an event indication model associated with a serious accident event may contain data values corresponding to both the deceleration of the vehicle, and the orientation of the vehicle. Thus, if a vehicle is involved in a serious impact, and overturns, this is represented by the model, and so can be detected by the event detector.

Preferably, the event indication model comprises a pattern of predetermined data values. Preferably, the event detector is arranged to detect the occurrence of an event by carrying out pattern recognition by matching sensor data values to the pattern of predetermined data values of the event indication model. Preferably, there are a plurality of event indication models. Each event indication model may be associated with a separate predetermined event.

Preferably, the executed application may be arranged to control the mobile device to process sensor data from the sensor set during a plurality of driving periods to derive driving information associated with when and/or how the vehicle is driven for each of the driving periods. Preferably, sensor data processed during a first set of driving periods define a benchmark against which sensor data is compared during subsequent sets of driving periods. In particular, the executed application may be arranged to control the mobile to modify one or more event indication models in response to the benchmark. Advantageously, such a benchmark ensures that the event indication models may be tailored to the standard behaviour of a particular vehicle. As will be appreciated, different sensor types, mobile devices, mounting positions, vehicles, drivers and road conditions may generate different sets of sensor data for driving behaviour that is considered standard or safe. Accordingly, the benchmark allows the mobile device to account for variable driving conditions.

Preferably, a plurality of benchmarks may be defined. A benchmark may be defined for each driver. A benchmark may be defined for each vehicle to which the mobile device is to be installed. Ideally, a benchmark is defined for each driver-vehicle pair. To this end, the

mobile device may be arranged to receive an input to specify a driver, a vehicle or a driver-vehicle pair. Advantageously, this ensures that different drivers and vehicles do not disrupt the accurate event detecting capabilities of the event detector.

Once a predetermined event has been detected by the event detector, it is desirable to take an appropriate action in response to that detected event. Accordingly, the executed application may be arranged to control the mobile device to take at least one predetermined action in response to a detected event. The action taken may comprise transmitting driving information and/or sensor data, via the wireless telecommunication module of the mobile device, to a remote system. Advantageously, this enables a remote system to be notified of the occurrence of a particular event, and the details associated with that event. For example, the remote system may be arranged to deploy emergency services based on a transmitted notification concerning the occurrence of a crash, and also the location of the mobile device (and so the vehicle) are also included in the transmitted information. A further advantage of transmitting driving information and/or sensor data to a remote system is that such data then does not need to be stored on or processed by the mobile device. Thus, this can free the storage space on the mobile device, and also allow the processor of the mobile device to carry out other tasks. A remote system may comprise or be interfaced with an insurance company database.

A further advantage associated with sending driving information to a remote system is that the driving information can be assessed remotely. This assessment can be performed automatically or manually - either way it advantageously removes the processing burden from the mobile device. Alternatively, if transmission bandwidths are small, the processing can be executed automatically on the processing device. In this case, the use of virtual neural networks can be used to determine whether the driving information represents acceptable or unacceptable driving patterns.

The action taken may comprise storing data captured at a higher (or the highest possible) sampling rate than when an event is not detected. Thus, as described above, this may involve preventing the down-sampling of sensor data. Furthermore, the action taken may comprise protecting said driving information from being overwritten.

The action taken may comprise providing feedback to a user to indicate that an event has been detected. Preferably, the mobile device is configured to receive a user interaction to

confirm or deny whether the detected event has actually occurred following said feedback. Advantageously, such user feedback can be used to modify event indication models thereby to refine the effectiveness of the event detector. The mobile device may comprise a speaker. Accordingly, such feedback may be provided via an audio prompt. The mobile device may comprise a display screen. Accordingly, such feedback may be provided via a visual prompt. The feedback may comprise notifying a user that a further action has been scheduled, and will be taken within a predetermined period. For example, the feedback may indicate to a user that an event such as a serious crash has been detected, and so the next action to be taken will be to contact emergency services within 10 seconds. Preferably, the feedback includes a prompt to receive a user input. For example, the prompt may be arranged to receive a user input to cancel a subsequently scheduled action. Advantageously, this prevents actions being taken needlessly as a result of an incorrect determination of an event.

The feedback may provide reassurance and/or guidance to a user. For example, a user may be provided with an important checklist of things to do following an accident or incident. For example, the user may be guided to use a camera (image sensor) on the mobile device to take photographs of the vehicles involved in the incident, including the number plates of those vehicles. The user may be guided to use a text input device on the mobile device to note the name, address, insurance details etc of third parties involved in incident.

The action taken may comprise communicating to a remote system associated with an insurance company that an incident has been detected (e.g. via a low bandwidth data connection or via text message). If appropriate – or in response to a request from a communication to the mobile device from the remote system – the action taken may comprise transmitting all or selected portions of the driving information associated with the detected event.

Preferably, the executed application is arranged to control the mobile device to prioritise essential communications, such as calls to the emergency services.

Preferably, the memory comprises a long term memory for persistently storing driving information and/or sensor data. Preferably the memory comprises a buffer. The buffer may comprise a short term memory for transiently storing driving information and/or sensor data. Preferably, the short term memory is arranged to receive driving information

and/or sensor data at a higher update rate than the long term memory. Preferably, the long term memory has a larger capacity than the short term memory.

Preferably, the executed application controls the mobile device to write driving information and/or sensor data to the short term memory at a predetermined update rate during the driving period. Ideally, the driving information and/or sensor data is written to the short term memory in a predetermined sequence, ideally a chronological sequence. Preferably, the executed application controls the mobile device to overwrite driving information and/or sensor data previously written to the short term memory. Advantageously, this ensures that recording of sensor data and/or driving information, especially data that is recorded at a relatively high update rate, is not prevented during the driving period due to the short term memory becoming full.

Preferably, the driving information and/or sensor data is overwritten in accordance with the predetermined sequence. Advantageously, this can ensure that the most relevant, up-to-date data is retained in the short term memory.

Preferably, the action taken in response to a detected event comprises transferring data from the short term memory to the long term memory. Advantageously, this can ensure that the most recent information associated with an event is persistently stored in the long term memory, and is not overwritten.

Preferably, the sensor set comprises an accelerometer for detecting the acceleration of the mobile device. Accordingly, the corresponding sensor data may comprise acceleration data generated by the accelerometer. The accelerometer may be a single axis or dual axis accelerometer. However, it is preferable that the accelerometer is a three-axis accelerometer so that movement of the vehicle may be determined in three-dimensional space. Furthermore, as the mobile device may be mounted by a user in one of a number of different orientations relative to the vehicle, a three-axis accelerometer ensures that acceleration along the axis aligned with the general forward movement of the vehicle may be effectively detected. This is particularly important to determine an event such as heavy braking of the vehicle and/or a crash.

Preferably, the sensor set comprises an image sensor such as a camera. Accordingly, the corresponding sensor data may comprise images and/or a sequence of images generated from the image sensor. Said sequence of images may be processed and/or stored in the form

of a video. Advantageously, this can improve the space utilisation of the sequence of images. Preferably, the mobile device is arranged to receive a user input to store a user-selected image or sequence of images to the memory. The image sensor data may be processed to determine safety information and feedback said safety information to the driver. For example, the mobile device may be controlled to determine the proximity of the mobile device to other vehicles. Said determination may be via comparing the apparent size of the number plate of other vehicles in an image with a known size of a standard number-plate, and from that the distance to those other vehicles. Thus, the mobile device can make a determination that another vehicle is too close, and issue a warning to the driver to slow down to avoid a collision. Similarly, images of the road ahead may be processed to determine whether a vehicle is drifting out of lane (e.g. because the driver is falling asleep). In response to such a determination, an alert can be issued. Similarly, images of road signs may be processed to assess driver behaviour.

It will be appreciated that the mobile device may comprise a plurality of image sensors. For example, the mobile device may have a forward-facing camera and a rear-facing camera. Accordingly, it may be possible to view images of the road ahead, external to the vehicle, and also from inside the vehicle. In particular, the mobile device may be arranged to capture images or a sequence of images of the driver. Images of the driver may be processed to make a safety determination. For example, the images may be processed to detect whether the driver is falling asleep. In particular, a blink rate of the driver may be detected by processing the image data. Similarly, a determination may be made whether the driver has their eyes closed. In response to such a determination that a driver is falling asleep, the mobile device may be arranged to issue an alert so as to wake the driver.

Preferably, the sensor set comprises an audio sensor such as a microphone. Accordingly, the corresponding sensor data may comprise audio data.

Advantageously, an image sensor and/or an audio sensor can provide an important record of an event such as a crash.

Preferably, the sensor set comprises a positioning module arranged to determine the position of the mobile device. The positioning module may comprise a GPS module. The positioning module may be arranged to utilise the wireless telecommunication module to self-localise, for example by determining a position relative to one or more mobile

telecommunication cell towers. Advantageously, the positioning module can allow the mobile device to determine its position (and so the position of the vehicle) over time. Accordingly, the positioning module can thus determine the speed of the mobile device and vehicle. Thus, the corresponding sensor data may comprise latitude, longitude, elevation, speed and other data obtainable from positioning modules such as GPS modules as is known in the art.

Preferably, the sensor set comprises an orientation sensor for determining the orientation of the mobile device. Said orientation sensor may comprise an electronic compass for determining a bearing, and so the direction in which the mobile device is facing. Accordingly, the corresponding sensor data may comprise orientation and bearing data. Advantageously, such data can be used to augment the data of the positioning module. Furthermore, the executed application may be arranged to use the data from the orientation sensor to determine whether the mobile device has been fitted to vehicle, and whether the mobile device has been fitted in the correct orientation. Advantageously, the data from the orientation sensor may also be used to determine whether a significant event has occurred, such as the vehicle overturning.

Preferably, the sensor set comprises a user-input device arranged to receive an input from a user. The user input device may comprise at least one of buttons and a touch-sensitive display screen. Advantageously, this allows a user to input data to the mobile device.

Preferably, the mobile device comprises a timer. Preferably, the executed application is arranged to control the mobile device to record sensor data and/or driving information against time as determined by the timer. Accordingly, the timer can be used to time-synchronise sensor data and/or driving information.

Preferably, the executed application is arranged to encrypt the driving information stored on the memory. Advantageously, this reduces the possibility of said driving information being modified without authorisation. This is an important consideration when such driving data may be used as evidence, for example, when determining the cause of an accident.

Preferably, the mobile device is arranged to interface with an external device to receive external driving information from said external device. It will be appreciated that the sensor set onboard the mobile device may be supplemented by a sensor set external to the

mobile device. For example, the external device may be an engine management system of the vehicle and/or the external device may be arranged to connect to the on-car data network of the vehicle. Thus, the external device may have access to information associated with the behaviour of the vehicle (for example, the speed of the vehicle, how much the brake pedal is being pressed, etc). Such driving information can be processed and/or stored by the mobile device under control of the executed application in a manner similar to driving information derived from sensor data internal to the mobile device.

Preferably, the mobile device is arranged to interface with an external device wirelessly, for example via a Bluetooth® connection. Advantageously, this removes the need for the mobile device to be physically connected to the external device. As will be appreciated, following a driving period, a user may want to leave the vehicle and so take a personal mobile telecommunication device with them, and so a wireless interface with such an external device obviates the inconvenience of physically detaching and then subsequently re-attaching the mobile device.

Preferably, the mobile device is further controlled by the application to determine a unique identifier associated with the mobile device and retrieve from the memory and transmit via the wireless telecommunication module to a remote system said driving information paired with said unique identifier.

Advantageously, by pairing an identifier uniquely associated with the mobile device enables the remote system to unambiguously determine the source of the driving information. Accordingly, said driving information can be matched to a particular driver and/or vehicle. This is particularly useful when assessing a risk profile of said driver.

Preferably, the mobile device is controlled by the executed application to process the driving information to generate a driving score. The driving information may comprise the driving score.

Preferably, the mobile device comprises a display screen. Preferably, the display screen is touch-sensitive. Advantageously, the display screen may thereby be user-interactable. Preferably, the mobile device comprises a graphical user interface (GUI). The graphical user interface comprise user-interactable artefacts such as buttons. Preferably, the user-interactable artefacts may be displayed on the screen and receive a user input for

selection or control of those artefacts. The mobile device may be controlled to selectively hide those artefacts in dependence on the state of the mobile device.

Preferably, the mobile device is controlled by the application to provide feedback about the driving information and/or values of the sensor data. Ideally, such feedback is via the display screen. For example, a detected speed may be displayed, a time elapsed may be displayed, a bearing/heading may be displayed, a detected position may be displayed and/or a detected image or sequence of images may be displayed (e.g. via a video feed).

According to a second aspect of the present invention there is provided a mobile telecommunications device adapted for installation to a vehicle and configured to log driving information associated with the vehicle when driven, the mobile device comprising: a sensor set comprising at least one of an image sensor, an audio sensor, an accelerometer and a positioning module; a processor for processing sensor data from at least the sensor set to derive said driving information; a memory for storing said derived driving information; a wireless telecommunications module operable to download a controlling application; and a registration means for registering the start of a driving period during which the mobile device is installed to the vehicle and the vehicle is being driven by a driver; wherein, the processor is arranged to process sensor data from the sensor set during the driving period to derive driving information associated with when and/or how the vehicle is driven and store a selection of the driving information to the memory.

According to a third aspect of the present invention there is provided a mobile telecommunications device adapted for installation to a vehicle and configured to log driving information associated with the vehicle when driven, the mobile device comprising: a sensor interface arranged to receive sensor data from a sensor set; a processor for processing the sensor data to derive said driving information; a memory for storing said derived driving information; a wireless telecommunications module operable to download a controlling application; and a registration means for registering the start of a driving period during which the mobile device is installed to the vehicle and the vehicle is being driven by a driver; wherein, the processor is arranged to process sensor data from the sensor set during the driving period to derive driving information associated with when and/or how the vehicle is driven and store a selection of the driving information to the memory.

Preferably, the sensor interface is arranged to receive sensor data from a sensor set external to the mobile device. Preferably, the sensor interface is arranged to interface with an external device as described in relation to the first aspect of the present invention. Advantageously, this enables a mobile device to utilise a richer or better equipped sensor set than that local to the mobile device.

According to a fourth aspect of the present invention there is provided a mobile device adapted for installation to a vehicle and configured to log driving information associated with the vehicle when driven. Preferably, the mobile device comprises a sensor interface arranged to receive sensor data from an external sensor set. The mobile device may comprise an internal sensor set. Preferably, the mobile device comprises a processor for processing the sensor data to derive said driving information. Preferably, the mobile device comprises a memory for storing said derived driving information. Preferably, the mobile device is a mobile telecommunication device, comprising a wireless telecommunications module. Preferably, the wireless telecommunications module is operable to download an application. Preferably, the mobile device comprises a registration means for registering the start of a driving period during which the mobile device is installed to the vehicle and the vehicle is being driven by a driver. Preferably, the processor is arranged to process sensor data from the sensor set during the driving period to derive driving information associated with when and/or how the vehicle is driven. Preferably, the mobile device is arranged to store a selection of the driving information to the memory. Preferably, the mobile device is arranged to transmit a selection of the driving information via the wireless telecommunication module. The mobile device may be arranged to transmit a selection of the driving information via the wireless telecommunication module to a remote system such as a remote data-logging system. Advantageously, transmitting (rather than storing) selected driving information prevents storage space local to the mobile device being used up.

According to a fifth aspect of the present invention there is provided a method of logging driving information associated with a vehicle when driven, the method comprising: adapting and installing a mobile device to the vehicle, the mobile device comprising a memory; registering the start of a driving period during which the mobile device is installed to the vehicle and the vehicle is being driven by a driver; processing sensor data from a sensor set during the driving period to derive driving information associated with when

and/or how the vehicle is driven; and storing a selection of the driving information to the memory of the mobile device.

According to a sixth aspect of the present invention there is provided a data-logging system for logging driving information comprising: a database for storing a plurality of accounts, each account having a unique identifier and the database being arranged to store driving information associated with at least one of a vehicle and a driver; a communications interface arranged to communicate with a remote mobile device, and receive therefrom: a unique identifier for association of the mobile device with a corresponding one of the plurality of accounts; and driving information to be logged to that corresponding account.

The remote mobile device may be a mobile device in accordance with one of the first to fourth aspects of the present invention.

Preferably, the driving information comprises a driving score. Preferably, the driving information comprises sensor data captured and processed by the mobile device during a driving period during which the mobile device is installed to a vehicle being driven by a driver.

Preferably, the system is arranged to process the driving information logged to the corresponding account to generate a driving score. The driving score may be used to determine a risk profile for at least one of the vehicle and driver. The driving score may be used to define an insurance premium associated with the account.

Preferably, the system is further arranged to communicate to a mobile device an insurance offer generated in response to the driving information received from the mobile device. The data logging system may be further arranged to receive from the mobile device a user-acceptance of the insurance offer.

The mobile device may be arranged to generate an insurance offer in response to a predetermined set of conditions being met. For example, driving information over a plurality of driving period adhering to predetermined models. Such models may comprise safe driving parameters and/or thresholds.

For brevity, it will be understood that features, functions and advantages of different aspects of the present invention may be combined or substituted where context allows. For example, features, functions or advantages of the mobile device described in relation to the

first to fourth aspects of the present invention may be provided as method steps in the method of logging driving information according to the fifth aspect of the present invention.

Brief Description of the Drawings

In order that the invention may be more readily understood, reference will now be made, by way of example, to the accompanying drawings in which:

Figure 1 is a schematic illustration of a system within which the mobile device of various embodiments of the present invention may be used;

Figure 2 is an illustration of the automobile of Figure 1 configured with a mobile device in accordance various embodiments of the present invention;

Figure 3 is a schematic illustration of the functional components of the mobile device of Figure 2;

Figure 4a is a process flow chart, illustrating method steps executable by the mobile device of Figures 2 and 3;

Figure 4b is a more detailed process flow chart, providing an example of how a driving incident or event may be detected in accordance with embodiments of the present invention; and

Figures 5 to 24 illustrate a graphical user interface of the mobile device according to Figures 1 to 4b.

Detailed Description of the Embodiments

Specific embodiments are now described with reference to the appended figures.

A preferred embodiment of the present invention relates to a mobile telecommunications device for recording events associated with a vehicle, such as a car. In particular, the mobile telecommunications device is loaded with an application – a 'mobile app' – which is arranged to record and document the events surrounding an incident involving the vehicle (a 'driving incident'), such as a vehicle collision. The mobile application may be referred to as the 'Witness' application in the ensuing description.

Figure 1 illustrates a system 1 within which a vehicle, such as an automobile 3 configured with a mobile telecommunications device executing the Witness application, may communicate with one or more remotely located devices or systems. Such devices may relate

to one or more servers, such as an insurance server 5, an emergency services server 7, a content provider server 9, and a personal computer 11. Communication between the automobile 3 and the one or more remotely located devices 5, 7, 9, 11 may be effected via a shared communication network 13. The shared communication network may relate to a wide area network (WAN) such as the Internet, and may also comprise telecommunications networks. For example, the mobile telecommunications device of the present embodiments may be arranged to communicate with any one of the remotely located devices 5, 7, 9, 11 via a mobile telecommunications base station 15, which is coupled to the shared mobile telecommunications network 13.

A main purpose of the mobile telecommunications device, when arranged within a vehicle in motion, such as the illustrated automobile 3, is to monitor and process sensor data captured by the mobile device, to derive driving information associated with the moving automobile 3. As mentioned previously, this driving information is subsequently used by the mobile device to determine if a driving incident or event has occurred. The term “driving incident” as used within the present context may relate to an event such as a collision, a near-miss, dangerous driving, erratic driving or similar. Similarly, the driving information may be used as a means for monitoring a driver’s driving performance, and determining a driving characteristic, or user profile for the subject driver. In other words, the sensor data and/or the driving information may be used to determine for example, if the driver is a cautious driver, or a reckless driver. This information may be used, for example by an insurance provider, to conduct a risk assessment and to tailor an insurance premium to the subject driver on the basis of a determined driving characteristic. Further details of this alternative embodiment are described below.

The 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. The application may be downloaded to the mobile device via the shared communications network 13 and telephone base station 15, from the content provider server 9.

In use (once the application has been configured for execution on the mobile telecommunications device), when a driving incident has been detected by the mobile telecommunications device, data, comprising one or more of mobile device sensor data,

derived driving information, and captured image data may be automatically forwarded to one or more of the remotely located devices 5, 7, 9, 11. For example, the mobile device may be configured such that when a driving incident is detected, such as a collision involving an automobile 3, driving information (including image data captured by the mobile device) derived from the sensor data is automatically forwarded to the insurance server 5, via the base station 15 and shared communications network 13. In this way, data relating to the driving incident (a collision in this example), is automatically forwarded to the automobile user's insurance provider, for use in claim settlement, and/or to determine culpability.

Similarly, once a driving incident has been detected, data may also be automatically forwarded to the emergency services server 7. For example, such data may comprise the position information of the automobile 3, along with an automated S.O.S. message requesting assistance from the emergency services. Forwarded data may also comprise sensor data, and any relevant derived driving information, such as speed of impact, the g-forces the vehicle was subjected to during the collision, or any other information wherefrom the severity of the collision may be determined, and which may be used to assist the emergency services in coordinating the appropriate level of response.

Optionally, an electronic message may be sent to a personal contact preselected by the user. For example, an automated message, such as an e-mail, may be forwarded to the PC 11 of the user nominated personal contact, informing the personal contact that the user of the vehicle 3 has been involved in a driving incident. Similarly, and due to the mobile device's telecommunications functionality, an electronic text message, such as an SMS (Short Message Service) may be forwarded to the telephone of the user selected personal contact, informing the contact of the driving incident. The mobile device may be equally be arranged to communicate with a personal contact via any known electronic messaging service and/or instant messaging service too. For example, via Apple's® iMessage, or RIM's® BlackBerry Messenger (BBM) service.

This functionality of forwarding a message to a nominated contact, may also be of particular benefit for managing large fleets of vehicles. For example, a car hire service. In this way, if any of the vehicles comprised in the fleet are involved in a driving incident, the car hire service may be automatically notified of the identity of the specific vehicle involved in the driving incident. In such embodiments, the nominated personal contact would be

preselected by the vehicle fleet manager. The option of providing a second user selected personal contact is also envisaged. In this way, a message may be forwarded to both the car hire service for example, and to the driver's selected personal contact.

In preferred embodiments the mobile telecommunications device relates to a mobile telephone having native processing functionality, and preferably relates to a smartphone. Preferably, the mobile telephone comprises a camera arranged to enable image capture, and preferably arranged to enable a sequence of images to be captured taken in temporal succession. In other words, in preferred embodiments the mobile telephone comprises a camera configured to enable video footage of a sequence of events to be captured.

Alternatively, the mobile telecommunications device may relate to a PDA, a notepad such as an iPad®, or any other mobile device comprising local processing means and means for communicating with a telecommunications network.

Figure 2 provides a more detailed view of the automobile 3 of Figure 1, and illustrates a preferred arrangement of the mobile telecommunications device 17 within the automobile 3. In the illustrated embodiment, the mobile telecommunications device 17 relates to a smartphone configured with an image capture device, such as a camera. Preferably, the device 17 is arranged within the vehicle, such that the camera has a clear line of sight of the road in the principle direction of travel of the automobile 3. For example, the device 17 may be attached to the windshield 19 of the automobile 3 in an adapter 21. The adapter 21 may comprise a flexible telescopic arm, configured with a suction cup at one end for affixing the adapter to the windshield 19, and a dock arranged at the opposite end for securely holding the telecommunications device 17 in place. The telescopic arm enables the position of the device 17 to be varied, such that a clear line of sight in the direction of travel may be obtained.

The details of the adapter 21 are irrelevant for present purposes, with the exception that it must enable a clear line of sight in the principle direction of travel of the vehicle to be obtained, and it must firmly affix the mobile to the vehicle. Affixing the mobile telecommunications device 17 to the automobile 3, ensures that the mobile device 17 is able to accurately capture the automobile's state of motion. By principle direction of travel is intended the main direction of travel of the vehicle when operated in a conventional way, indicated by the arrow **A** in Figure 2. In other words, the forward direction of travel. The skilled reader will appreciate that whilst most vehicles, such as an automobile, may have

more than one direction of travel (e.g. travelling backwards when in reverse gear), the majority of vehicles have a primary direction of travel, which is the intended direction of travel for any transit of substantial length and/or distance. Arranging the telecommunications device 17 relative to the direction of principal travel, ensures that the camera (not shown) of the telecommunications device 17 is well placed to capture any image data which may be pertinent to a subsequently detected driving incident, such as a collision.

Figure 3 is a schematic of the modular components of the mobile telecommunications device 17 of Figure 2. Preferably the mobile telecommunications device 17 comprises: an image capture module 21, an accelerometer 23, a GPS receiver 25, an audio capture module 27, a communications module 29, a processor module 31 and a storage module 33. The image capture module 21, accelerometer 23, GPS receiver 25, and audio capture module 27 form a sensor set and are generically referred to as data capture modules in the ensuing description, and are differentiated from the communications module 29, processor module 31 and storage module 33, in that they comprise sensors for sampling physical data.

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.

The image capture module 21 may relate to any image capture device, such as an integrated camera commonly found in smartphones or similar mobile devices. As mentioned previously, the image capture module 21 is preferably configured to capture a plurality of images taken in temporal succession, such as provided by a video camera.

The accelerometer 23 is arranged to provide information regarding the motion of the automobile 3 along all three dimensional axes. For example, the accelerometer 23 provides information regarding the pitch, yaw and roll of the automobile 3. Sensor data captured from the accelerometer 23 may be used to determine the g-forces the automobile has been subjected to. This is particularly useful in determining the severity of a collision. In general, the greater the g-forces experienced in a collision, the greater the risk of serious injury to the passengers of the vehicle. This information may assist the emergency services in forming an initial assessment of the severity of a collision. Furthermore, this type of data may also assist the emergency services and/or insurance provider to obtain a better understanding of the driving incident. For example, in the event of a collision, this data may assist the emergency services and/or insurance provider to obtain a better understanding of how the collision

occurred. This information may subsequently be used for dispute resolution, and/or for determining culpability.

The GPS receiver 25 is arranged to provide location information, such as positional coordinates, and can also provide velocity information. When combined with the accelerometer sensor data, the GPS receiver data can be used to provide a very accurate model of a driving incident, such as a collision. In particular, the GPS sensor data provides velocity data, such as the velocity of impact. The velocity data enables one to determine if a vehicle was being driven at speeds greater than the legally permitted maximum speeds.

The audio capture module 27 provides means, such as a microphone, for recording audio data, which might be generated by a driving incident. This includes 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. Such audio data may also help to recreate a driving incident, and understanding the causes of the incident.

The communication module 29 provides the mobile telecommunications device 17 with functionality for communicating with the remotely located devices 5, 7, 9, 11 of Figure 1. The communication module 29 comprises a wireless telecommunications sub-module 31 enabling communication over a telecommunications network. An optional wi-fi communication sub-module is also envisaged. Similarly, the presence of wired communication modules are also envisaged, such as a USB port and/or an IEEE 1394 interface (more commonly known as FireWire™) to support wired communication with a remote device, such as a personal computer or similar. Such a connection may be useful for the purposes of side-loading the application to the mobile device.

As mentioned previously, sensor data captured from any one of the aforementioned data capture modules 21, 23, 25, 27 is processed by the processor module 33, to generate driving information. By driving information is intended any data which may be derived from raw sensor data captured by any one of the aforementioned modules 21, 23, 25, 27. For example, g-force data is driving information which is derived from the sensor data sampled by the accelerometer 23. The skilled reader will be familiar with the plurality of types of driving information that may be derived from sensor data sampled by the aforementioned

modules, and accordingly a complete list of the different types of driving information that may be derived from sampled sensor data is omitted for brevity.

The processor module 33 is also configured to analyse sampled sensor data and generated driving information to determine if a driving incident has occurred (described in more detail below).

Sampled sensor data is stored in storage 34, which is operatively coupled to the processor module 33, along with any generated driving information. The storage 34 is preferably configured with a FIFO (First In First Out) storage buffer 34a, and a permanent storage component 34b. In preferred embodiments, the data capture modules are configured to sample data at periodic intervals. Preferably, these intervals are sufficiently small, of the order of milliseconds, such that for practical purposes the data capture modules may be considered to sample data continuously. The sampled data, along with any derived driving information is preferably stored in the storage buffer 34a, unless a driving incident has been identified, in which case the associated sensor data and driving information is stored in the permanent storage component 34b to avoid undesirable overwriting.

In preferred embodiments, the FIFO storage buffer 34a is provided with a finite amount of storage space. Nonetheless, said storage space may be predefined by the user as will be described below. In any case, once this storage space has been exhausted, the oldest recorded data is overwritten by newly sampled data, and this cycle of overwriting older data with newly sampled data is continuously carried out during operation of the telecommunications device 17, unless a driving incident has been detected, in which case, and as mentioned previously, all data related to the driving incident is stored in a long term protected storage 34b to safeguard it from being overwritten by newer data.

In preferred embodiments, the mobile telecommunications device 17 may be configured with a data recording strategy by the user. This might define the frequency with which sensor data is sampled. In other words, how many measurements are made per unit of time. Furthermore, the recording strategy also defines how data is recorded. In preferred embodiments, sampled sensor data is stored in data files in the buffer 34a. Each data file represents a plurality of sequentially sampled sensor data, captured over a defined period of time, which will be referred to as a ‘data file period’. This is best illustrated by considering captured image data, such as video footage. A video period may be defined, which period

defines the unit of physical time covered by captured video footage comprised in a single video data file – this is the data file period for image data. The video data file is subsequently stored in the buffer 34a. For example, a five minute video period setting, instructs the processor 33 to store all sequentially captured image data captured by the image capture module 21 over a period of five minutes, in a separate video data file. It is to be understood that whilst the image capture module 21 is continuously sampling image data (in other words, it is continuously capturing image data), this plurality of captured image data is grouped together for storage in video data files, each data file representing a five minute data file period.

Sampled sensor data and derived driving information is also continuously analysed by the processor module 33 for the purposes of detecting a driving incident. As soon as a driving incident is identified, the associated sensor data and derived driving information is stored in a data file in accordance with the data recording strategy. Returning to the example described in the preceding paragraph, this entails combining the video footage captured within a temporal window of five minutes leading up to the detected driving incident, in a single video file, and storing this data file in protected storage 34b. Whilst each different type of sensor data may be recorded in separate data files, in preferred embodiments all the different types of sensor data sampled by the mobile telecommunications device 17 are stored together in a single data file in accordance with the user selected data recording strategy. This means that the five minute data file referred to above, preferably also comprises GPS data, accelerometer data, and audio data sampled over the five minute time period.

Data files are stored in the buffer 34a, unless they are associated with a driving incident, in which case they are then stored in protected storage 34b, which cannot be overwritten. Once the storage space comprised in the buffer 34a has been exhausted, the oldest data file is overwritten by a newer data file.

Data compression methods may also be used in conjunction with the present invention to improve the use of storage. For example, data comprised in data files which have not been associated with a driving incident may be compressed using compression techniques, which techniques will be known to the skilled reader. Similarly, within a data file associated with a driving incident, sensor data captured at time coordinates which are distant from the determined driving incident may be compressed. In this way, the resolution of

sensor data which is directly pertinent to a driving incident is maintained, whilst sensor data which may be less relevant to the driving incident is maintained at a lower resolution.

Since the sensors of the mobile telecommunications device 17 are continuously recording sensor data, even when a driving incident is detected, the device 17 may be configured to comprise sensor data and/or driving information recorded/derived shortly after the driving incident in the same data file, since this data may also be relevant for understanding a driving incident. Furthermore, this also enables the mobile telecommunications device to record multiple driving incidents. For example, a multiple collision.

The processor module 33 may be configured with encryption means, enabling stored data files to be encrypted to prevent data tampering. Envisaged encryption means may comprise both software solutions and hardware solutions. For example the processor module may comprise a cryptoprocessor, or the processor may be configured with code to carry out a cryptographic process.

Figure 4a is a flow chart outlining the method carried out by the mobile telecommunications device 17, to determine if a driving incident has occurred, in accordance with a preferred embodiment. An application is downloaded from the content provider server 9 of Figure 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be done over a telecommunications network. The application provides the mobile telecommunications device 17 with the previously described functionality, when executed on the device. The mobile telecommunications device is configured within the vehicle, at step 38. This may comprise affixing the mobile telecommunications device 17 to the vehicle via an adapter, as described previously.

The recording strategy is specified at step 40. As mentioned previously, this comprises setting the period of time that each recorded data file represents. Furthermore, it may also comprise defining the size of the buffer 34a and/or the number of data files that are to be stored within the buffer. Preferably, the recording strategy is specified only once, upon first use of the mobile telecommunications device 17. Where the recording strategy has already been defined, method step 40 is skipped, and the method continues with step 42.

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. The start of a driving period

may be manually entered by the user via the application's graphical user interface (GUI). Alternatively, the start of the driving period may be automated. 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 kilometres per hour is detected.

Alternatively, the start of the driving period may be initiated once the application determines that the mobile telecommunications device 17 has been affixed to the vehicle. For example, the adapter 21 may comprise a registration module (not shown) arranged to register the installation and fixation of the mobile device to the vehicle and/or adapter. The registration module may comprise an NFC device. When the mobile device is brought into close proximity with the registration module, a driving period is initiated.

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. The sampled sensor data and the driving information is continuously analysed by the processor module 33, at step 46.

The processor module 33 determines if a driving incident has been detected, at step 48. This is determined on the basis of the analysis carried out at step 46. If a driving incident has been detected, all the sensor data and driving information associated with the data file period, is stored in a data file in protected storage 34b, at step 50.

There are several ways in which a driving incident may be detected. Preferably, this is an automated process, wherein the processor module 33 determines a driving incident has occurred on the basis of an observed marked variation in sensor data and/or driving information. The term 'marked variation' is to be understood to relate to a significant change in sensor data and/or driving information occurring over a very short time period. In other words, a detected impulse in recorded sensor data and/or driving information, indicative of a significant change in the state of motion of the vehicle occurring over a short time period. For example, a sudden increase in the g-forces the vehicle is subjected to, may be indicative of a collision and if observed, result in a driving incident being determined to have occurred by the processor module 33.

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. When any one of these threshold values is exceeded, the processor module 33 may be configured to determine that a driving incident has occurred. Similarly, the automated detection of a driving incident may require that a threshold condition associated with a combination of predefined threshold values, each threshold value being associated with a different data type and/or type of driving information, must be exceeded, in order for the processor module 33 to automatically determine that a driving incident has occurred. For example, in the event of a collision, it is reasonable to expect to observe a marked variation in g-force, accompanied by a marked variation in velocity. Accordingly, the threshold condition may require that in order for a collision to be automatically detected, both a marked variation in g-force and a marked variation in speed, in excess of predefined threshold values must be observed.

Similarly, the occurrence of a driving incident may also be recorded manually by the user via the application GUI. This may be beneficial for the purposes of documenting data associated with a low velocity collision - colloquially referred to as a 'fender-bender' - which may not result in any marked variations in sampled sensor data, and therefore may not be automatically detected.

Once a driving incident, such as a collision, has been detected, and the data file comprising the associated sensor data and driving information has been securely stored in protected storage 34b, the data file is transmitted to the insurance server 5 of Figure 1, at step 52. The data file informs the insurance provider that a driving incident has occurred and provides the insurance provider with the sensor data and derived driving information. This data assists the insurance provider in better understanding the collision, in addition to assisting with determining culpability, where more than one vehicle are involved.

Similarly, 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. The S.O.S. message may also comprise sensor data and derived driving information, which may assist the emergency services in coordinating their response.

As mentioned previously, the mobile telecommunications device 17 will continue to sample and record sensor data even once a driving incident has been detected, unless the mobile telecommunications device 17 detects that the driving period has terminated, at step 56. If the driving period has terminated, the present method is terminated and the device

stops recording sensor data. The end of a driving period may be automatically detected by the processor module 33, if certain conditions are met. For example, if the measured velocity of the vehicle remains zero for a predetermined period of time, the processor module 33 may infer that the vehicle is stationary and no longer being driven, and accordingly ceases recording sensor data, and the method is terminated. If instead the processor determines that the driving period has not yet terminated, a new data file period is initiated, at step 58, and steps 44 through 62 are repeated.

Where a driving incident is not detected at step 48, the processor module 33 will determine if the data file period has expired, at step 60. If the data file period has expired, then the sensor data and the derived driving information generated during the data file period is combined and stored in a single data file, for storage in the buffer 34b, at step 62. The processor 3 then determines, at step 56, if the driving period has terminated. If the driving period has not terminated, a new data file period is initiated, at step 58. The mobile telecommunications device 17 continues to sample sensor data, to derive driving information, and steps 44 through 62 are repeated, until the driving period is determined to have terminated.

Figure 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of Figure 4a) in a preferred embodiment, where the mobile telecommunications device 17 is configured to sample audio data, accelerometer data, and GPS data only. Each one of these types of data is analysed in turn, at steps 64, 66 and 68. The analysis may comprise comparing measured sensor data and/or derived driving information with a data model. The model may comprise defined threshold values for different data types. Sampled sensor data and/or driving information may be compared with the data model to determine if a driving incident has occurred.

For example, the analysis of sampled audio data, at step 64, may comprise comparing the recorded audio data with predetermined audio data models representing specific sounds. 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. Effectively, this may be considered audio fingerprinting, which serves to identify specific sounds associated with a driving incident by carrying out a signal profile analyses of the audio signal captured by the

audio capture module 27. To achieve this, the storage device 34 may comprise a database of prestored audio sound files. The audio sound files represent sounds associated with a driving incident. The captured audio signal is compared with the sound files comprised in the database, to identify matches between the captured audio signal and the database of sound files. This facilitates the audio fingerprinting of specific sounds, indicative of a driving incident, present within the captured audio data signal captured by the audio capture module 27.

Similarly, the analysis of sampled accelerometer data, at step 66, may comprise comparing the sampled data with predetermined accelerometer data models. 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. For example, a measured yaw value above a predetermined threshold value may be indicative of the vehicle having lost traction and is fishtailing and/or skidding. Similarly, a roll and/or pitch value above a predetermined threshold value may be indicative of the vehicle having overturned.

Accelerometer sensor data is also used for deriving driving information such as g-forces. Analysis of g-force data is also used to determine if a driving incident has occurred. For example, approximate g-force values for detecting certain driving incidents are as follows:

- Harsh braking – a deceleration of greater than 2.5 m/s^2 or forward G-force of greater than 0.7G for more than 400msec.
- Harsh acceleration – from stationary, an acceleration greater than 2.5 m/s^2 or backward G-force of greater than 0.7G for more than 800msec.
- Harsh swerving - lateral G-forces greater than 0.7G for more than 400msec.

The data models are preferably preconfigured and are comprised within the application executed on the mobile telecommunications device. Different data models are used depending on the type of vehicle the telecommunications device is being used with. Different vehicle types will experience different states of motion during regular operation, which must be considered in determining if a driving incident has occurred. For example, a motorcycle will display more roll and/or pitch than an automobile during regular operation. Accordingly, different data models and/or threshold values must be used to automate the

identification of a driving incident for different vehicle types. The specific data models used may be selected during an initial configuration of the mobile telecommunications device, by indicating the type of vehicle the device is being used with.

On 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. If it is determined that a driving incident has occurred, then the telecommunications device proceeds with step 50 of Figure 4a. If instead a driving incident is not detected, the telecommunications device proceeds with step 60 of Figure 4a.

The GPS data analysis, at step 68, comprises analysing positional data and velocity data for any anomalous readings. For example, a sudden deceleration followed by a zero-velocity reading lasting a predetermined period of time, may be indicative of a collision. If such a zero-velocity reading is observed at step 70, in conjunction with anomalous audio and/or accelerometer sensor at step 72, then a driving incident is determined and the mobile telecommunications device proceeds with step 50 of Figure 4a. This is a further example of a threshold condition, discussed previously.

The previously described mobile telecommunications device and method may also be used to monitor and generate a driver profile. The driver profile may be indicative of the type of driver a user is. For example, this may comprise determining if a user is a calm and patient driver, or an aggressive driver. Also, this may comprise determining whether a user regularly flouts speed limits, and/or ignores safety distances. This type of information may be used by an insurance provider to conduct a personalised risk assessment for individual users. Insurance premium rates may then be tailored to the specific user on the basis of the personalised risk assessment.

For example, analysis of captured image data, such as video footage, may be used to determine if a user regularly flouts safety distances. In preferred embodiments, the mobile telecommunications device is arranged within the subject vehicle to have a clear line of sight of the road in the direction of principle motion. Accordingly, the number plate of any vehicle preceding the subject vehicle will be captured by the image capture module. Since the physical dimensions of number plates are standardised and known in each country, they may be used as a metric to scale the captured image. When combined with the known optical characteristics of the image capture module, this enables the distance of the image capture

module from the image object (i.e. the preceding vehicle) to be determined at the time of image capture. This information may then be used to see if a user adheres to recommended safety distances. A user that is observed to regularly flout recommended safety distances, may be considered to represent a greater risk, and accordingly may be required to pay a greater insurance premium than a user who regularly respects recommended safety distances.

Image analysis can also be used to determine driving conditions and the driving environments. For example, image processing can detect road signs, such as stop signs or traffic lights. Furthermore, driving conditions, as affected by the weather can be determined. For example, if the windscreen wipers are detected to be in motion, it can be inferred to be raining. Once the driving conditions are so determined, an assessment of the driving performance of a user can be made by determining whether the user reacts or behaves appropriately to the driving conditions. For example, if the driver is seen to be jumping red lights, or driving dangerously in rain or snow, then a higher risk profile may be assigned to that driver.

Similarly, accelerometer and g-force data may be used to determine if a user has an erratic driving style. For example, a user that generates sharp variations in g-force data and accelerometer data during regular operation of a vehicle, may be considered to drive erratically, and therefore at greater risk of being involved in an accident, and insurance premium rates for the user may be tailored accordingly.

The mobile telecommunications device may also be configured to interface and communicate directly with a vehicles native telemetry systems. For example, the majority of modern cars have inbuilt electronic control systems or engine management systems, arranged to collect data regarding vehicle system performance. This data may be communicated to the mobile telecommunications device either via a wired physical connection, such as USB (Universal Serial Bus), or via a wireless communication protocol such as Bluetooth®. This data may subsequently be used by the mobile telecommunications device to complement sensor data captured directly by the telecommunications device. In this way a more accurate model of a driving incident, and/or of a user profile may be generated. For example, native vehicle telemetric systems may comprise electronic tyre pressure sensors, and are able to detect if a tyre is under and/or over-inflated. This information may be communicated to the

mobile telecommunications device and may help to explain the causes for a driving incident, such as a sudden loss of traction resulting from a burst tyre.

Further features of the Witness application, are set out below.

Benchmarking

It will be appreciated that different sensor types, phones, mounting positions, vehicles, drivers and road conditions may generate differing outputs for driving behaviour that is 'safe'. To account for this, the Witness application may have the following functionality:

- During a 'training mode' (e.g. first week of enabling the Witness application) the input from the sensors are used to build up a 'benchmark' for a particular driver's typical driving conditions.
    - Assuming an accident does not occur during this training mode, the benchmark data can be subsequently used to assess the occurrence of driving incident.
- There is preferably an option to notify the Witness application of a change in parameters (e.g. different driver, driving off-road etc). Thus a number of 'profiles' may be set up. Each profile may require an independent training mode period.
- If the Witness application incorrectly detects that a driving incident has occurred, it can receive feedback from the user to modify its sensitivities. E.g. a more aggressive driver is actually driving.

Crash/Collision Management

- On detection of a crash (or other driving incident) the Witness application is arranged to take one or more of the following actions:
    - Announce that it has detected an accident (audio/screen prompt)
    - Call the emergency services (with option to cancel) – e.g: Audio/screen prompt: 'Witness has detected that you have been involved in a (serious) accident and will call the emergency services. If this is not the case, please cancel within 10 seconds.'

- Provide reassurance
- Provide the user with a checklist of things to do:
  - Take photographs of vehicles involved in the incident (inc number plates)
  - Take down name, address, insurance details etc of 3rd parties involved in incident
- Communicate to the insurance company that an incident has been detected (e.g. low bandwidth data or text message)
- Protect the high quality recorded data so it is not overwritten
- If appropriate – or in response to a request from a communication to the phone from the insurance company – transmit all or selected portions of the recorded data associated with the incident.
  - N.B. Use of the communication channels is controlled by the Witness application to prioritise essential communications such as calls to the emergency services.
- Note that data transmission from the mobile telephone to the insurance company may be automatic (for example, triggered by a detected incident) or manual (for example, in response to a request from the insurance company). In the latter case, the Witness application may include functionality to allow the insurance company to browse through the data files available on the mobile telephone so as to select one or more for transmission to the insurance company.

<u>Data processing for generating a user profile</u>

Further features of the user profile generation embodiment are summarised:

- If the Witness application incorrectly detects an event or incident of significance, and receives feedback that the vehicle was not involved in an accident (but was in a near miss) – this could alter the risk profile of the driver. For example – if this happens frequently, but no accident occurs over a given period, this could be an indicator that the driver is good at reacting to potential hazards.

- Erratic driving (e.g. jerky steering or braking detected by G-force sensor).
- Driving faster than the speed limit allocated to a given road (detected by GPS).

Further details regarding the features and functionality of the Witness application, in particular the graphical user interface of the Witness application, are now described.

Referring to Figure 5, a first page 80 of the Witness application user manual is shown in which an image of the Main Menu (the top-level menu) 82 is displayed. The Main Menu is displayed when a user first runs the application on a smart-phone, such as the iPhone® 4. The main menu includes the following user-selectable buttons:

- **Recording Screen** 84
- **File Management** 86
- **Settings** 88
- **Accident Management** 90
- **Information** 92 (displays up a manual, as shown in Figures 5 to 14).

Selecting the Recording Screen button 84 opens the Recording Screen 94 – the second image shown in Figure 5. The Recording Screen 94 contains a video feed 96 from the camera of the smart-phone, which occupies the majority of the visible screen area. Overlaid on to the video feed is the detected speed of the vehicle 98 (e.g. 0 mph), heading 100 (e.g. south by south-west) and the elapsed recorded time 102 (e.g. 00:00). Displayed in a left column of the Recording Screen are additional user selectable buttons:

- **Keep current video** 104 (pressing this button will automatically copy the current video - and the previous video segment - to the protected storage 34b, and prevents that information from being overwritten. The user is advised to press this button in the event of a driving incident that needs to be recorded).
- **Take photo** 106 (captures a still photograph).
- **Exit Recorder** 108 (returns to main screen).
- **Start / Stop Recording** 110 (starts recording video footage - and other data).

Referring to Figure 6, a second page 112 of the Witness application user manual is shown, in which an image of the Recording Screen 114 is shown and described operating in a map-displaying mode rather than a video-feed mode.

During recording, (i.e. when the 'Start / Stop Recording' button 110 is pressed) the Exit Recorder button in the Recording Screen is substituted with a Map Display button 116. Pressing it will toggle between the modes showing the video feed and a map of the current location.

Referring to Figure 7, a third page 118 of the Witness application user manual is shown, in which the File Management Screen 120 is shown and described. The File Management Screen 120 can be accessed by pressing the File Management Button 86 in the Main Menu.

The File Management Screen 120 displays video and associated data (e.g. telemetry data) that has been previously recorded. The stored data is contained in either a protected area of storage or in a "Recording Stack". Data files in the protected area are saved and so not overwritten as part of a Recording Strategy. In contrast, data files in the Recording Stack may be overwritten as part of the Recording Strategy.

As illustrated in Figure 7, the bottom section of the list represents the "Kept" data files 122, whereas the top section of the list represents the "Recording Stack" 124. "Kept" data files 122 can be edited and deleted from the File Management Screen 120, whereas "Recording Stack" data files cannot. Editing "Kept" data files can involve renaming them.

The recorded data files are listed on screen along with the time and date of the recording and the electronic size of the data file. Accordingly, the user is provided with feedback about how big the data files are, and so if the smart-phone is low in storage, the user can elect to delete certain "Kept" data files. "Recording Stack" data files will be automatically overridden by the Recording Strategy.

The controls on the toolbar at the bottom of the recordings screen allow a user to change the selection mode of the video stack and includes:

- **Video** 126 (when highlighted, if a data file is selected, a video recording playback screen will be displayed).
- **Map** 128 (when highlighted, if a data file is selected, then a map will be displayed showing the area over which the recording was made).

- **Export** 130 (when highlighted, a selected data file will be passed to an Export Screen where export options will be provided).
- **Keep** 132 (when highlighted, if a "Recording Stack" data file is selected, then a user will be prompted to name it, and then it will be stored as a "Kept" data file).

The icons in the File Management Screen change in dependence on the selected mode. For example, Figure 20 shows the icons 134 displayed when the Video selection mode is highlighted; Figure 21 shows the icons 136 displayed when the Map selection mode is highlighted; Figure 22 shows the icons 138 displayed when the Export selection mode is highlighted and Figure 23 shows the icons 140 displayed when the Keep selection mode is highlighted. Advantageously, this provides improved feedback to a user about what selection mode is highlighted and so what action is likely from the selection of a data file.

Referring to Figure 8, a fourth page 142 of the Witness application user manual is shown, in which an image of a Recording Playback screen 144 is shown and described. The Recording Playback screen is invoked by highlighting the Video Mode 126 in the File Management Screen 120 and selecting an appropriate data file.

In the Recording Playback screen 144 it is possible to play back a pre-recorded video feed associated with a chosen data file. As well as playing back the recorded video feed, the Recording Playback screen also displays other associated data such as telemetry data 146. For example, date, time, speed, forward/backward G-forces, latitude, longitude and heading information is overlaid onto the video feed. As the video is played back, these values will typically change depending on the behaviour of the vehicle, as recorded by the mobile device.

Forward and backward G-forces are those that correspond to the forward and backward movement of the vehicle and are the primary metric for determining an event such as a crash. However, other G-forces (e.g. up/down and side-to-side) may also be measured by the device – even if they are not necessarily displayed on the mobile screen.

As recited in Figure 8, the Recording Playback screen provides further user controls in the form of:

- **Playback Position Scrub Bar** 148 (horizontal bar at bottom of screen)
- **Playback Speed Bar** 150 (vertical bar at left side of screen)

- **Pause** 152 (pauses playback)
- **Eject** 154 (return to previous screen)
- **Loop** 156 (plays the data file continuously)

The Playback Position Scrub Bar 148 allows a user to jump to different positions within the recording without necessarily needing to watch all of the recorded footage. Advantageously, this allows a user to more quickly locate a desired item of footage within a given data file. Also, the Playback Speed Bar 150 can be used to speed up or slow down the playback of the data file. This allows a desired item of footage to be found more quickly through sped-up playback, and also allows an item of footage to be more carefully analysed through slowed-down playback. Furthermore, it is possible to zoom in and out of a region of the video file using a 'pinch and zoom' movement as is standard with most multi-touch touch-screen devices.

Referring to Figure 9, a fifth page 158 of the Witness application user manual is shown, in which a different type of Recording Playback screen 160 is shown and described. Specifically, the image represents playback of a pre-recorded data file as can be invoked by highlighting the Map Mode 128 in the File Management Screen 120 and selecting an appropriate data file.

In contrast with the Video Mode playback, this Map Mode playback shows a map of the area 162 where the recording took place. A blue breadcrumb trail 164 is overlaid on to the map showing the extent of movement of the vehicle during the recorded period. A scrub slider 166 is shown, which is user-operable to adjust the time within the recorded period. As the slider is adjusted, a pin 168 moves along the blue breadcrumb 164 to show the position of the vehicle at the time as specified by the slider 166. Tapping the pin 168 displays associated telemetry data 170 at that position and time.

Referring to Figure 10, a sixth page 172 of the Witness application user manual is shown, in which an image of a Video Export Screen 174 is described. The Video Export Screen 174 may be invoked by highlighting the Export button 130 in the File Management Screen 120 and selecting an appropriate data file.

The Video Export Screen 174 allows the quality of the video associated with the selected data file to be adjusted, before that video is exported. Advantageously, this can allow

the user to control the size of the data to be exported. Telemetry data (i.e. sensor data) is also exported, embedded within the video file. Video data can be exported with or without sound, depending on the permissions of the user. Export typically involves copying data files from the mobile device to a local computer (e.g. via a data cable) or a remote server (e.g. via a wireless connection).

Referring to Figure 11, a seventh page 176 of the Witness application user manual is shown, in which an image of the Settings Screen 178 is displayed and described. The Settings Screen 178 allows the operation of the Recording Strategy to be controlled. Specifically, the Settings Screen allows a user to select the number of video segments that the application should store, and the size of those segments (i.e. a data file period). Accordingly, the user is able to set a limit to the storage usage of the Recording Stack (i.e. the size of the buffer 34a) part of the program. The user can also control the storage usage of the Recording Stack through the use of the video quality buttons.

Note that the Witness application may be arranged to calculate the remaining memory available on the smart-phone and suggest the appropriate settings automatically.

The Recording Strategy involves maintaining a user-controlled number of video segments. When a new video recording is initialised – instantiating a new segment – this is written over the oldest video segment. Thus only the most recently recorded videos are maintained in the Recording Stack.

Another setting that can be controlled in the Settings Screen 178 is the G-force threshold at which the Witness application will assume that a crash has taken place. It is expected that different vehicles and driving styles will need different G-force thresholds to be set to ensure a reasonable sensitivity to crash forces whilst also prevent crash detection false positives. It should be noted that although the manual recites "*Raise the sensitivity if you find that crash detection is triggered during normal driving…*" it is the sensitivity *threshold* that is to be raised, and not the sensitivity itself. A slider 180 allows the sensitivity threshold to be set via the touch-sensitive screen.

The Settings Screen 178 also has a button 182 to allow a user to define more settings via a More Settings Screen.

Referring to Figure 12, an eighth page 184 of the Witness application user manual is shown, in which an image of the More Settings Screen 186 is displayed and described. Here,

it is possible for the user to select speed units 188 and also select whether the map should be displayed during recording 190, and at which speed it should be displayed in favour of the video feed. This is a safety feature of the Witness application that hides the video feed during recording when the vehicle is detected as travelling above a predetermined speed. The video feed is replaced by a map of the location of the vehicle – as is typical with in-vehicle GPS devices. Note that although the on-screen video feed is replaced with a map, video recording continues in the background.

In alternatives, the application may be arranged to detect the vehicle speed, and at a particular speed, switch off the screen entirely. It should be understood that the device will continue to record video, telemetry and other information even when the screen is switched off. Entirely switching off the screen of the device is advantageous as it significantly reduces the drain on the battery of the mobile device.

Note that the Witness application is also arranged to interface with the phone to detect low-light conditions and in response change the brightness of the screen to prevent the user/driver being dazzled. This can also save battery life.

The More Settings Screen 186 also includes a Personal Details button 192 which, when pressed invokes a Personal Details Screen.

Referring to Figure 13, a ninth page 194 of the Witness application user manual is shown, in which an image of the Personal Details Screen 196 is displayed and described.

Here, the name 198, vehicle registration number 200, mobile number 202 and email address 204 to be used in an emergency, can be specified by the user. In the event of a detected incident, these details, along with information regarding the detected incident (e.g. time of incident, location and optionally telemetry data) will be emailed to the specified email address automatically. This can ensure that the chosen recipient of that email will be informed immediately about the occurrence and nature of the detected incident.

This Personal Details Screen 196 also allows the user to set whether it is possible for the video stack to be deleted 206. A security PIN protects the changing of this option so that if a first user having the PIN (for example, a parent) can review the driving style and behaviour of a second user not having the PIN (for example, their son or daughter) by reviewing the Recording Stack – as the Recording Stack cannot be deleted by that second

user. As shown in Figure 24, the PIN can be set for the first time by entering it twice into the appropriate PIN fields 208.

Referring to Figure 14, a tenth page 210 of the Witness application user manual is shown, in which images of an Accident Management Screen 212 and Witness Details Screen 214 are displayed and described.

The Accident Management Screen 212 can be invoked by the user selecting the accident management button 90 on the Main Menu , or can be automatically switched to after the Witness application has detected that there has been an incident (e.g. via G-forces exceeding a threshold level). Similarly, data can automatically be permanently stored as "Kept" and/or sent if high G-forces are detected.

As can be seen on the Accident Management Screen 212, there are the following user selectable buttons:

- **Accident Advice / What to do** 214

This option provides guidance as to what to do during an accident – see Figures 15 and 16 for the displayed Accident Advice Screens.

- **Witnesses** 216

This option invokes functionality to allow the collection of information from or about witnesses to an incident. An image of the Witnesses Detail information summary screen 214 is shown in Figure 14. Figure 17 shows the Witness Detail information collection screen 218. Voice notes can also be taken via the microphone of the smart-phone.

- **Photos** 220

This option enables the camera to allow a user to capture images associated with an incident.

- **Drivers** 222

This option invokes functionality to allow collection about the other drivers involved in an incident, such as their vehicle and insurance details. The Drivers Detail information collection screen 224 is shown in Figure 18.

- **Your Details** 226

This option provides a readily available store of the details of the user - as to be provided to other drivers – and can contain name, address and insurance details. The 'Your Details' screen 228 is shown in Figure 19.

Details recorded via the Accident Management Screen 212 are electronically authenticated and feature a time-stamp. In alternatives, this data may be encrypted to ensure the integrity of the stored data.

Furthermore, in alternatives, the exchange of the details of the drivers and witnesses can be conducted, at least in part, via Bluetooth® (for example, between mobile devices) – and/or via email. Relevant information associated with the driver is pre-stored on the Witness application in a format that can be sent readily, via a communication channel such as Bluetooth® or email.

Finally, note that in each Screen or Menu, there is a button 230 provided to go back to the previous menu. Also, when certain actions are performed or selected by a user, the Witness application is arranged to provide an audible feedback signal (for example, a beep). For example, this could be in response to starting a recording, keeping a video segment and/or a stopped recording.

Alternatives and extensions

The Witness application can be extended to interface with remote users to allow them to control the operation of the application as well as view information logged by the application.

In particular, the present application can be extended to a scenario where the Witness application is under the control of an insurance company. Such an insurance company may provide insurance to the user, and so may have an interest in the behaviour of that user, and moreover, a vehicle under the control of that user, as described previously.

In such a scenario, the insurance company will maintain a device monitoring system that can interface with a mobile device running the Witness application. In fact, the device monitoring system may interface with a large number of mobile devices, each running an individual copy of the Witness application, logging respective user/vehicle behaviours. This could the insurance provider server 5 of Figure 1.

With such a monitoring system, it is unpractical to actively monitor each and every mobile device and receiving and handling the sheer quantity of data from each and every device would also be very difficult.

Consequently, the device monitoring system and the mobile devices are advantageously arranged to automatically and intelligently interface with one another in a way that minimises the computational and bandwidth burden on the device monitoring system.

In particular, each mobile device running the Witness application is arranged to make a determination as to whether there is a need to transfer data to the device monitoring system. For example, the Witness application may be arranged to automatically send data to the device monitoring system that only has high G-force activity associated with it, as this may be indicative of a crash or another driving incident. Alternatively, the Witness application may be arranged to send detailed or high-bandwidth information if a user indicates that an accident has occurred.

In either case, the video segments and associated sensor and/or derived driving information data associated with the relevant event will be sent. However, no other data (for example, from another date) will be sent.

Alternatively, less computationally or bandwidth intensive information may be sent on a periodic basis – for example, every day, week or month. Such general information may be sent to establish a profile of a particular user. For example, many high G-force related activities may indicate that the driver is driving aggressively. A determination about the profile can be made automatically by requesting and automatically analysing further data. For example, the location and speed information can be used to determine whether a vehicle is found to frequently break the speed limit. If this is the case, then the profile of the user can be set accordingly.

Such general and periodically obtained information can also be used to remotely adjust the settings of the application. For example, many high G-force related activities may instead indicate that the set up of the car is such that the mobile device is subjected to high G forces (rather than the driver driving aggressively). If the driving is determined to be safe, but the mobile device is setting off many false positives, then the device monitoring system can automatically adjust the settings of the application. For example, the G-force sensitivity threshold may be increased remotely.

Thus, the initial data that is automatically transmitted from the mobile device to the vehicle monitoring system is limited in bandwidth so as not to overload the vehicle

monitoring system as a whole. However, after processing or analysis is performed on the initial data, further information may be requested. For example, further information may be requested automatically by the system or manually by a controller acting for the insurance company. Such further information may include high resolution video logs and sensor data and derived driving information such as G-force measurements.

It will be understood that the mobile device may also automatically keep certain data at random. Furthermore, the reason for keeping certain data may also be logged (e.g. logged as a result of a manual request by the user, or in response to a high G-force event).

The mobile device and device monitoring system may also be arranged to highlight detected transgressions. For example, driving during curfew hours, or driving at locations where insurance is not valid (e.g. other countries, off-road, race tracks etc).

As will be appreciated, the interaction of the mobile device and the device monitoring system has the advantage of actively improving user driving behaviour. That is, if the user knows that their logged driving behaviour may adversely effect their insurance policy, then it is likely that the user will be dissuaded from driving recklessly. In view of this, an insurance company may be able to incentivise users through lower insurance premiums.

However, so that users do not wrongfully benefit from such incentives, it is necessary to enforce the correct and consistent use of the Witness application.

It would not be beneficial from the perspective of the insurance company if the user could choose when to enable the application. For example, if a user could choose to disable the application when speeding then the effectiveness of the application would be reduced.

Accordingly, the application may include measures to guarantee that the application is enabled whenever a given insured vehicle is being driven.

Such measures may involve matching data recorded by the Witness application with that recorded independently by the vehicle. For example, the Witness application records the distance travelled during every journey. To ensure the summed distances of all journeys tracked by the Witness application tally with the total travelled distance of the vehicle, the user may be prompted to enter the odometer mileage periodically.

If the distance recorded by the Witness application does not correlate with the difference between odometer readings, then the discrepancy will be flagged to the user and/or the insurance company. A substantial discrepancy will typically indicate that the Witness

application has not been monitoring all vehicle journeys and the appropriate action can be taken (e.g. the user can be warned, insurance premium may be raised etc).

It will be appreciated that such a tallying exercise depends on the Witness application being used every time one particular vehicle is driven. However, in alternatives, if the Witness application is used with different vehicles, the Witness application may be arranged to register the different vehicles so that their respective odometer readings can be tallied with distance recordings associated with each respective vehicle.

Other measures can be implemented in conjunction with the Witness application to guarantee that the application is enabled whenever a given vehicle is being driven. For example, the mobile device on which the Witness application is installed may comprise an NFC device, such as an RFID tag. The NFC device may be compatible with a complementary device on a so-called 'smart-holster' into which the mobile device may be fitted during operation.

The smart-holster interacts with the NFC device on the smart-phone to determine whether or not the smart-phone is inserted into the smart-holster. The smart-holster can then be interfaced with the engine management system of the vehicle so that the vehicle may be activated and driven only when the mobile device is in place within the smart-holster.

It will be appreciated that the mobile device has so far been described in the context of a smart-phone. However, it will be appreciated by a person skilled in the art that other devices may also be suitable for performing the functions described in relation to the Witness application. For example, the Witness application may be adapted to run on a general purpose tablet-style computing device, such as an iPad®.

Furthermore, it will be understood that features, advantages and functionality of the different embodiments described herein may be combined where context allows. In addition, a skilled person will appreciated that the functionality described above may be implemented using the mobile device suitably programmed.

Having described several exemplary embodiments of the present invention and the implementation of different functions of the device in detail, it is to be appreciated that the skilled addressee will readily be able to adapt the basic configuration of the device to carry out described functionality without requiring detailed explanation of how this would be achieved. Therefore, in the present specification several functions of the device have been

described in different places without an explanation of the required detailed implementation as this not necessary given the abilities of the skilled addressee to code functionality into the device.

Claims:

1. A mobile telecommunications device configured to log driving information associated with a vehicle, the mobile telecommunications device comprising:

a sensor set comprising an image sensor, an audio sensor, an accelerometer or a positioning module, or a combination thereof;

a user interface;

a processor and;

a memory;

the mobile telecommunications device being configured to:

determine, based on the inputs received by the user interface and sensor data from the device's sensor set, a start of a driving period during which the mobile device is removably attached to the vehicle and the vehicle is in use;

process the sensor data from the sensor set during the driving period to derive driving information associated with how the vehicle is driven; and

store a selection of the driving information to the memory;

wherein the driving information is derived without data from the vehicle sensors, and the mobile telecommunications device is further configured to:

interface with an external device, the external device having access to external driving information associated with a condition of the vehicle; and,

to receive at least a portion of the external driving information from the external device.

2. The mobile telecommunications device according to claim 1, wherein the mobile telecommunications device is controlled by a downloaded application to control the mobile device to detect occurrence of a predetermined event and in response take at least one predetermined action.

3. The mobile telecommunication device according to claim 2, wherein predetermined action is storing driving information associated with that event to the memory.

4. The mobile telecommunication device according to claim 2, wherein predetermined action is storing driving information captured at a higher sampling rate than when an event is not detected.

5. The mobile telecommunication device according to claim 2, wherein predetermined action is transmitting driving information via a wireless telecommunication module of the mobile telecommunication device to a remote system.

6. The mobile telecommunications device according to claim 2, wherein the predetermined action comprises providing feedback to a user to indicate that an event has been detected, the mobile telecommunications device being configured to receive a user interaction to confirm or deny whether the detected event has actually occurred following said feedback.

7. The mobile telecommunications device according to claim 6, wherein the feedback comprises notifying a user that a further action has been scheduled, and will be taken within a predetermined period, the mobile telecommunications device being further configured to receive a user interaction to confirm or deny whether the further scheduled action should be taken within a predetermined period.

8. A mobile telecommunications device according to claim 2, wherein the predetermined action comprises communicating to a remote system that an event has been detected, the mobile telecommunications device being further configured to receive from the remote system a request to transmit to the remote system selected portions of the driving information associated with the detected event.

9. The mobile telecommunications device according to claim 2, wherein the memory comprises:

a long term memory for persistently storing driving information and a short term memory for transiently storing driving information, wherein the short term memory receives driving information at a higher update rate than the long term memory, the mobile telecommunications device being further configured to:

write driving information to the short term memory at a predetermined update rate during the driving period in a predetermined sequence; and,

overwrite the driving information previously written to the short term memory in accordance with the predetermined sequence.

10. The mobile telecommunications device according to claim 9, wherein the mobile telecommunications device is controlled by the downloaded application to control the mobile

device to detect an occurrence of a predetermined event and in response transfer data from the short term memory to the long term memory.

11. The mobile telecommunications device according to claim 2, wherein the mobile telecommunications device is controlled by the downloaded application to control the mobile device to process the driving information to generate a driving score associated with a particular driver.

12. The mobile telecommunications device according to claim 1, wherein the mobile telecommunications device utilizes its own power supply.

13. The mobile telecommunications device according to claim 1, wherein the mobile telecommunications device is a smartphone.

14. A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to manage voice-calls incoming to the mobile telecommunications device during a driving period.

15. A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to enable a hands-free mode of operation on detection of the driving period.

16. A mobile telecommunications device according to claim 15, wherein the hands-free mode of operation comprises enabling voice-activated commands on the mobile device.

17. A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to detect the occurrence of a predetermined event of significance, such as a crash, and in response to store driving information associated with that event to the memory.

18. A mobile telecommunications device according to claim 2, wherein the device is controlled by the downloaded application to detect the occurrence of a predetermined event of significance, such as a crash, and in response to transmit driving information associated with that event via the wireless telecommunication module to a remote data-logging system.

19. A mobile telecommunications device according to claim 2, wherein the at least one predetermined action comprises providing the user with options to control the mobile device to take further actions.

20. A mobile telecommunications device according to claim 1, further arranged to interface with the external device wirelessly.

Abstract

Methods and systems for logging driving information associated with a vehicle when driven are disclosed. In one aspect, a mobile telecommunications device is provided that is adapted for installation to a vehicle and configured to log driving information associated with the vehicle when driven. The mobile device is arranged to register the start of a driving period during which the mobile device is installed to the vehicle and the vehicle is being driven by a driver. The mobile device is also arranged to process sensor data during the driving period to derive driving information associated with how the vehicle is driven. The mobile device is also arranged to store a selection of the driving information to a memory.

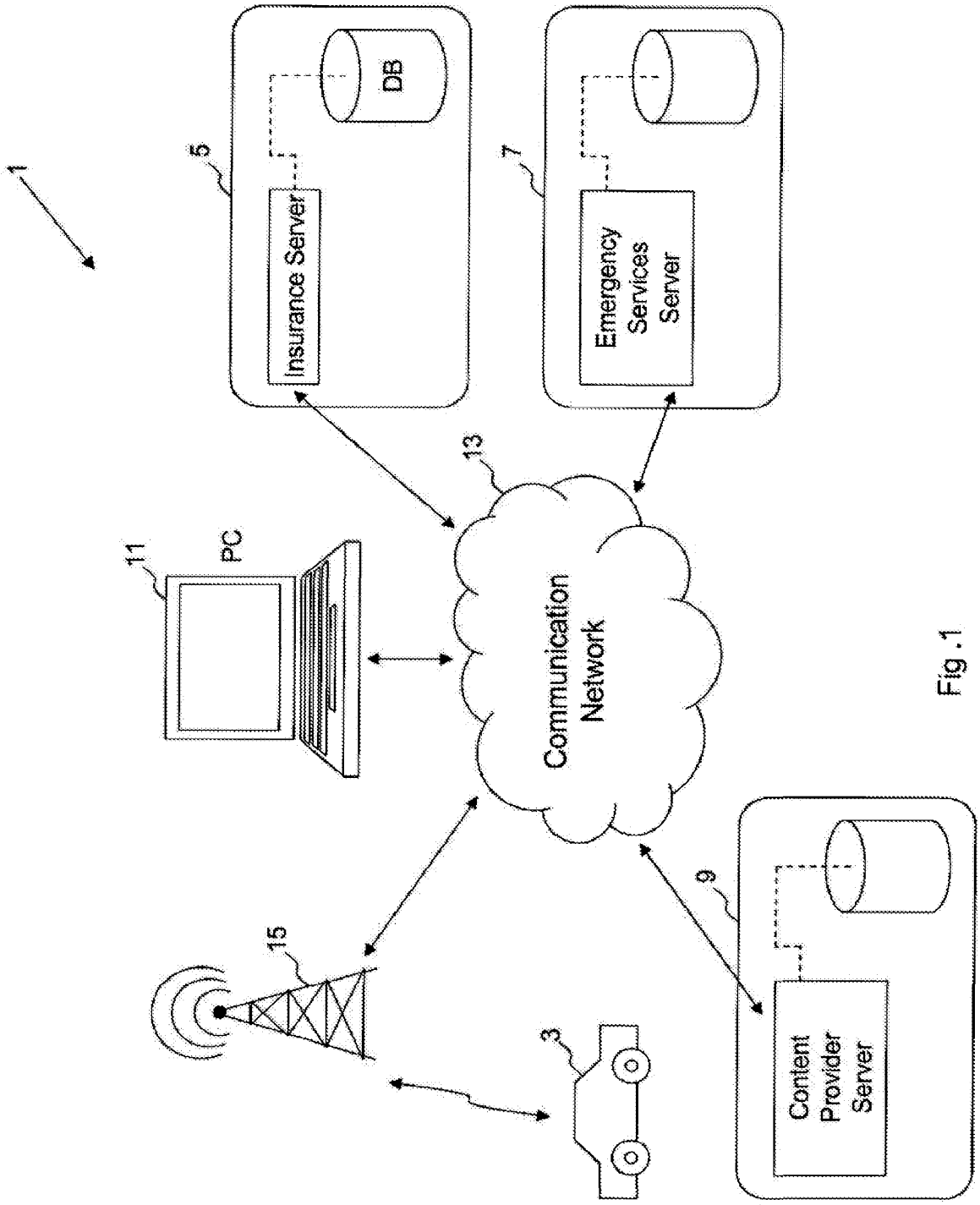

1
5
DB
Insurance Server
7
Emergency Services Server
13
Communication Network
11
PC
9
Content Provider Server
15
3

Fig .1

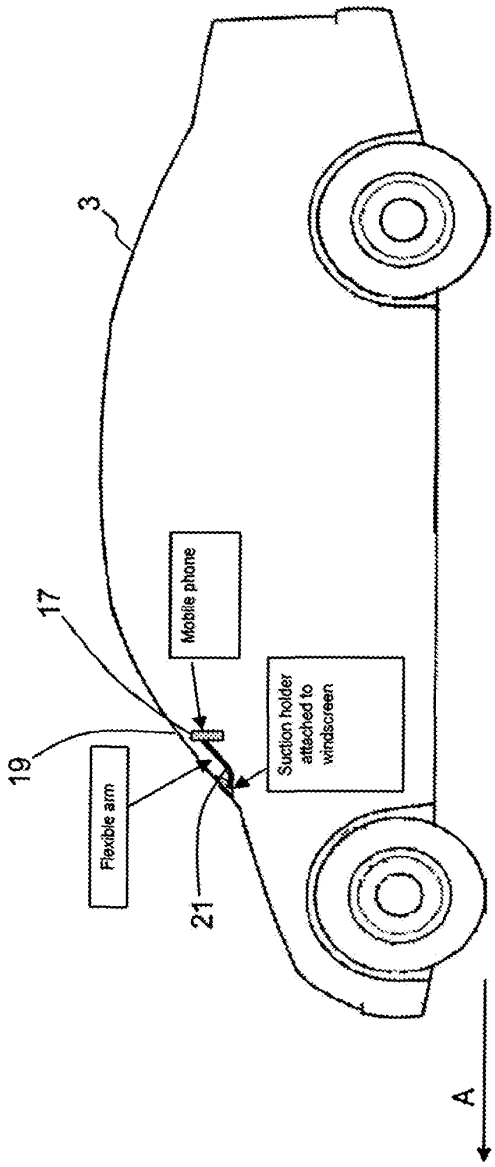

3
17
19
21
Mobile phone
Flexible arm
Suction holder attached to windscreen
A

Fig .2

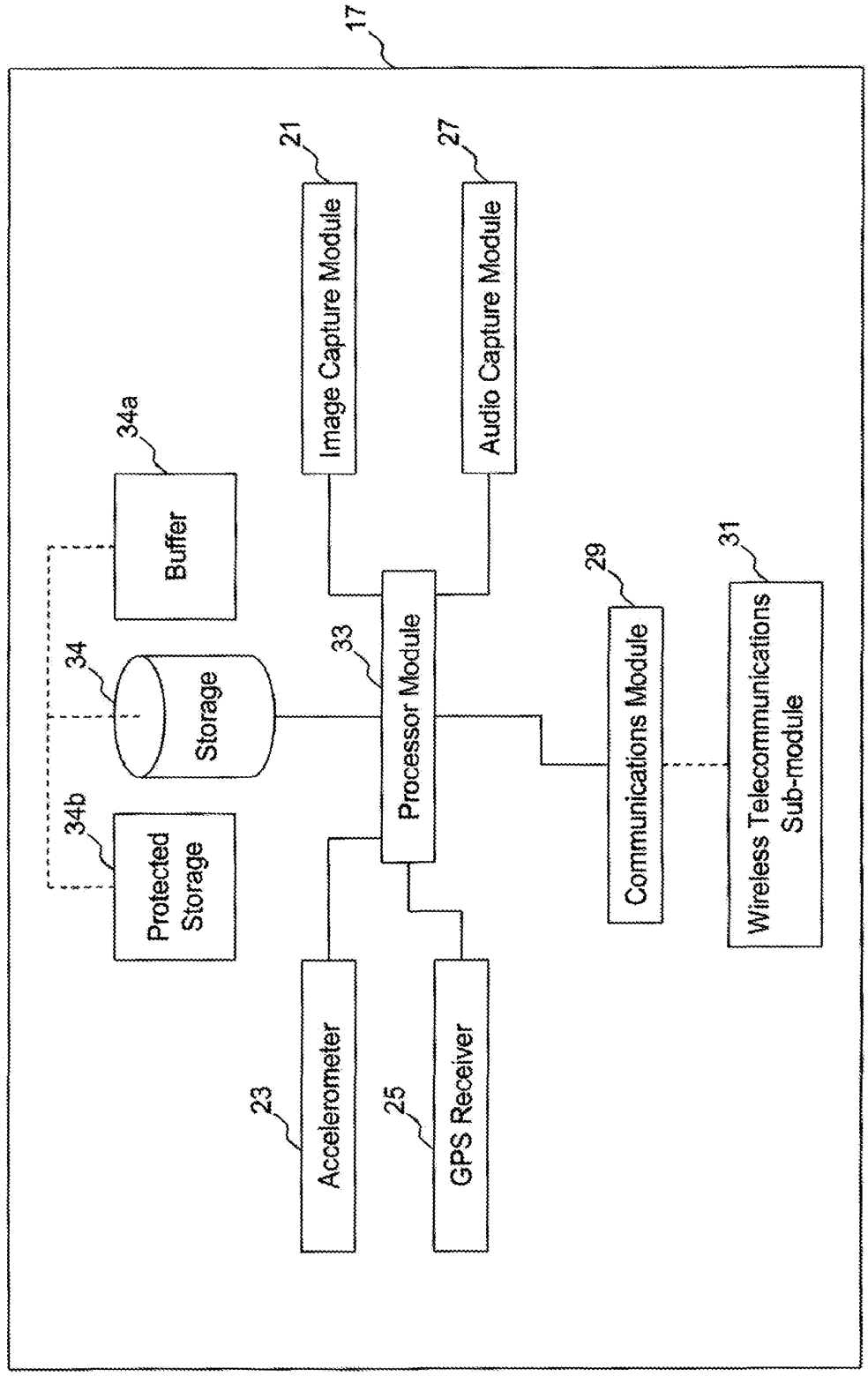

17
21
Image Capture Module
27
Audio Capture Module
34a
Buffer
34
Storage
34b
Protected Storage
33
Processor Module
29
Communications Module
31
Wireless Telecommunications Sub-module
23
Accelerometer
25
GPS Receiver

Fig .3

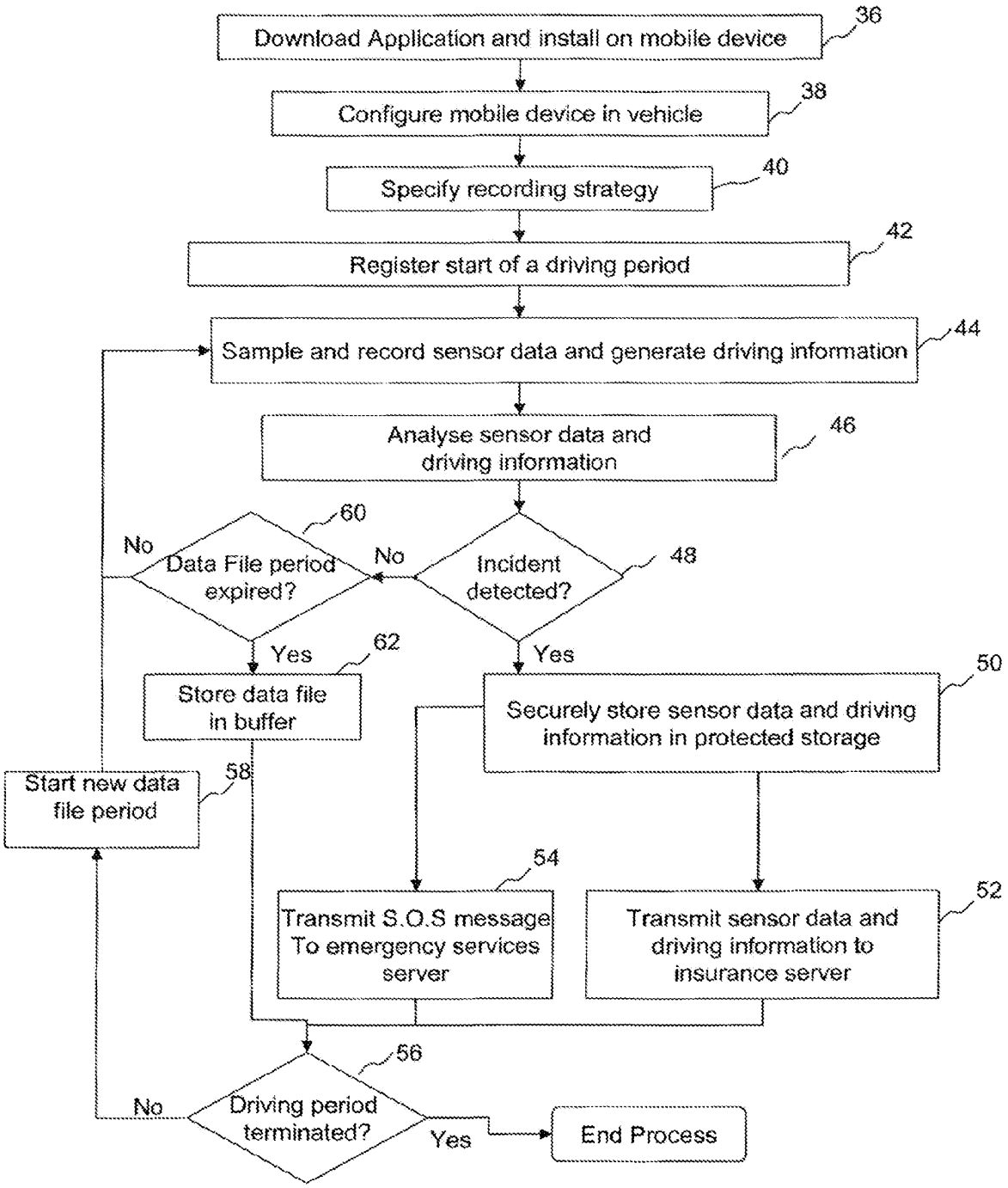

Download Application and install on mobile device
36
Configure mobile device in vehicle
38
Specify recording strategy
40
Register start of a driving period
42
Sample and record sensor data and generate driving information
44
Analyse sensor data and driving information
46
Data File period expired?
60
No
Incident detected?
48
No
Yes
Yes
Store data file in buffer
62
Securely store sensor data and driving information in protected storage
50
Start new data file period
58
Transmit S.O.S message To emergency services server
54
Transmit sensor data and driving information to insurance server
52
Driving period terminated?
56
No
Yes
End Process

Fig. 4a

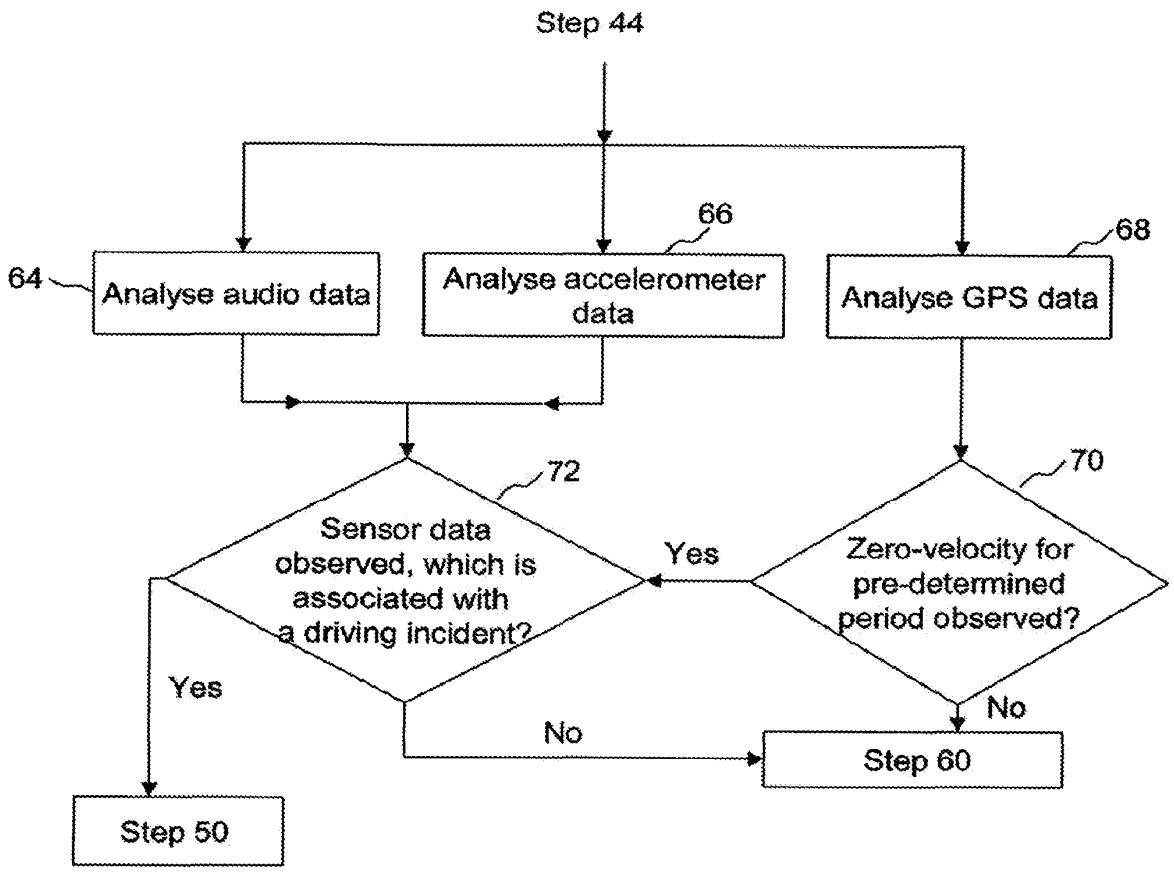

Step 44
64
Analyse audio data
66
Analyse accelerometer data
68
Analyse GPS data
72
Sensor data observed, which is associated with a driving incident?
70
Zero-velocity for pre-determined period observed?
Yes
Yes
No
No
Step 60
Step 50

Fig. 4b

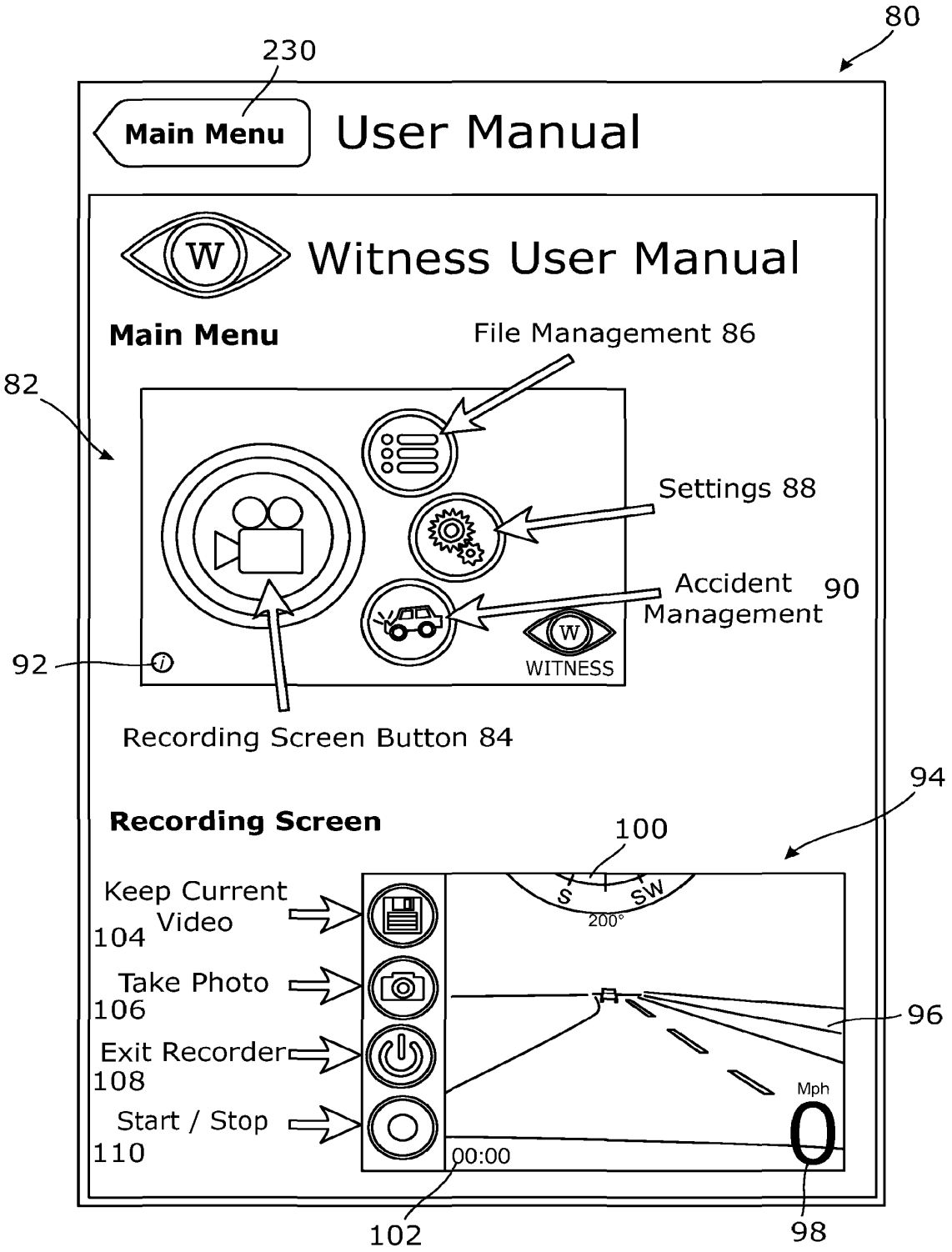

80
230
Main Menu
User Manual
Witness User Manual
Main Menu
File Management 86
82
Settings 88
Accident Management
90
92
WITNESS
Recording Screen Button 84
94
Recording Screen
100
Keep Current Video
104
Take Photo
106
Exit Recorder
108
Start / Stop
110
S
SW
200°
96
Mph
0
00:00
102
98

Fig. 5

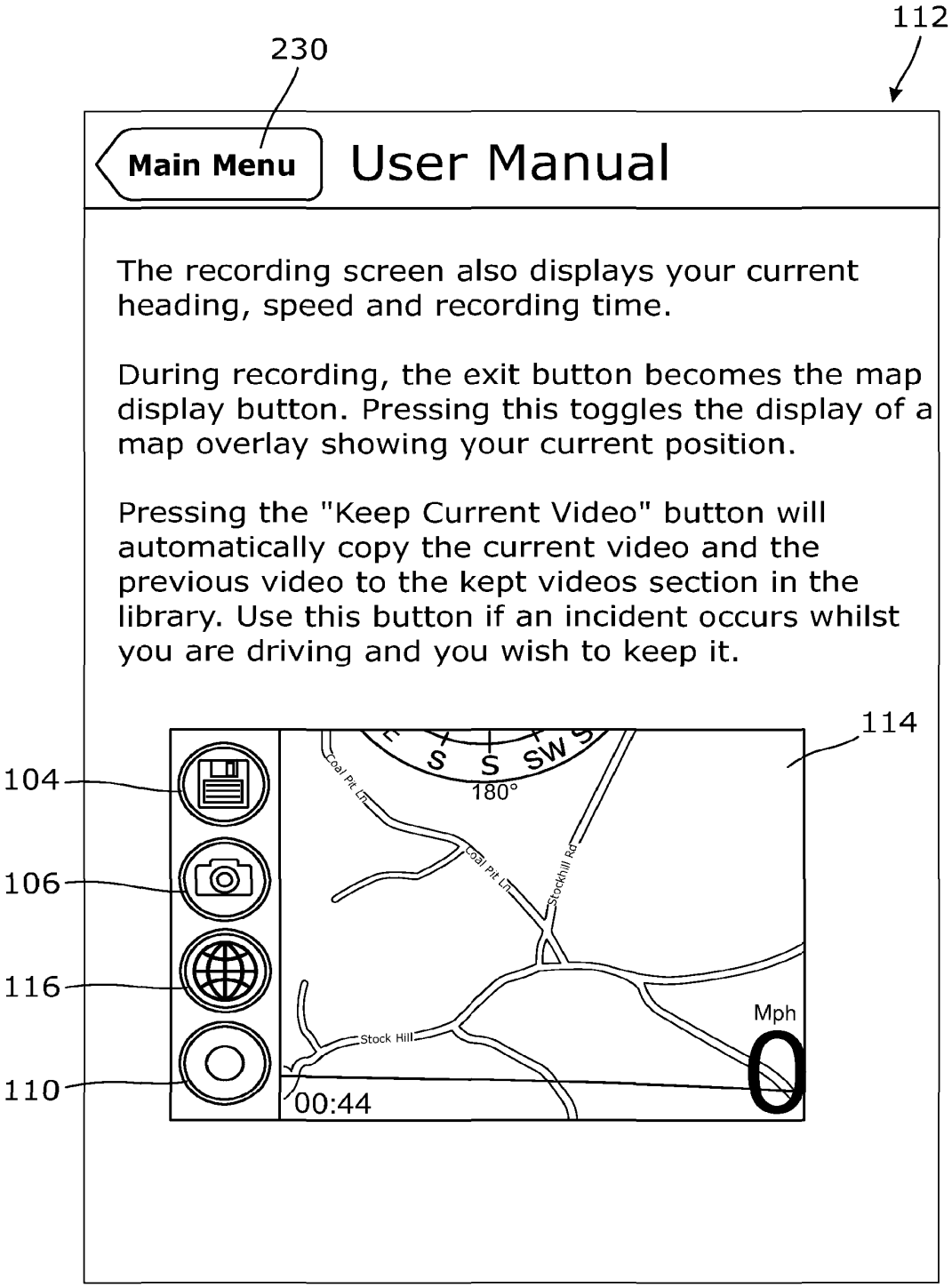

112
230
Main Menu
User Manual
The recording screen also displays your current heading, speed and recording time.
During recording, the exit button becomes the map display button. Pressing this toggles the display of a map overlay showing your current position.
Pressing the "Keep Current Video" button will automatically copy the current video and the previous video to the kept videos section in the library. Use this button if an incident occurs whilst you are driving and you wish to keep it.
114
104
106
116
110
S
S
SW
180°
Coal Pit Ln
Coal Pit Ln
Stockhill Rd
Stock Hill
Mph
0
00:44

Fig. 6

118

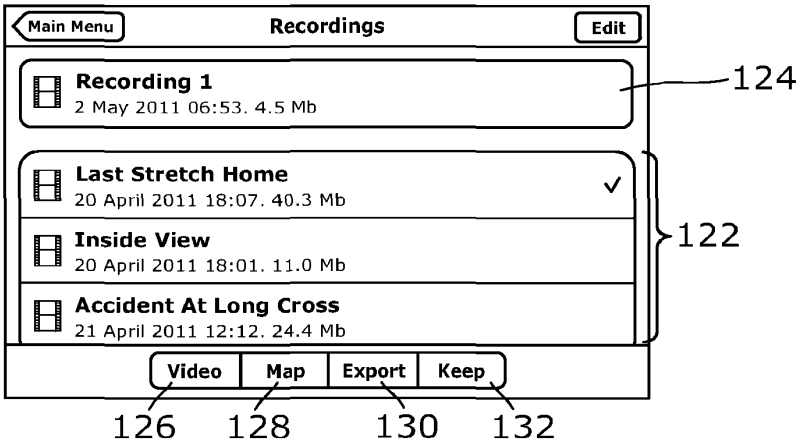
230

Main Menu

User Manual

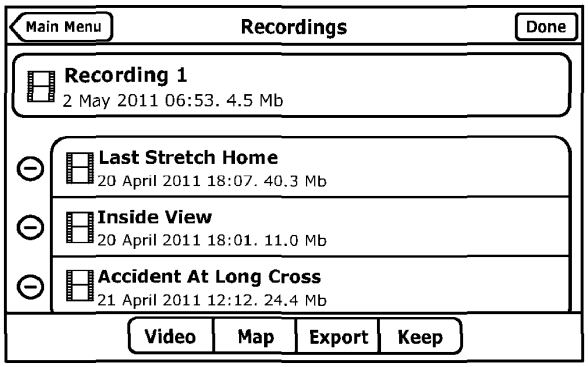
File management

120



The top section of the file management screen contains the recording stack. The recording stack contains your recent video segments, the number of which depends upon your personal settings.

The bottom section contains videos segments that you have chosen to keep.



Your kept recordings can be deleted individually, but the video stack can only be cleared from the setting screen.

Fig. 7

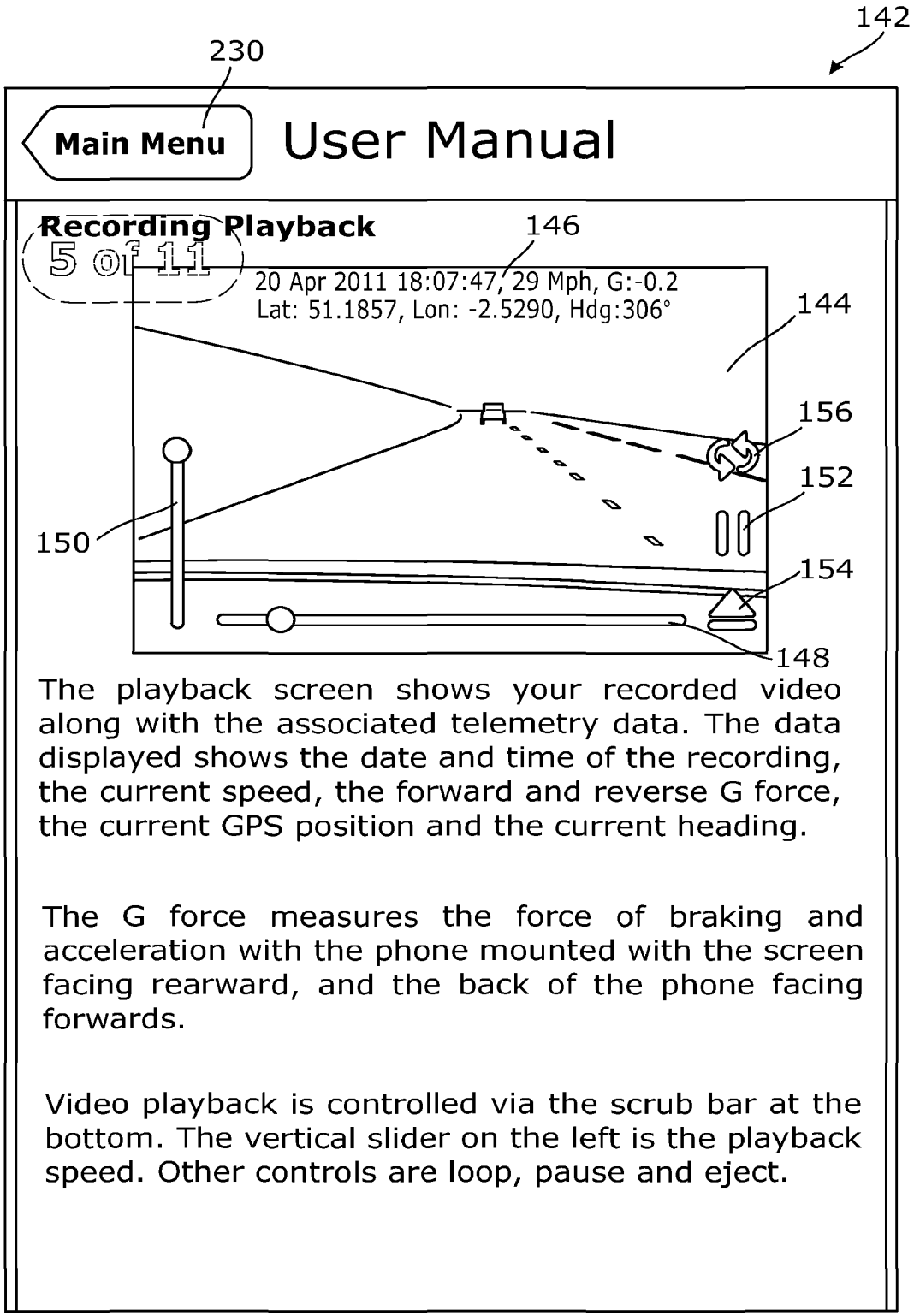

142
230
Main Menu
User Manual
Recording Playback
5 of 11
146
20 Apr 2011 18:07:47, 29 Mph, G:-0.2
Lat: 51.1857, Lon: -2.5290, Hdg:306°
144
156
152
150
154
148
The playback screen shows your recorded video along with the associated telemetry data. The data displayed shows the date and time of the recording, the current speed, the forward and reverse G force, the current GPS position and the current heading.
The G force measures the force of braking and acceleration with the phone mounted with the screen facing rearward, and the back of the phone facing forwards.
Video playback is controlled via the scrub bar at the bottom. The vertical slider on the left is the playback speed. Other controls are loop, pause and eject.

Fig. 8

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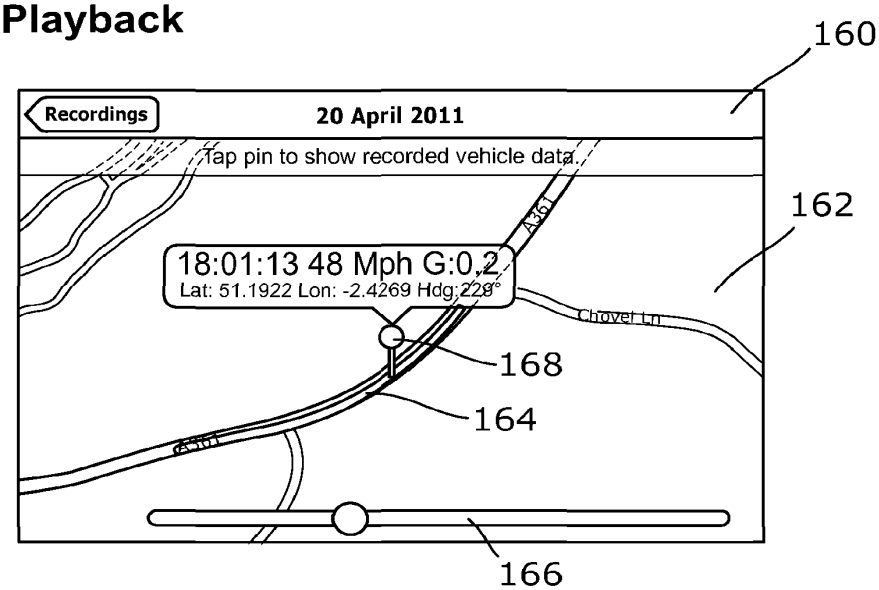
Main Menu

User Manual

Please Note:
The playback video screen is a floating view and can be zoomed by pinching and moved with a single finger. A double tap will reset the view.

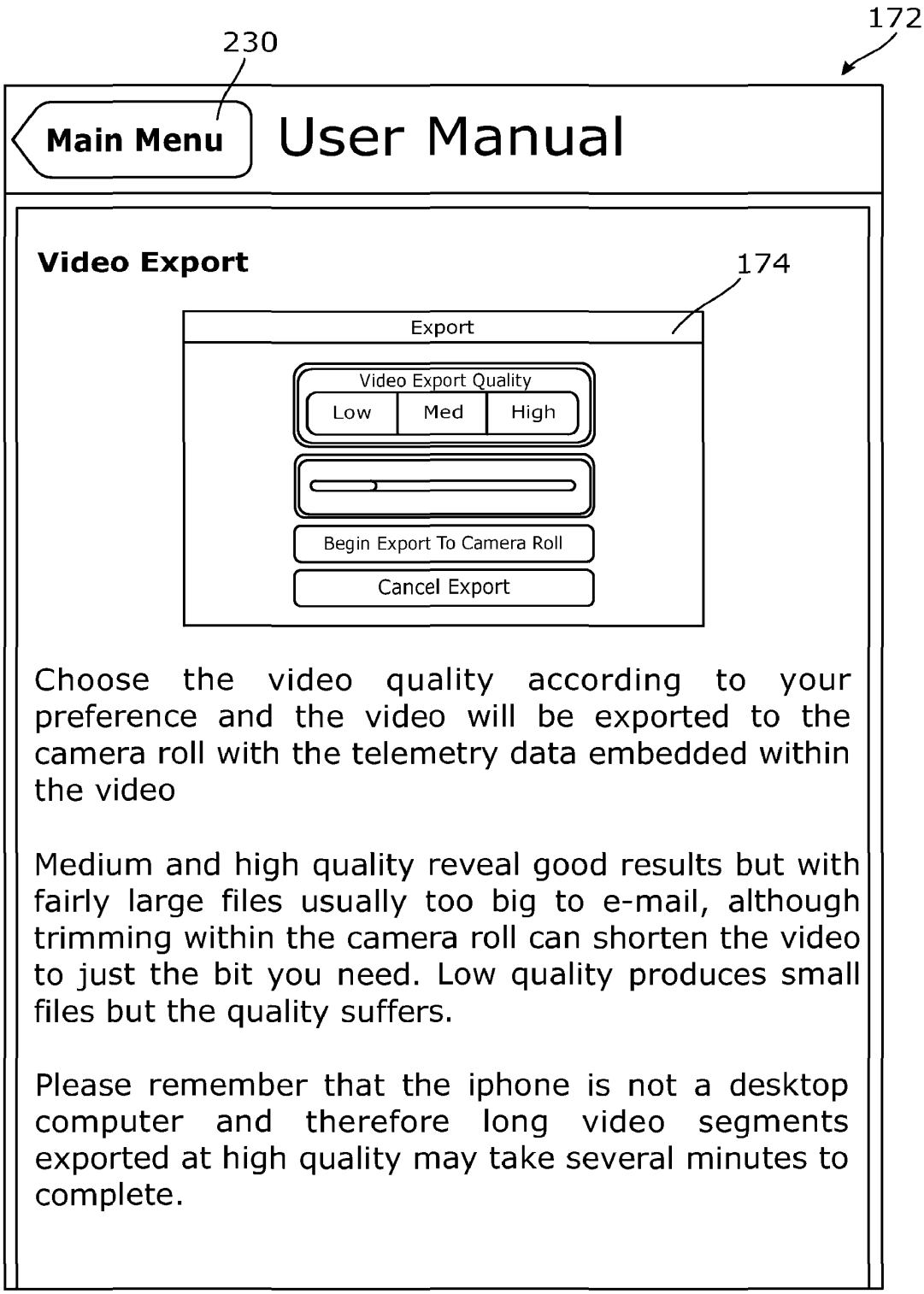
Map Playback



Map playback shows where a recording was made via a blue breadcrumb trail. A pin shows the vehicle position and can be tapped to reveal telemetry data.

The scrub slider will move the pin according to the recorded telemetry.

Fig. 9



Choose the video quality according to your preference and the video will be exported to the camera roll with the telemetry data embedded within the video

Medium and high quality reveal good results but with fairly large files usually too big to e-mail, although trimming within the camera roll can shorten the video to just the bit you need. Low quality produces small files but the quality suffers.

Please remember that the iphone is not a desktop computer and therefore long video segments exported at high quality may take several minutes to complete.

Fig. 10

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Main Menu User Manual

Settings

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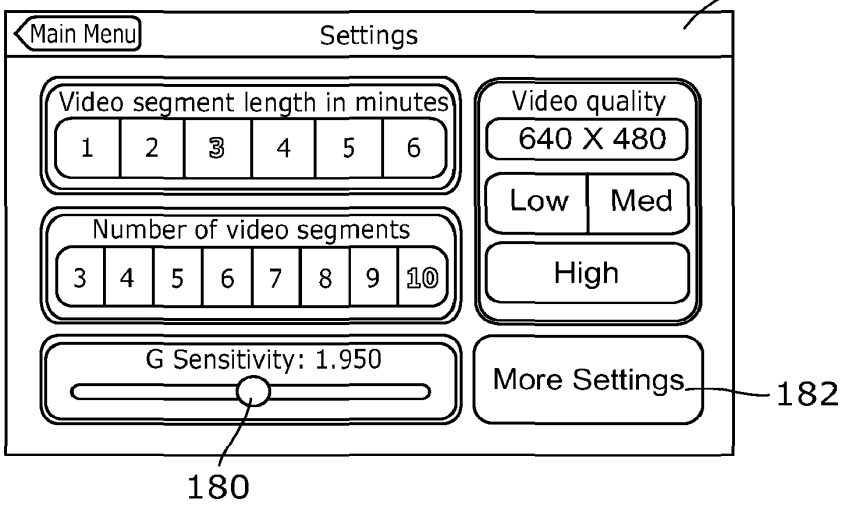


Video recording can be adjusted to allow up to an hour of recorded video in the video stack.

Choose the segment length in minutes and the number of segments you would like according to the available space on your device. Each minute of video at high quality will use 26Mb of space. 1 hour will use 1.5Gb.

G Sensitivity adjusts the automatic triggering of crash detection. Raise the sensitivity if you find that crash detection is triggered during normal driving due to differences in vehicle suspension.

Fig. 11

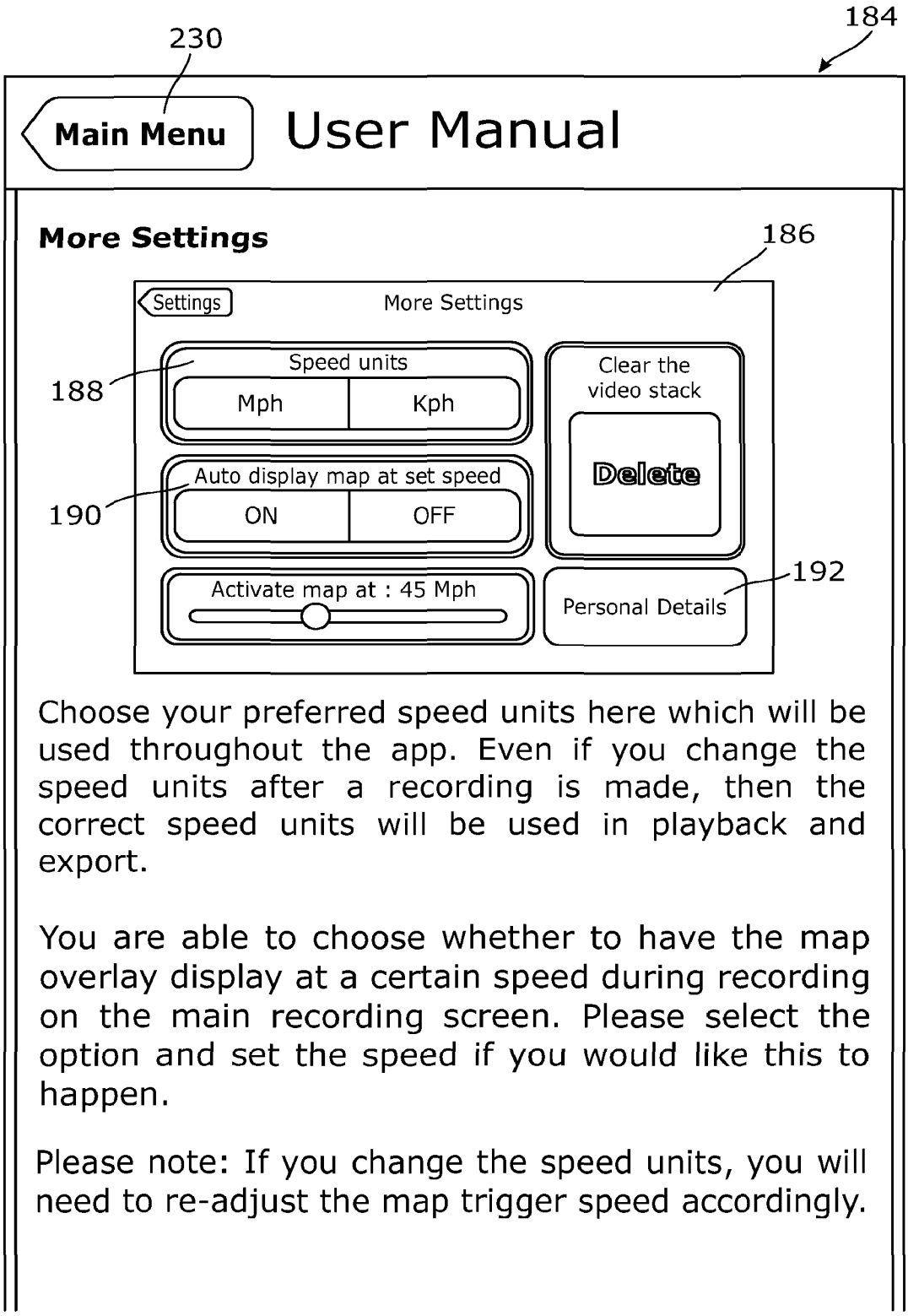

184
230
Main Menu
User Manual
More Settings
186
Settings
More Settings
188
Speed units
Mph
Kph
Clear the video stack
Delete
190
Auto display map at set speed
ON
OFF
192
Activate map at : 45 Mph
Personal Details
Choose your preferred speed units here which will be used throughout the app. Even if you change the speed units after a recording is made, then the correct speed units will be used in playback and export.
You are able to choose whether to have the map overlay display at a certain speed during recording on the main recording screen. Please select the option and set the speed if you would like this to happen.
Please note: If you change the speed units, you will need to re-adjust the map trigger speed accordingly.

Fig. 12

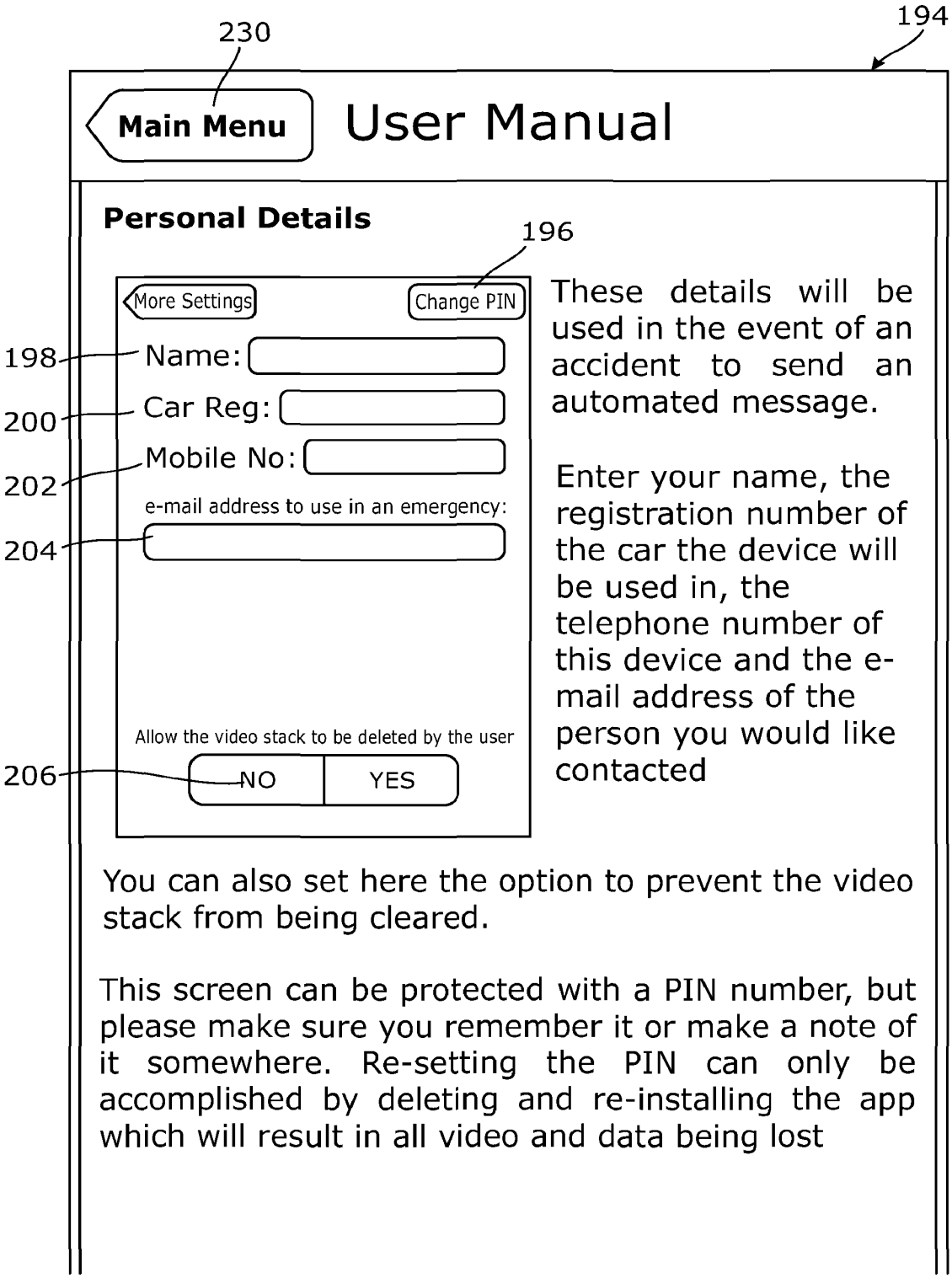

230
194
Main Menu
User Manual
Personal Details
196
More Settings
Change PIN
198
Name:
200
Car Reg:
202
Mobile No:
e-mail address to use in an emergency:
204
Allow the video stack to be deleted by the user
206
NO
YES
These details will be used in the event of an accident to send an automated message.
Enter your name, the registration number of the car the device will be used in, the telephone number of this device and the e-mail address of the person you would like contacted
You can also set here the option to prevent the video stack from being cleared.
This screen can be protected with a PIN number, but please make sure you remember it or make a note of it somewhere. Re-setting the PIN can only be accomplished by deleting and re-installing the app which will result in all video and data being lost

Fig. 13

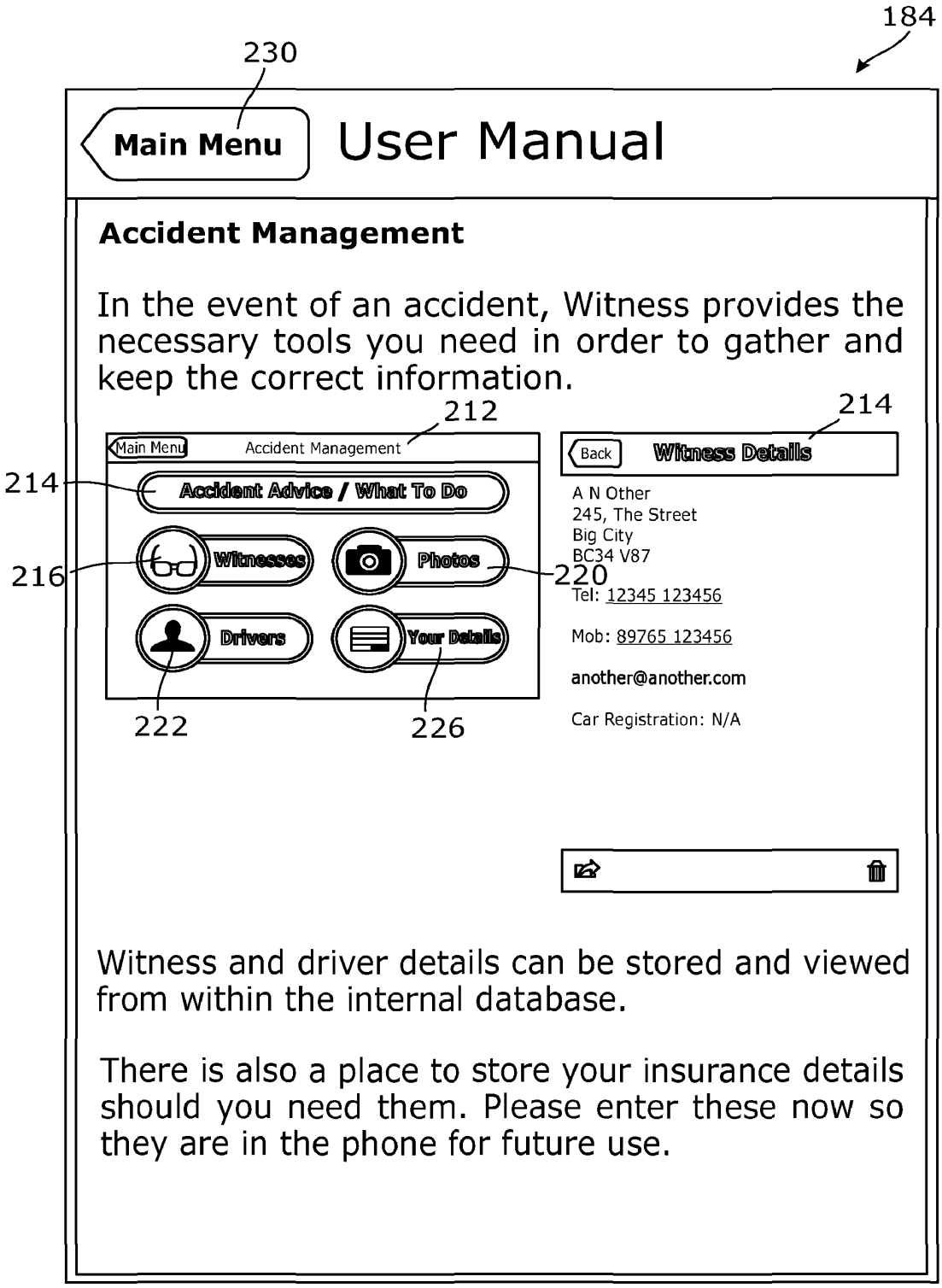

184
230
Main Menu
User Manual
Accident Management
In the event of an accident, Witness provides the necessary tools you need in order to gather and keep the correct information.
212
214
Main Menu
Accident Management
Accident Advice / What To Do
Witnesses
Photos
Drivers
Your Details
216
220
222
226
Back
Witness Details
A N Other
245, The Street
Big City
BC34 V87
Tel: 12345 123456
Mob: 89765 123456
another@another.com
Car Registration: N/A
Witness and driver details can be stored and viewed from within the internal database.
There is also a place to store your insurance details should you need them. Please enter these now so they are in the phone for future use.

Fig. 14

230

Accident Management

What should you do?

Make sure you and others are safe

* Is anyone injured?
* Is the accident causing a hazard?
* Has someone left the scene?

If yes to any of these, then call the emergency services

1. Witnesses - Collect the names and addresses of any witnesses.

2. Photographs - Take pictures of the scene of the accident, damage to cars and other property, and the occupants of the other vehicle.

3. Drivers - Collect names, addresses, registration numbers and insurance details of all other drivers involved.

Fig. 15

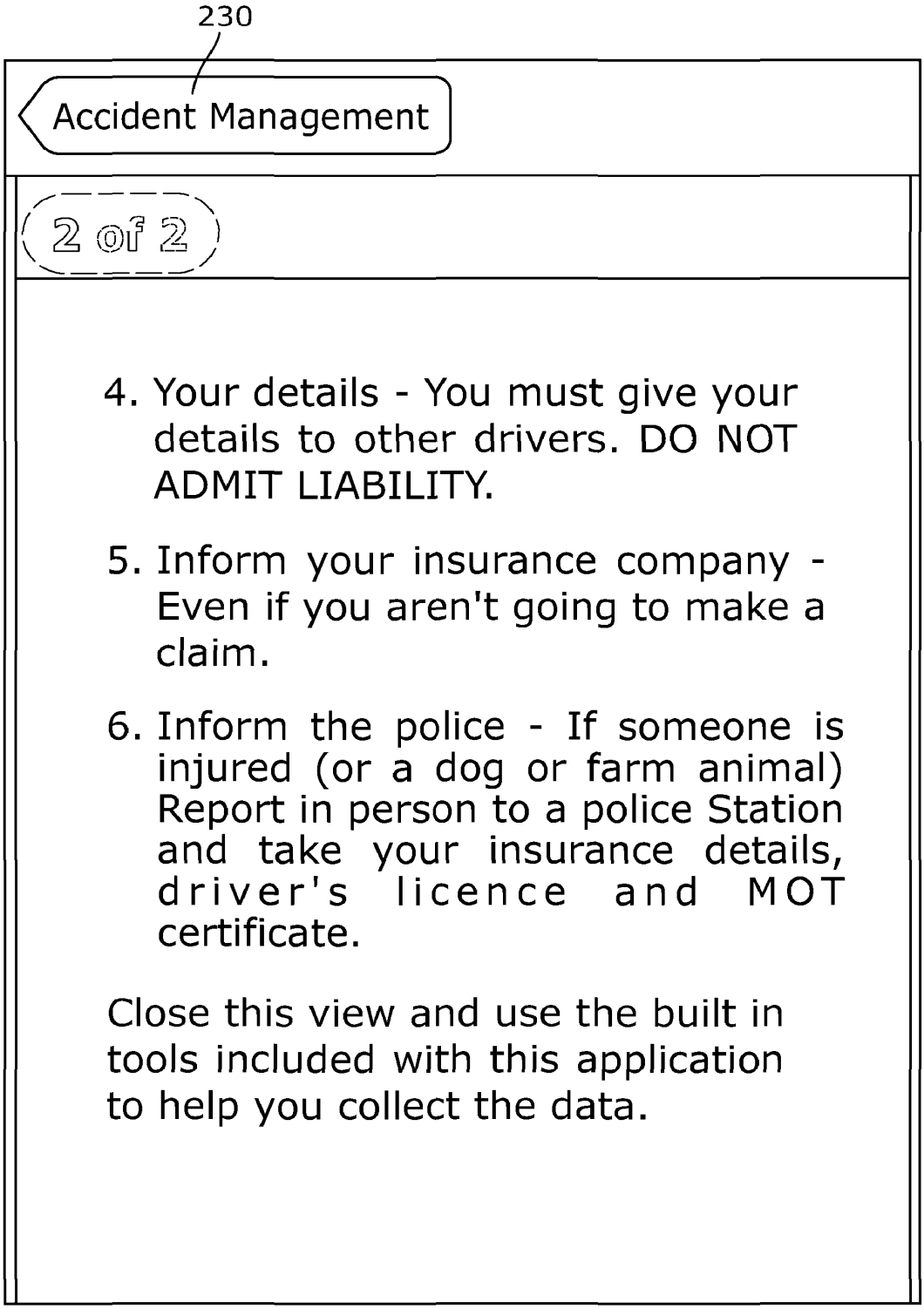

230
Accident Management
2 of 2
4. Your details - You must give your details to other drivers. DO NOT ADMIT LIABILITY.
5. Inform your insurance company - Even if you aren't going to make a claim.
6. Inform the police - If someone is injured (or a dog or farm animal) Report in person to a police Station and take your insurance details, driver's licence and MOT certificate.
Close this view and use the built in tools included with this application to help you collect the data.

Fig. 16

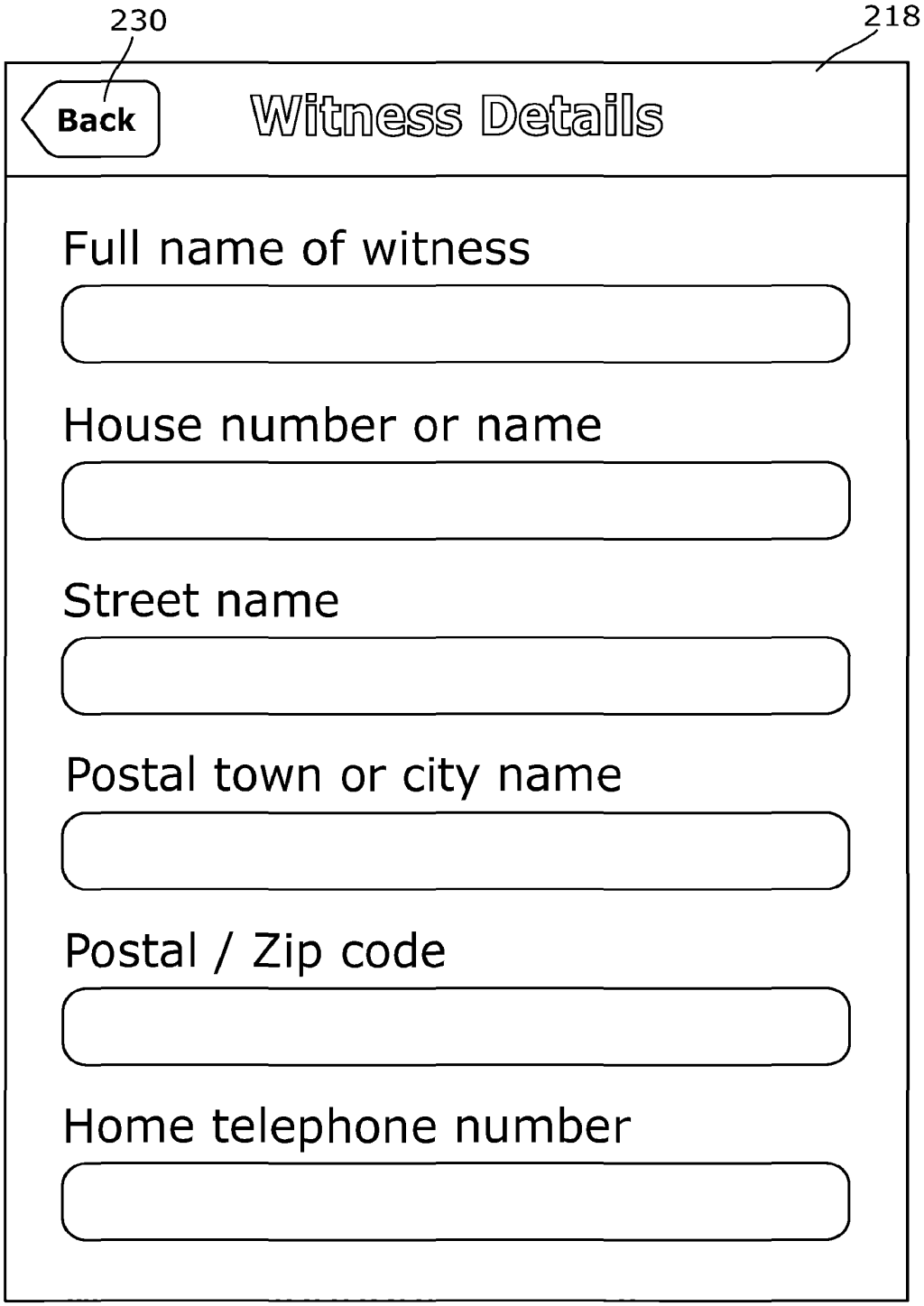

230
218
Back
Witness Details
Full name of witness
House number or name
Street name
Postal town or city name
Postal / Zip code
Home telephone number

Fig. 17

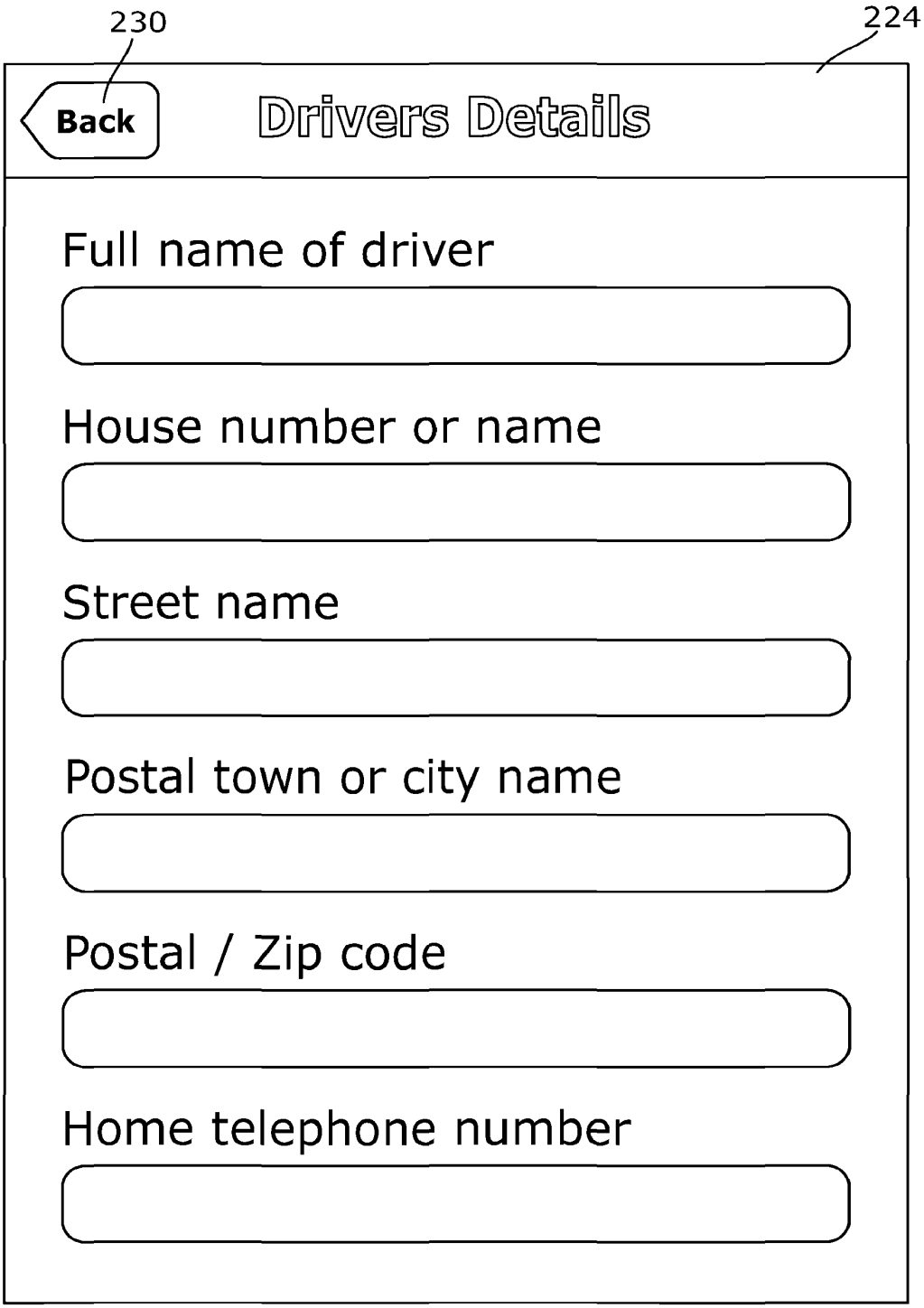

230
224
Back
Drivers Details
Full name of driver
House number or name
Street name
Postal town or city name
Postal / Zip code
Home telephone number

Fig. 18

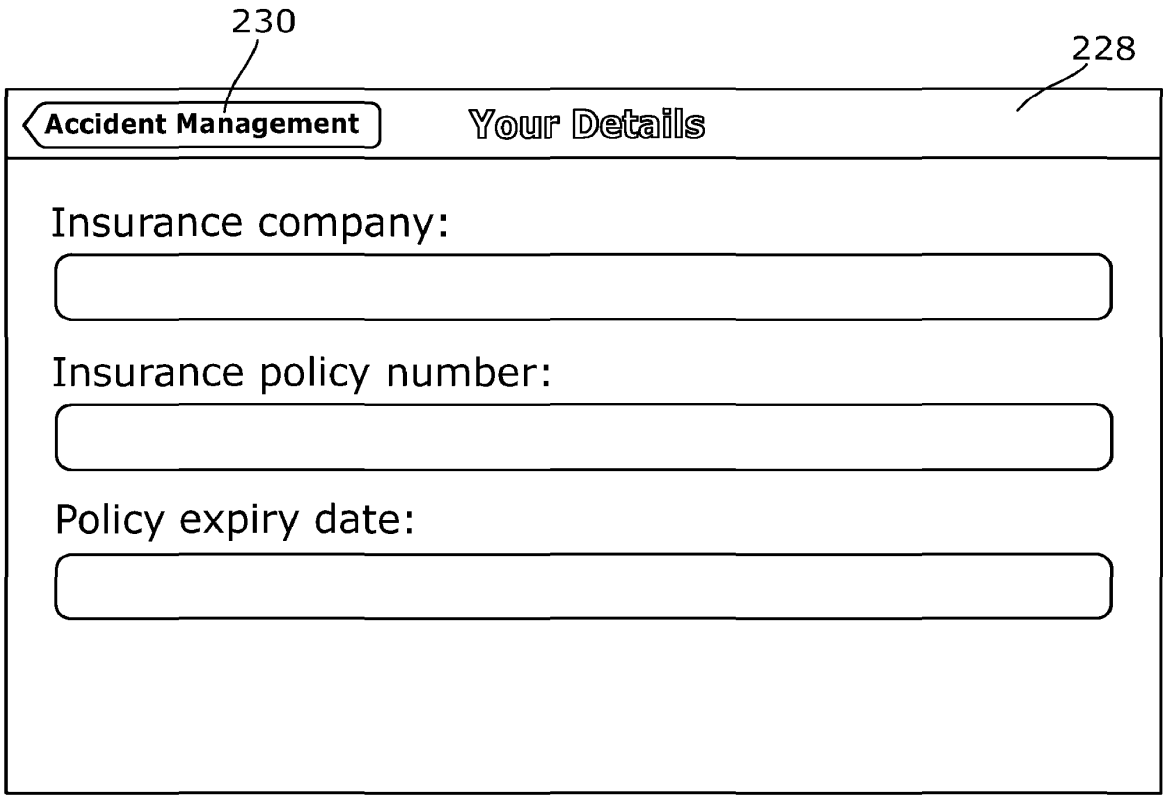
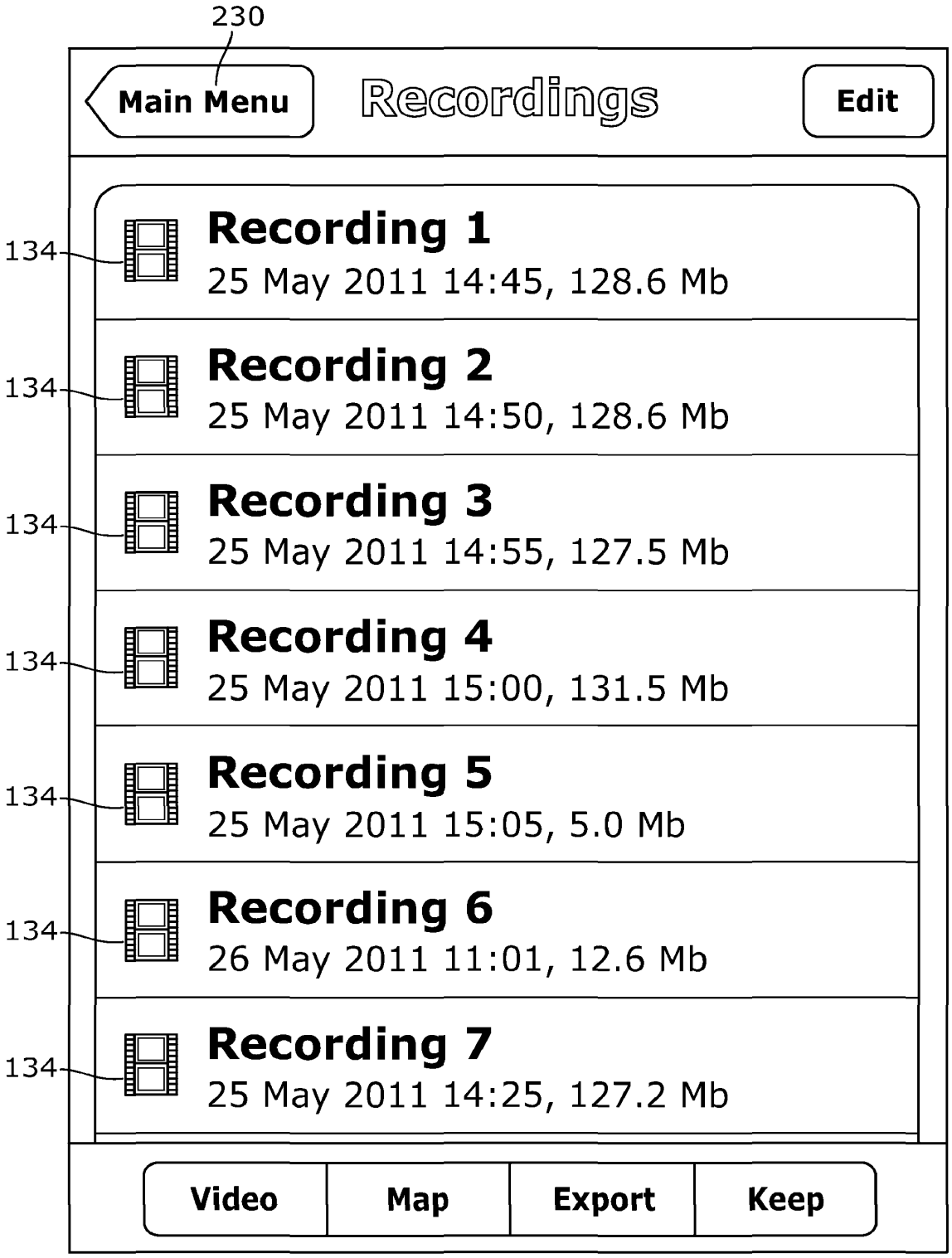

230
228
Accident Management
Your Details
Insurance company:
Insurance policy number:
Policy expiry date:

Fig. 19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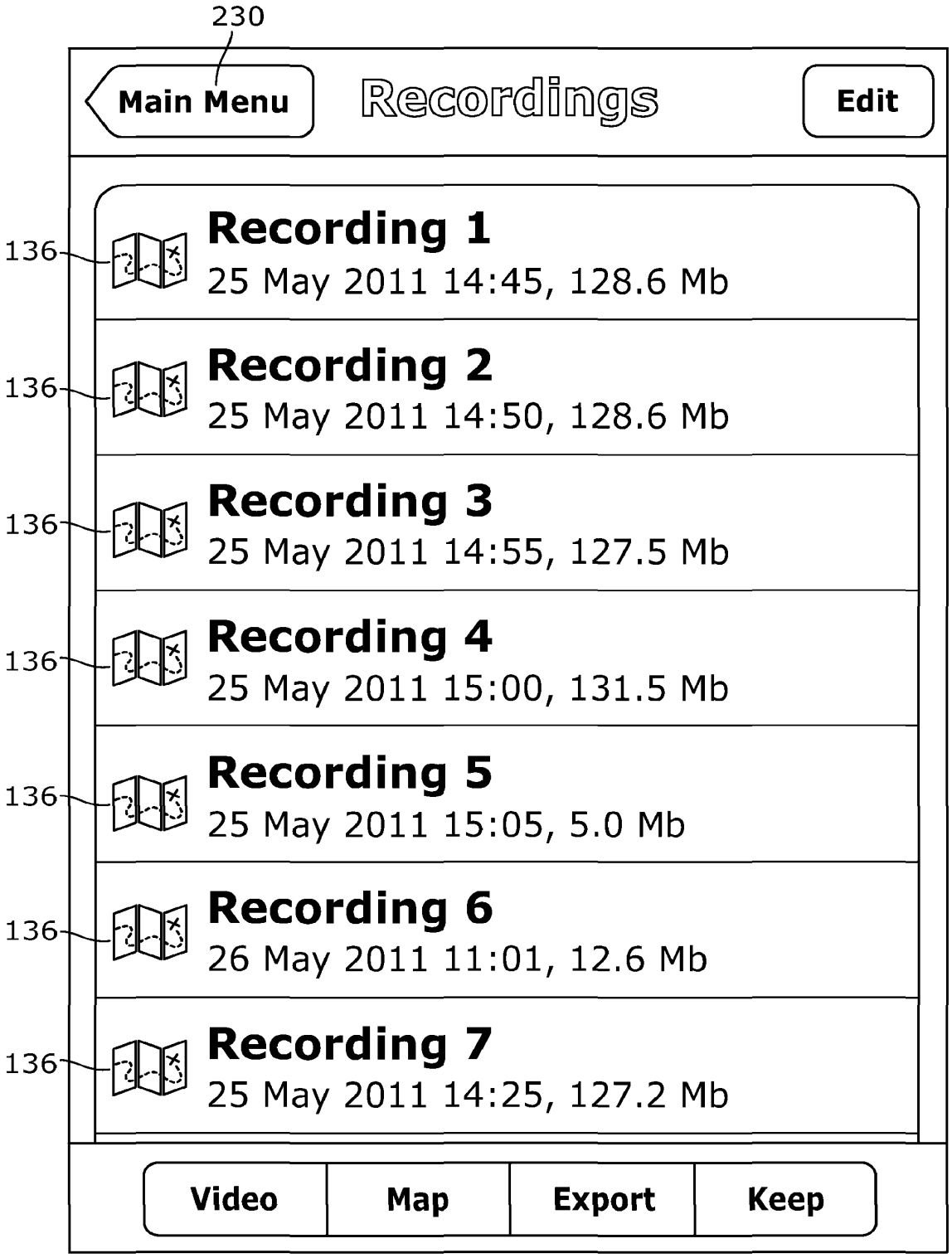
Main Menu
Recordings
Edit
134
Recording 1
25 May 2011 14:45, 128.6 Mb
134
Recording 2
25 May 2011 14:50, 128.6 Mb
134
Recording 3
25 May 2011 14:55, 127.5 Mb
134
Recording 4
25 May 2011 15:00, 131.5 Mb
134
Recording 5
25 May 2011 15:05, 5.0 Mb
134
Recording 6
26 May 2011 11:01, 12.6 Mb
134
Recording 7
25 May 2011 14:25, 127.2 Mb
Video
Map
Export
Keep

Fig. 20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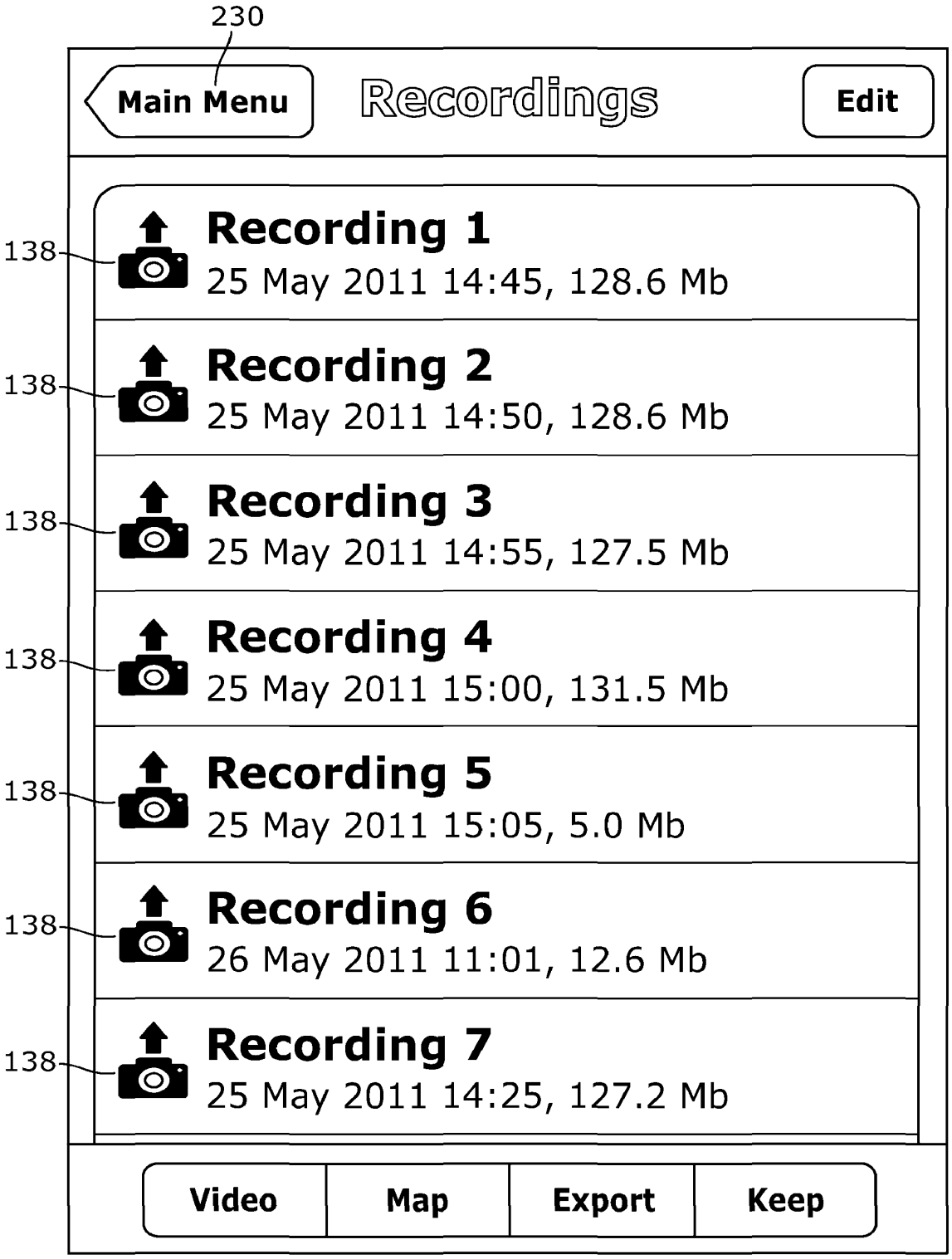
Main Menu
Recordings
Edit
136
Recording 1
25 May 2011 14:45, 128.6 Mb
136
Recording 2
25 May 2011 14:50, 128.6 Mb
136
Recording 3
25 May 2011 14:55, 127.5 Mb
136
Recording 4
25 May 2011 15:00, 131.5 Mb
136
Recording 5
25 May 2011 15:05, 5.0 Mb
136
Recording 6
26 May 2011 11:01, 12.6 Mb
136
Recording 7
25 May 2011 14:25, 127.2 Mb
Video
Map
Export
Keep

Fig. 21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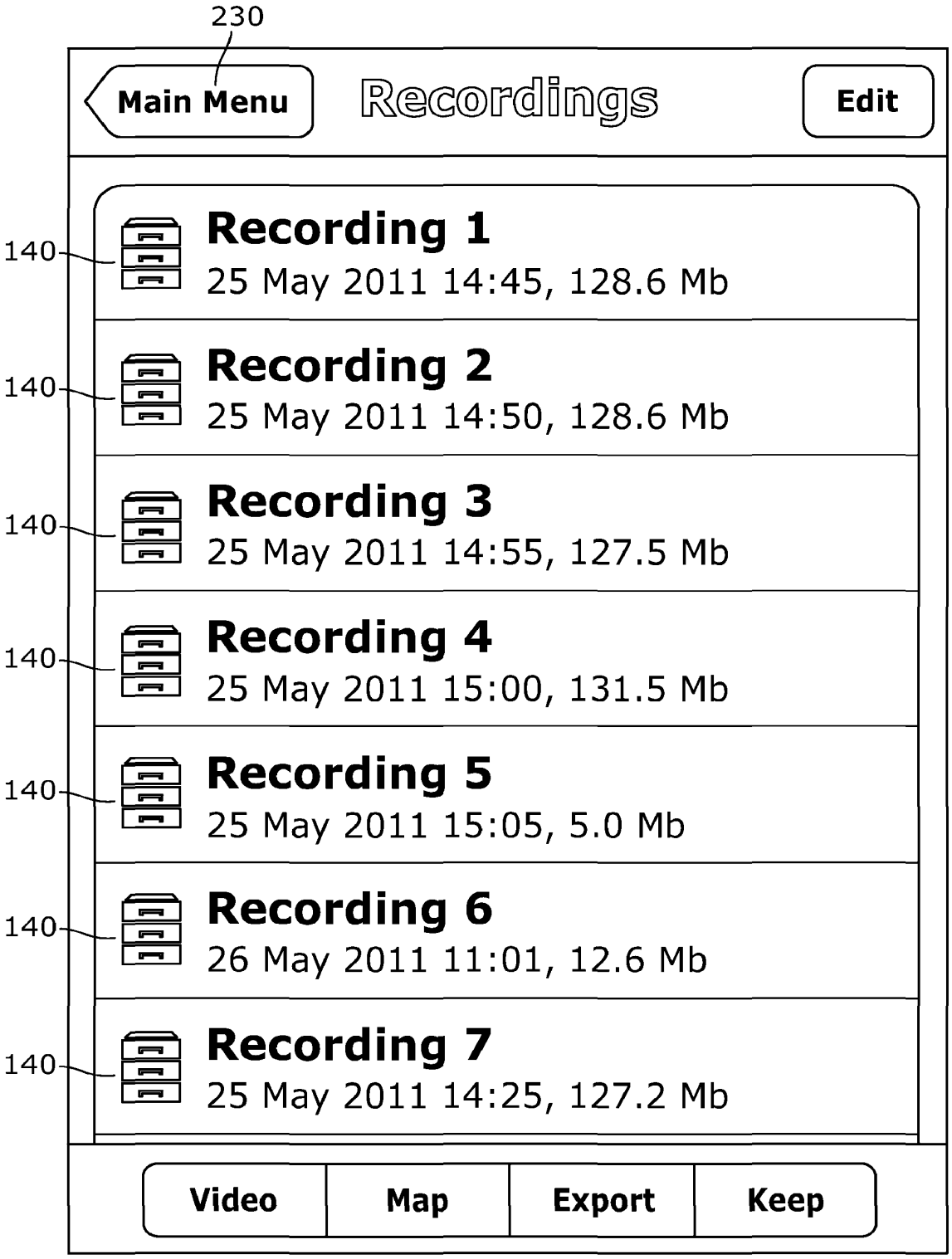
Main Menu
Recordings
Edit
138
Recording 1
25 May 2011 14:45, 128.6 Mb
138
Recording 2
25 May 2011 14:50, 128.6 Mb
138
Recording 3
25 May 2011 14:55, 127.5 Mb
138
Recording 4
25 May 2011 15:00, 131.5 Mb
138
Recording 5
25 May 2011 15:05, 5.0 Mb
138
Recording 6
26 May 2011 11:01, 12.6 Mb
138
Recording 7
25 May 2011 14:25, 127.2 Mb
Video
Map
Export
Keep

Fig. 22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Main Menu
Recordings
Edit
140
Recording 1
25 May 2011 14:45, 128.6 Mb
140
Recording 2
25 May 2011 14:50, 128.6 Mb
140
Recording 3
25 May 2011 14:55, 127.5 Mb
140
Recording 4
25 May 2011 15:00, 131.5 Mb
140
Recording 5
25 May 2011 15:05, 5.0 Mb
140
Recording 6
26 May 2011 11:01, 12.6 Mb
140
Recording 7
25 May 2011 14:25, 127.2 Mb
Video
Map
Export
Keep

Fig. 23

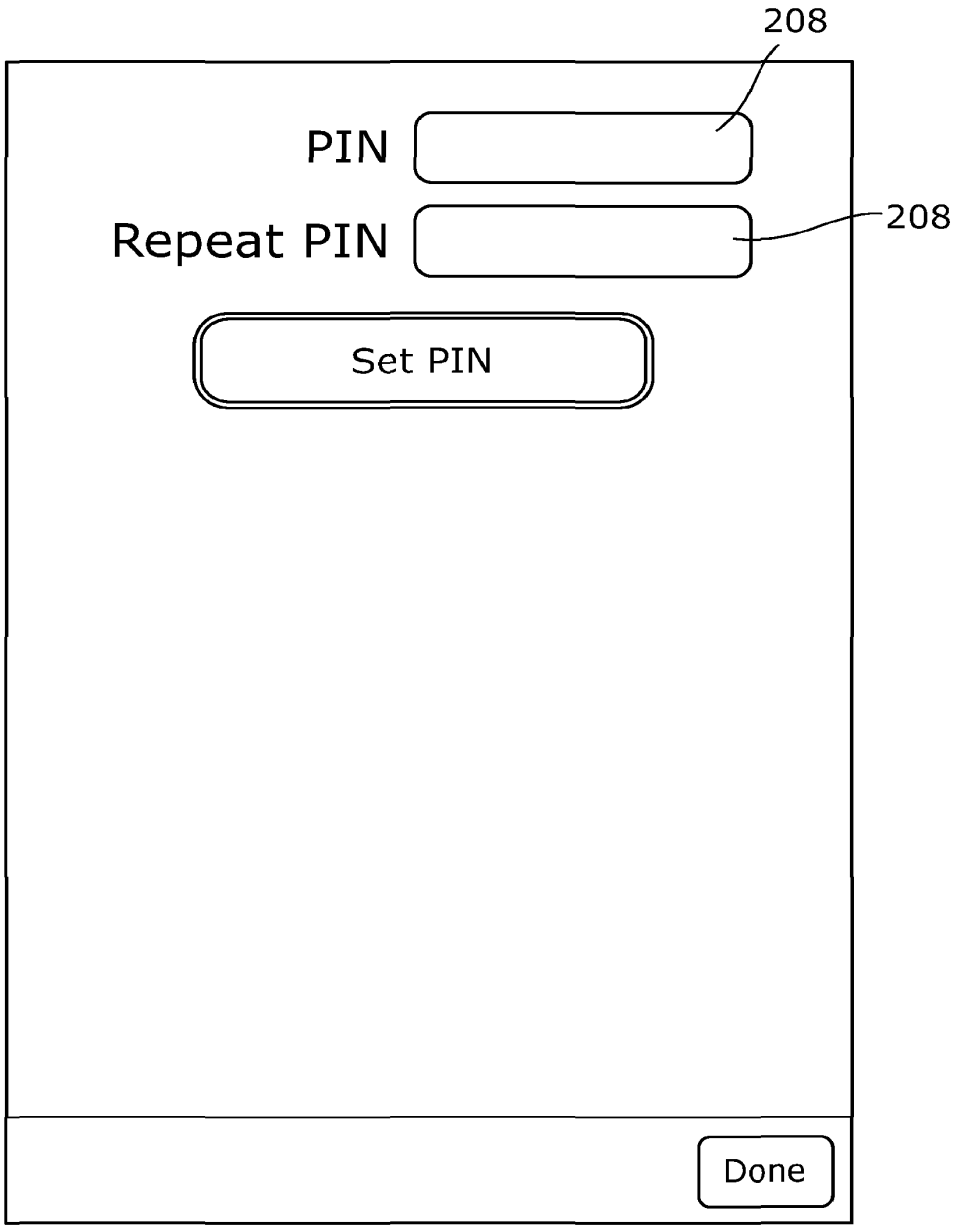

Fig. 24