**Exhibit A-01 to CMT’s Invalidity Contentions:**
**Comparison of U.S. Patent No. 8,989,952 and Wright**

As described in the following claim chart, claims 1-18 (“asserted claims”) of U.S. Patent No. 8,989,952 (“the ’952 patent”) are invalid under 35 U.S.C. §§ 102 and/or 103 in view of U.S. Pat No. 9,311,271 (“Wright”) titled “Method And System For Logging Vehicle Behavior.”

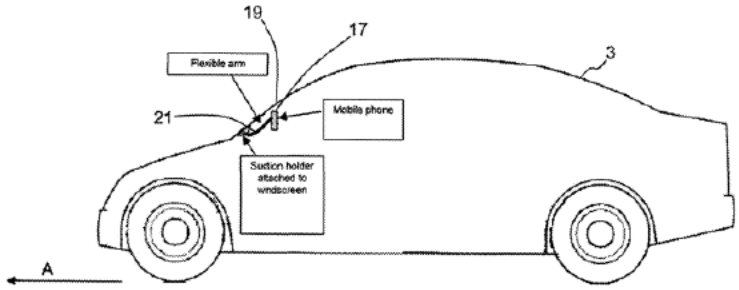
Wright issued on April 12, 2016 from a PCT application that was filed on December 15, 2011, with a publication date of June 21, 2012. Therefore, it constitutes prior art to the ’952 patent under at least pre-AIA 35 U.S.C. §§ 102(a), (b) or (e) and/or AIA § 102(a).

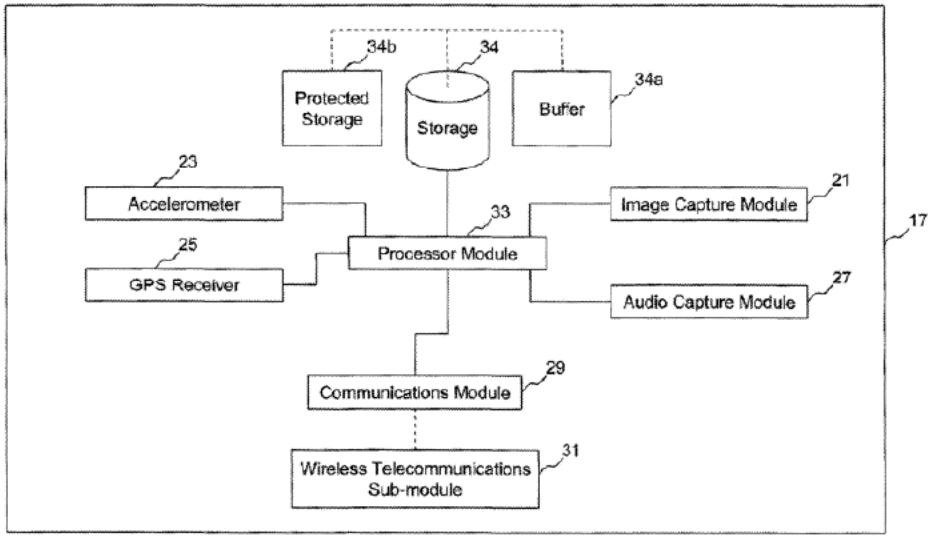
To the extent that Wright is found not to anticipate one or more of the asserted claims of the ’952 patent, those claims are obvious in view of Wright alone or in combination with the knowledge of a POSITA and/or with other prior art references, including, without limitation, one or more references identified in Exhibits A-01 through A-19 to CMT’s Invalidity Contentions. CMT’s Invalidity Contentions provide additional details regarding the motivation to combine Wright and the references cited in those exhibits.

CMT notes that while certain potential obviousness arguments and/or combinations may be cited within these charts, such recitations are not meant to be exhaustive. As such, to the extent that any asserted claims are found not to be anticipated by the reference herein, Plaintiff reserves the right to argue that such non-anticipated claims are obvious over the reference alone, in view of the ordinary skill in the art at the time of the alleged invention, in view of any of the arguments and/or prior art identified in the cover pleading or any exhibits thereto, and/or in combination with other charts provided herewith.

Claim construction is yet to occur, fact discovery is ongoing, and the invalidity of the asserted claims will likely be the subject of expert discovery. Thus, this chart should not suggest CMT’s adoption of or acquiescence in any claim scope and/or claim construction positions taken by Sfara in its infringement contentions or elsewhere. This chart is intended to set forth CMT’s contentions, not all of the evidence that may support such contentions. Where this chart states that a reference discloses any aspect of the claimed invention, the disclosure may be either express or inherent. The cited passages are illustrative and not intended to be exhaustive. Further, citations to any figure, table, or chart is also meant to encompass the language describing the respective figure, table, or chart; and vice-versa. CMT reserves the right to rely on other documents or passages providing comparable evidence of how that Wright alone or in combination with the knowledge of a POSITA and/or other prior art references renders the asserted claims of the ’952 patent invalid.

| '952 Patent, Claim 1 | | Prior Art |
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| **1[pre]** | A device for use with a vehicle, said device comprising: | CMT does not concede that the preamble is limiting. To the extent it is limiting, Wright discloses and/or renders obvious a device for use with a vehicle. *See, e.g.*:<br><br>Wright at Abstract:<br><br>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.<br><br>Wright at 12:65-13:4:<br><br>FIG. 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.<br><br>Wright at 12:38-39:<br><br>FIG. 2 is an illustration of the automobile of FIG. 1 configured with a mobile device in accordance various embodiments of the present disclosure: |

| ’952 Patent, Claim 1 | | Prior Art |
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| | | <br>Fig .2<br>FIG. 3 is a schematic illustration of the functional components of the mobile device of FIG. 2; |

| '952 Patent, Claim 1 | | Prior Art |
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| | | <br>Fig .3<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **1[a]** | a mode-determining component operable to detect whether the device is in the | Wright discloses and/or renders obvious a mode-determining component operable to detect whether the device is in the vehicle and to generate an in-vehicle signal. *See, e.g.*:<br><br>Wright at 3:25-54: |

| '952 Patent, Claim 1 | | Prior Art |
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| | vehicle and to generate an in-vehicle signal; | 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 kilometers 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.<br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

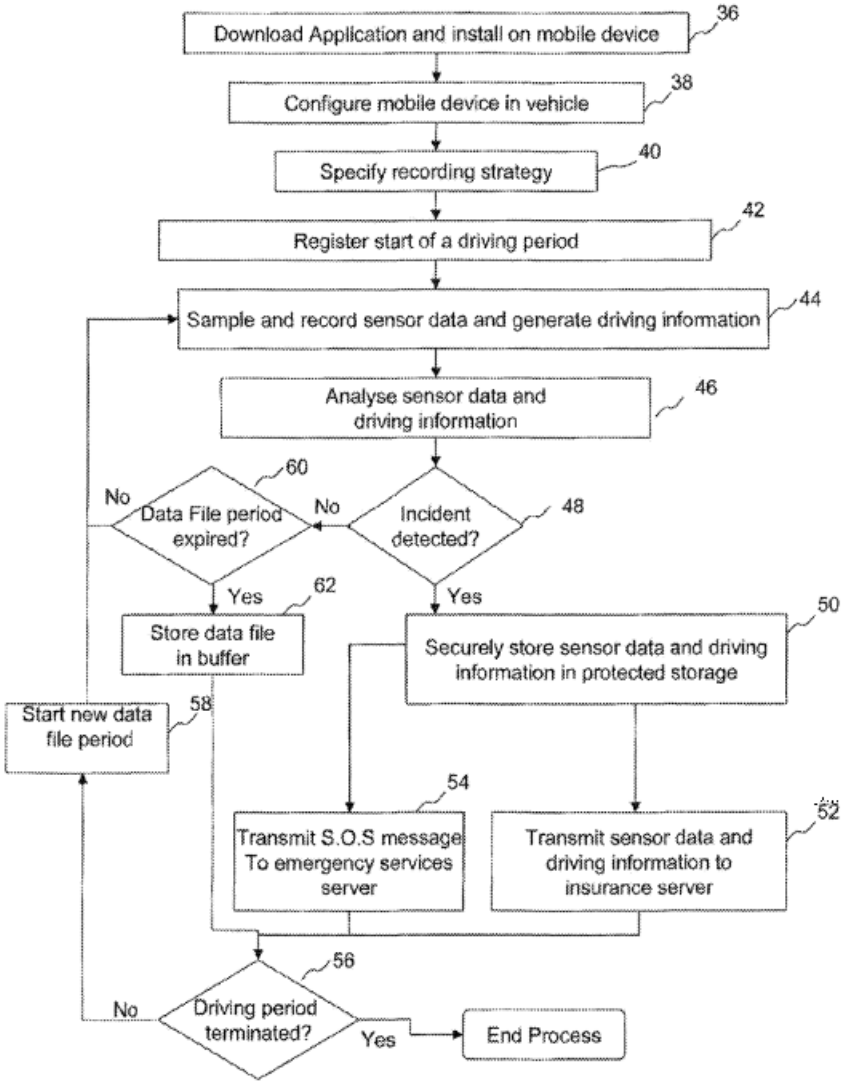
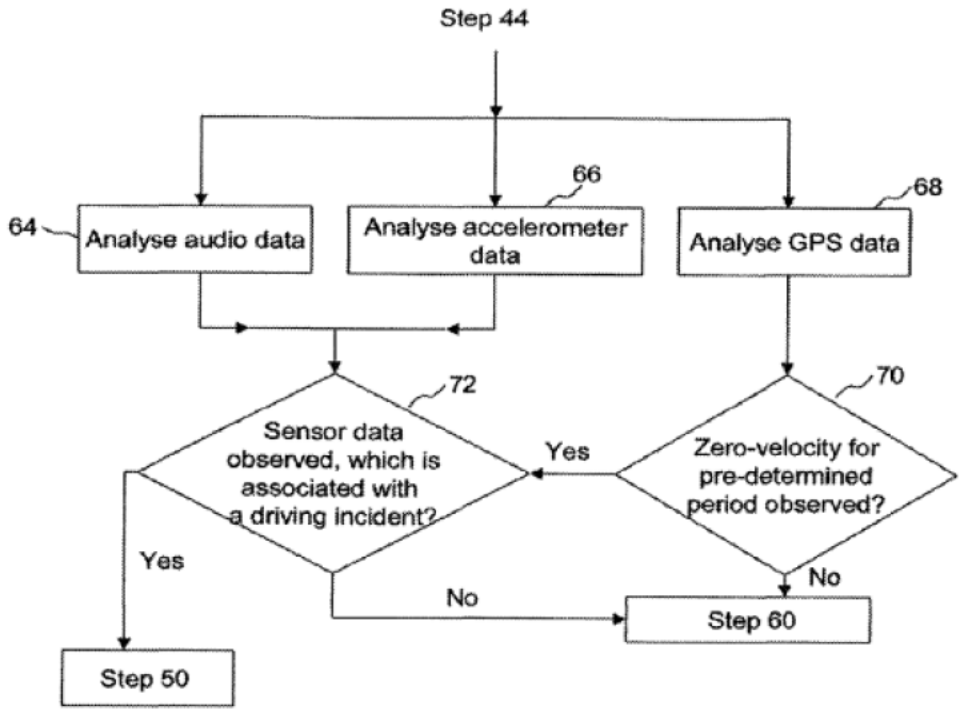

Download Application and install on mobile device
36
Configure mobile device in vehicle
38
Specify recording strategy
40
Register start of a driving period
42
Sample and record sensor data and generate driving information
44
Analyse sensor data and driving information
46
60
No
Data File period expired?
No
Incident detected?
48
Yes
62
Yes
Store data file in buffer
50
Securely store sensor data and driving information in protected storage
Start new data file period
58
54
Transmit S.O.S message To emergency services server
52
Transmit sensor data and driving information to insurance server
56
No
Driving period terminated?
Yes
End Process

Fig. 4a

| ’952 Patent, Claim 1 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| '952 Patent, Claim 1 | | Prior Art |
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| | | 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.<br>Wright at 18:30-58:<br>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 kilometers per hour is detected.<br>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.<br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 1 | | Prior Art |
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| **1[b]** | a first detecting component operable detect a first parameter and to generate a first detector signal based on the first detected parameter; and | Wright discloses and/or renders obvious a first detecting component operable detect a first parameter and to generate a first detector signal based on the first detected parameter. *See, e.g.*:<br><br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

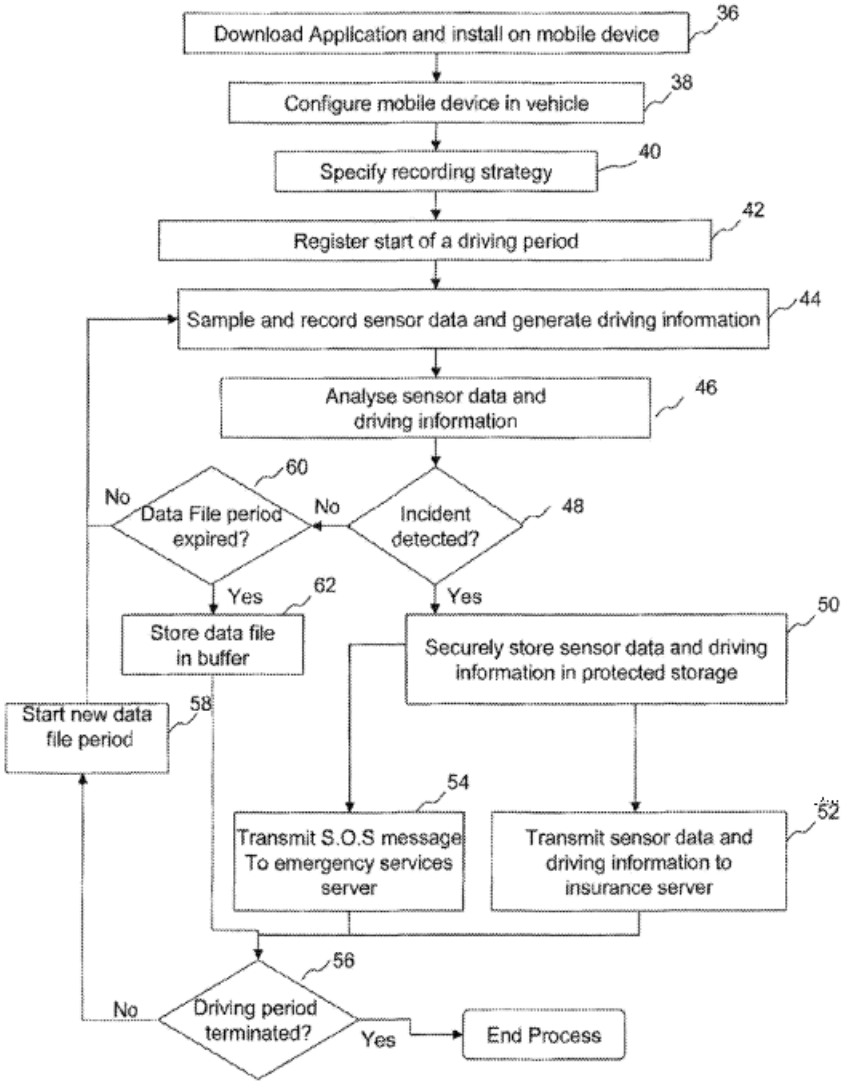
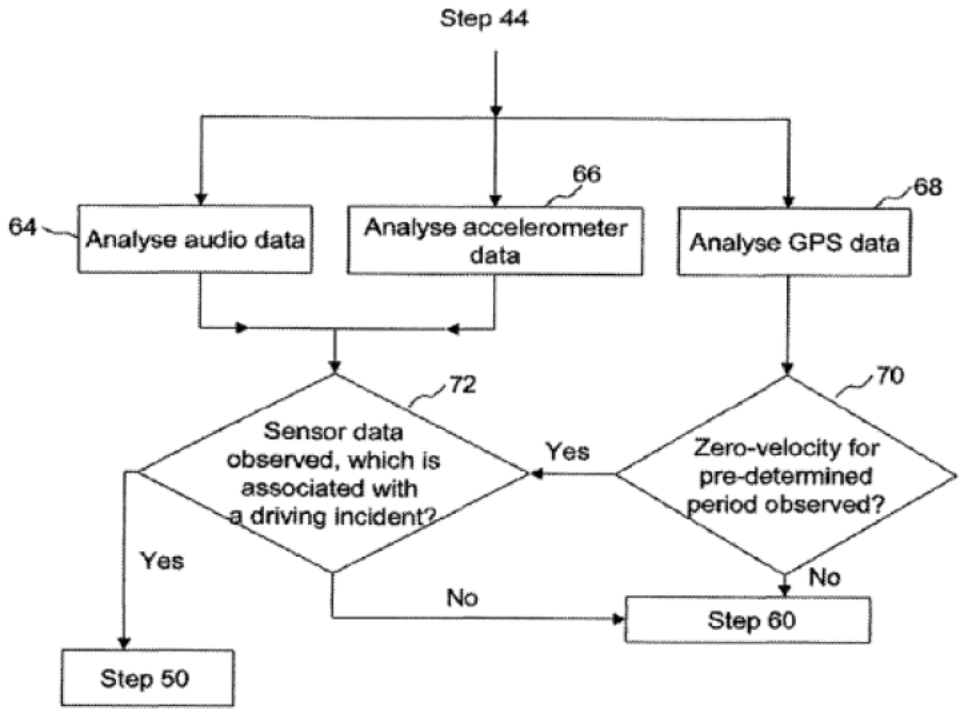

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Sample and record sensor data and generate driving information
44
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46
60
No
Data File period expired?
No
Incident detected?
48
Yes
62
Yes
50
Store data file in buffer
Securely store sensor data and driving information in protected storage
Start new data file period
58
54
52
Transmit S.O.S message To emergency services server
Transmit sensor data and driving information to insurance server
56
No
Driving period terminated?
Yes
End Process

Fig. 4a

| ’952 Patent, Claim 1 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| '952 Patent, Claim 1 | | Prior Art |
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| | | 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.<br>Wright at 15:38-45:<br>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.<br>Wright at 15:57-65:<br>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.<br>Wright at 15:66-16:6:<br>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. |

| '952 Patent, Claim 1 | | Prior Art |
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| **1[c]** | a second detecting component operable detect a second parameter and to generate a second detector signal based on the second detected parameter; | Wright discloses and/or renders obvious a second detecting component operable detect a second parameter and to generate a second detector signal based on the second detected parameter. *See, e.g.*:<br><br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

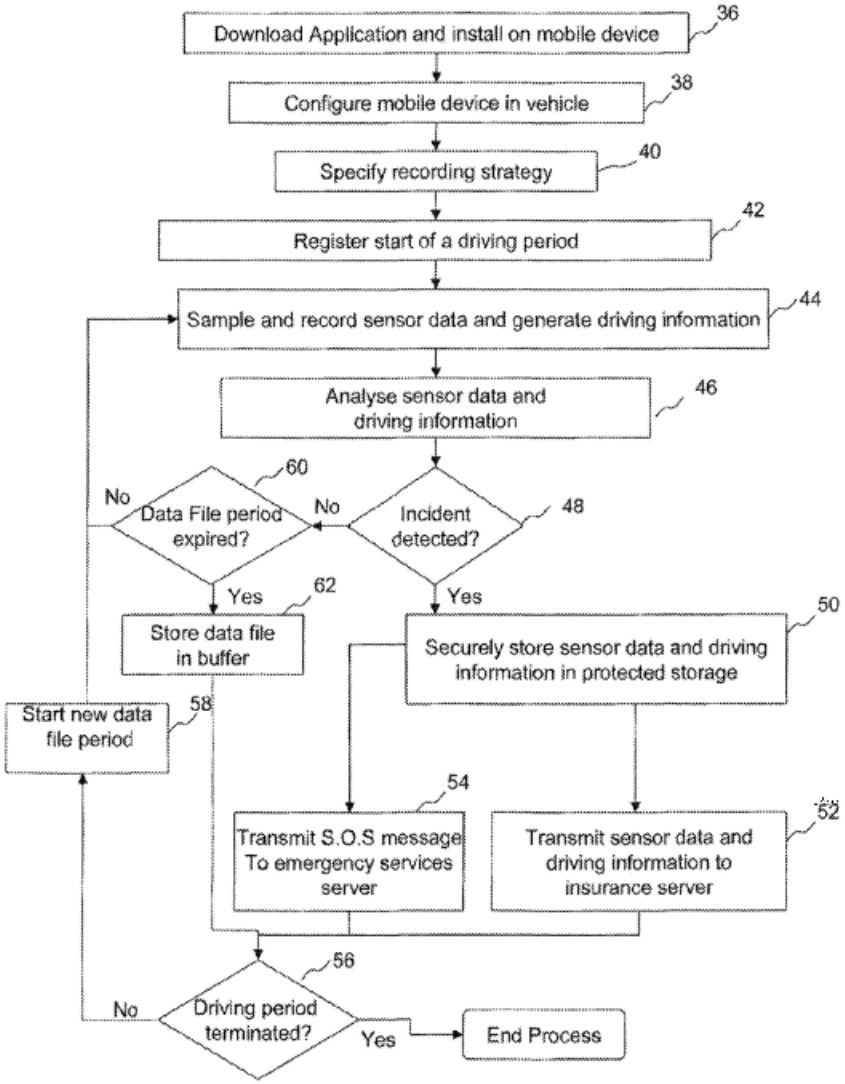
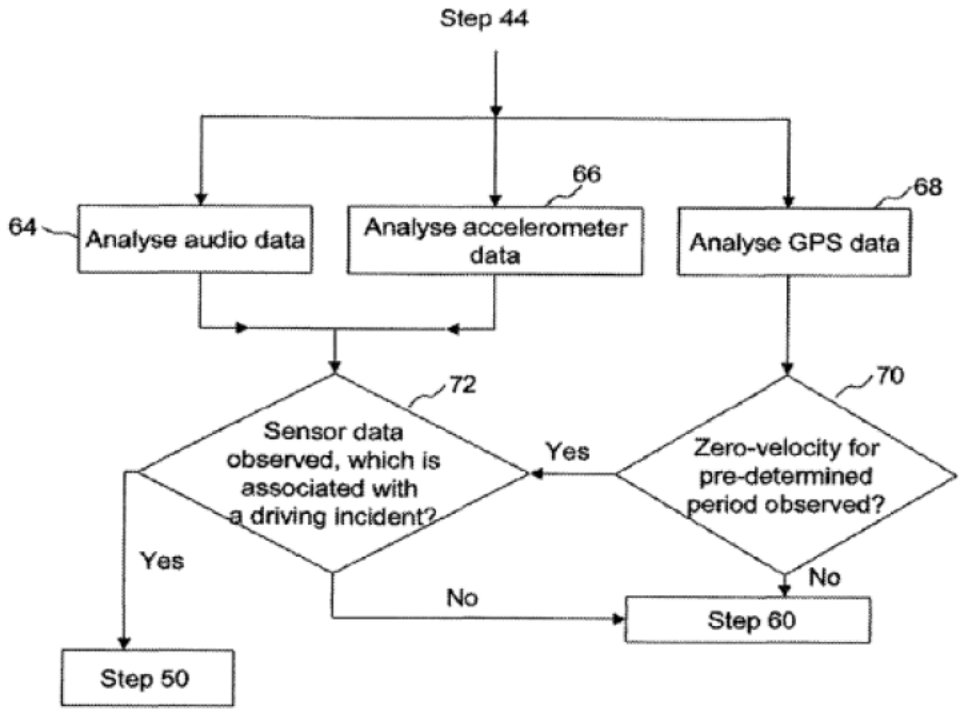

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End Process

Fig. 4a

| ’952 Patent, Claim 1 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

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| **1[d]** | wherein said mode-determining component is further operable to generate a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal. | Wright discloses and/or renders obvious wherein said mode-determining component is further operable to generate a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal. *See, e.g.*:<br><br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

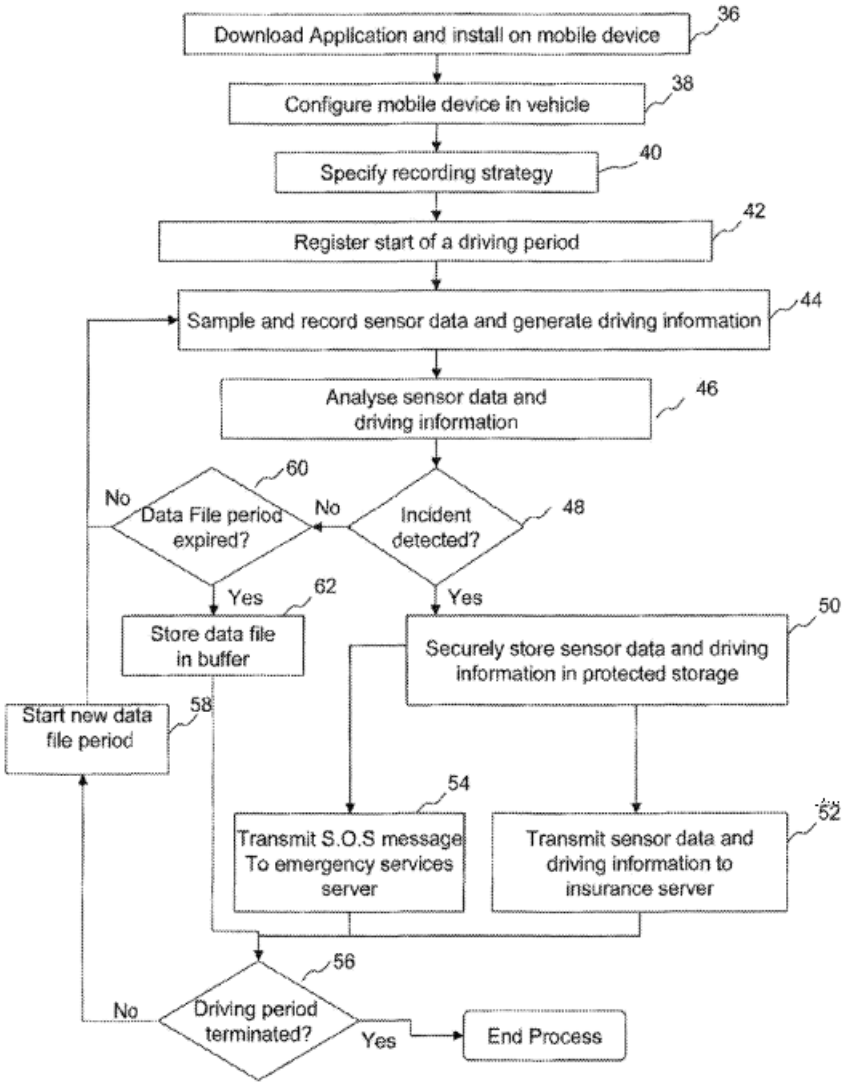
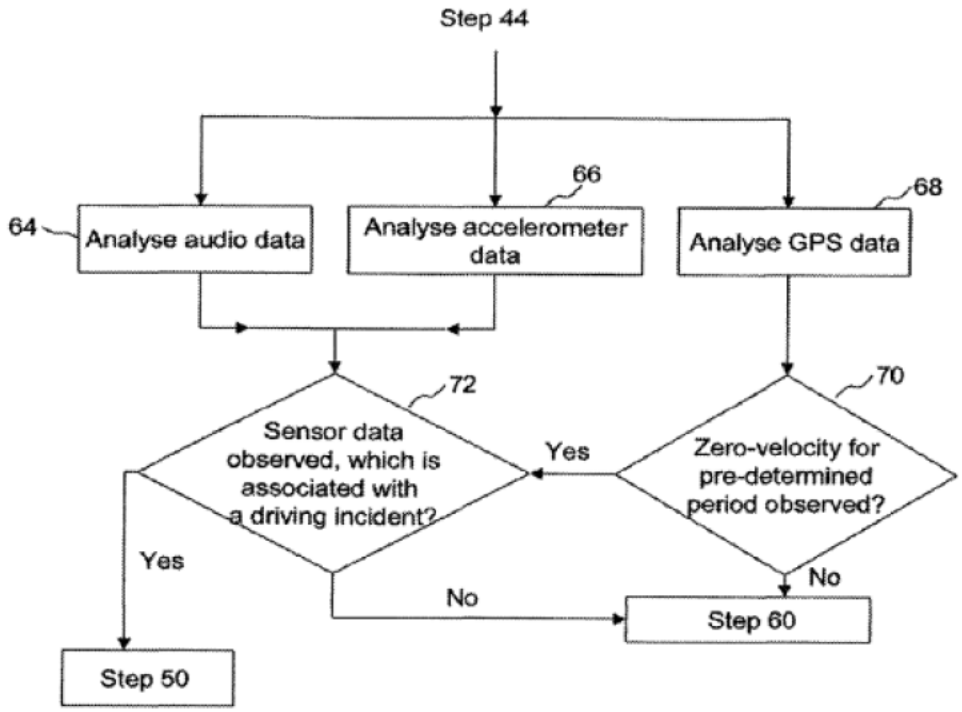

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End Process

Fig. 4a

| ’952 Patent, Claim 1 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| ’952 Patent, Claim 1 | | Prior Art |
|---|---|---|
| | | 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.<br>Wright at 20:16-21:37:<br>FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 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.<br>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 |

| ’952 Patent, Claim 1 | | Prior Art |
|---|---|---|
| | | incident, present within the captured audio data signal captured by the audio capture module 27.<br><br>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.<br><br>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:<br><br>Harsh braking—a deceleration of greater than 2.5 m/s2 or forward G-force of greater than 0.7 G for more than 400 msec.<br><br>Harsh acceleration—from stationary, an acceleration greater than 2.5 m/s2 or backward G-force of greater than 0.7 G for more than 800 msec.<br><br>Harsh swerving—lateral G-forces greater than 0.7 G for more than 400 msec.<br><br>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 |

| ’952 Patent, Claim 1 | | Prior Art |
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| | | during an initial configuration of the mobile telecommunications device, by indicating the type of vehicle the device is being used with.<br><br>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 FIG. 4a . If instead a driving incident is not detected, the telecommunications device proceeds with step 60 of FIG. 4 a.<br><br>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 FIG. 4a . This is a further example of a threshold condition, discussed previously.<br><br>Wright at 13:15-24:<br><br>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.<br><br>Wright at 20:16-59:<br><br>FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 4a ) in a preferred embodiment, where the mobile telecommunications device 17 is configured to sample audio data, accelerometer data, and |

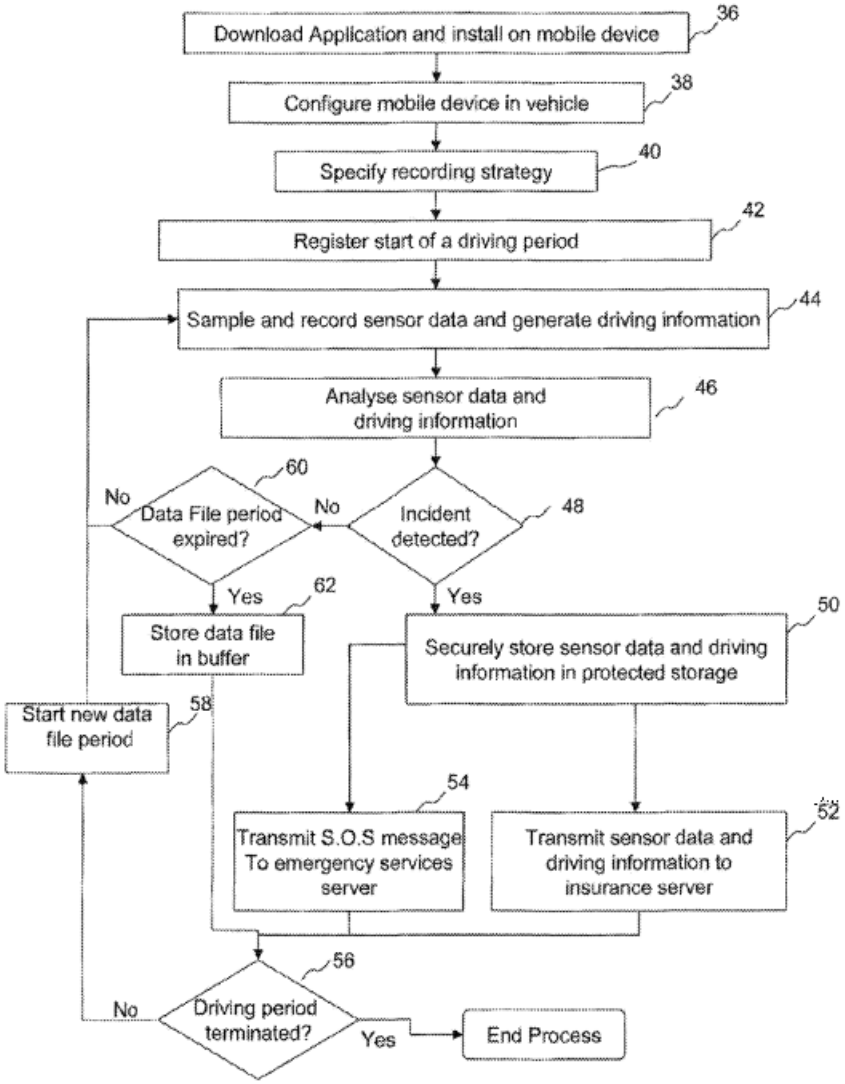
| '952 Patent, Claim 1 | | Prior Art |
|---|---|---|
| | | GPS data only. Each one of these types of data is analysed in turn, at steps 64, 66 and 68. The analysis may comprise comparing measured sensor data and/or derived driving information with a data model. The model may comprise defined threshold 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.<br><br>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.<br><br>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. |

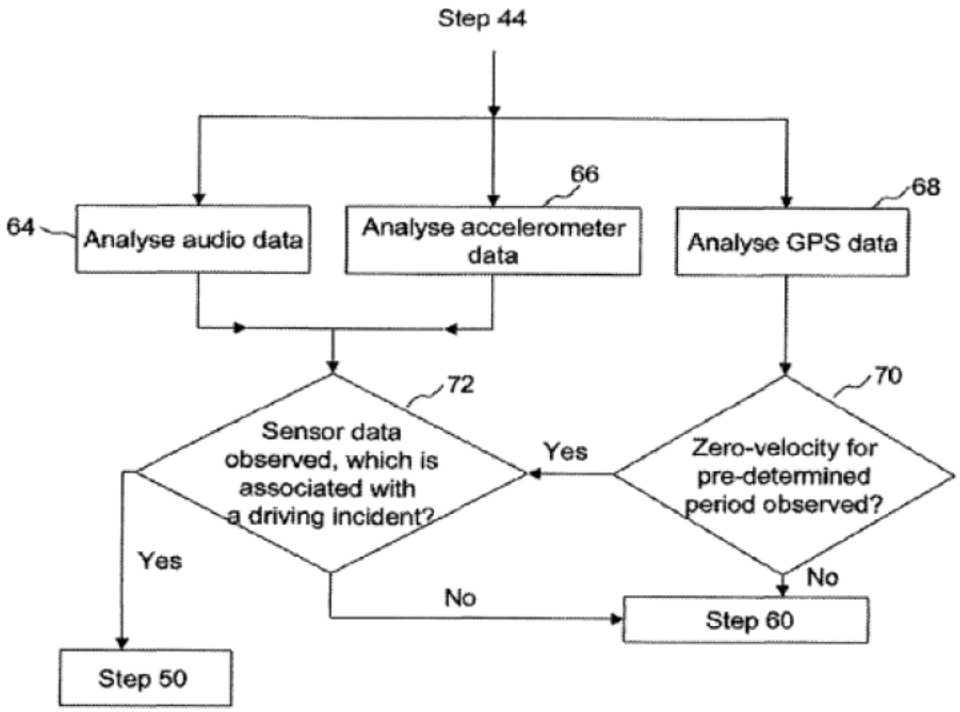
| ’952 Patent, Claim 1 | | Prior Art |
|---|---|---|
| | | Wright at 18:55-19:8:<br><br>The processor module 33 determines if a driving incident has been detected, at step 48. This is determined on the basis of the analysis carried out at step 46. If a driving incident has been detected, all the sensor data and driving information associated with the data file period, is stored in a data file in protected storage 34 b, at step 50.<br><br>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.<br><br>Wright at 119:9-28:<br><br>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 |

| '952 Patent, Claim 1 | | Prior Art |
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| | | 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.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 2 | | Prior Art |
|---|---|---|
| **2.** | The device of claim 1, wherein said first detecting component is operable to detect, as the first parameter, one of the group consisting of magnetic fields in any of three dimensions, | Wright discloses and/or renders obvious that said first detecting component is operable to detect, as the first parameter, one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three |

| '952 Patent, Claim 2 | | Prior Art |
|---|---|---|
| | electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of | dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof. *See, e.g.*:<br><br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

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| | surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position | <br>Fig. 4a |

| '952 Patent, Claim 2 | | Prior Art |
|---|---|---|
| | in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof. | Wright at Fig. 4b:<br><br><br>Fig. 4b<br><br>Wright at 15:66-16:6:<br><br>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 |

| '952 Patent, Claim 2 | | Prior Art |
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| | | 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.<br><br>Wright at 20:16-59:<br><br>FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 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.<br><br>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. |

| '952 Patent, Claim 2 | | Prior Art |
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| | | 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.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 3 | | Prior Art |
|---|---|---|
| **3.** | The device of claim 2, wherein said first detecting component is operable to detect, as the first parameter, a | Wright discloses and/or renders obvious that said first detecting component is operable to detect, as the first parameter, a parameter associated with deployment of an airbag within the vehicle. *See, e.g.*:<br><br>Wright at 20:16-47<br>FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 4a ) in a preferred embodiment, where the mobile telecommunications device 17 is configured to sample audio data, accelerometer data, and |

| '952 Patent, Claim 3 | | Prior Art |
|---|---|---|
| | parameter associated with deployment of an airbag within the vehicle. | 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.<br><br>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.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 4 | | Prior Art |
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| **4.** | The device of claim 2,<br><br>wherein said first detecting component is operable to detect, as the first parameter, acceleration along a single axis, and<br><br>wherein said first detecting component is operable to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value. | Wright discloses and/or renders obvious that said first detecting component is operable to detect, as the first parameter, acceleration along a single axis, and wherein said first detecting component is operable to generate the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value. *See, e.g.*:<br><br>Wright at 8:7-20:<br><br>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.<br><br>Wright at 19:9-28:<br><br>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 |

| '952 Patent, Claim 4 | | Prior Art |
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| | | 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.<br><br>Wright at 20:60-21:5:<br><br>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:<br><br>Harsh braking—a deceleration of greater than 2.5 m/s2 or forward G-force of greater than 0.7 G for more than 400 msec.<br><br>Harsh acceleration—from stationary, an acceleration greater than 2.5 m/s2 or backward G-force of greater than 0.7 G for more than 800 msec.<br><br>Harsh swerving—lateral G-forces greater than 0.7 G for more than 400 msec.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 5 | | Prior Art |
|---|---|---|
| **5.** | The device of claim 1, further comprising a communication component operable to wirelessly communicate with a network. | Wright discloses and/or renders obvious a communication component operable to wirelessly communicate with a network. *See, e.g.*:<br><br>Wright at 1:59-2:9:<br><br>Aspects of some exemplary implementations provides 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.<br><br>Wright at 5:3-17:<br><br>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. |

| ’952 Patent, Claim 5 | | Prior Art |
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| | | Wright at 6:28-49:<br><br>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.<br><br>Wright at 8:64-9:10:<br><br>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.<br><br>Wright at 12:65-13:10: |

| '952 Patent, Claim 5 | | Prior Art |
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| | | FIG. 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.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 6 | | Prior Art |
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| **6.** | The device of claim 1, further comprising:<br><br>an operating component operable to operate in a first | Wright discloses and/or renders obvious an operating component operable to operate in a first mode and a second mode, wherein said operating component is operable to switch from operating in the first mode to operating in the second mode based on the crash mode signal. *See, e.g.*:<br><br>Wright at 3:12-54: |

| '952 Patent, Claim 6 | | Prior Art |
|---|---|---|
| | mode and a second mode,<br><br>wherein said operating component is operable to switch from operating in the first mode to operating in the second mode based on the crash mode signal. | 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.<br><br>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 kilometers 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. |

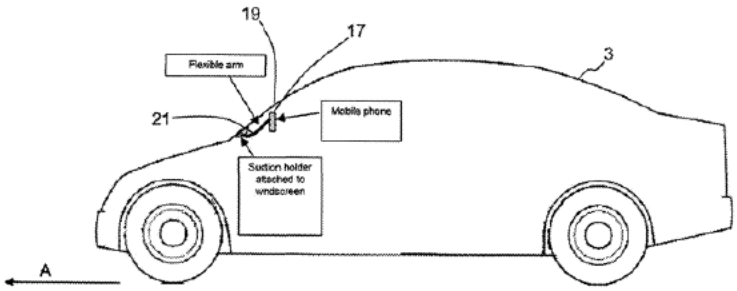
| '952 Patent, Claim 6 | | Prior Art |
|---|---|---|
| | | Wright at 5:3-17:<br><br>Accordingly, the executed application may be arranged to control the mobile device to detect the occurrence of a predetermined event of significance (such as a crash) and in response store driving information associated 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.<br><br>Wright at 6:28-49:<br><br>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.<br><br>Wright at 11:11-51: |

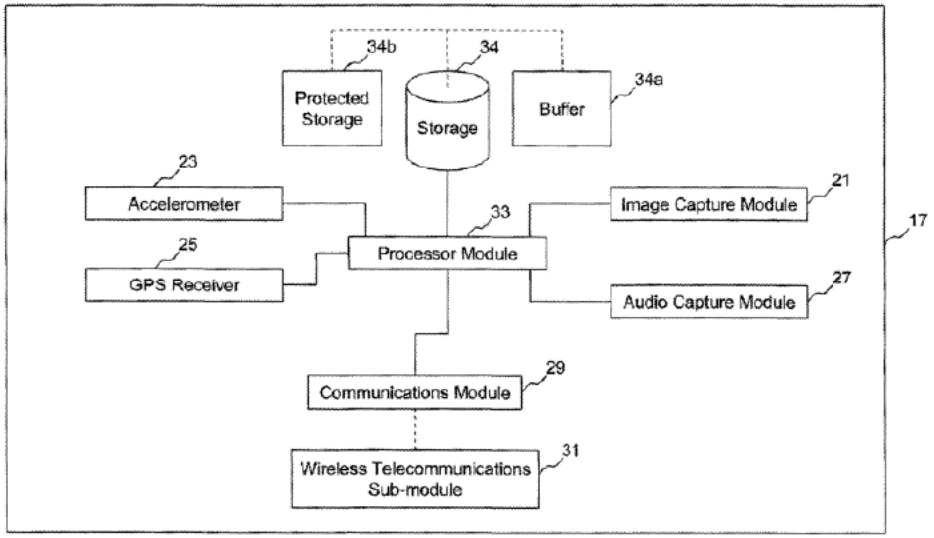
| ’952 Patent, Claim 6 | | Prior Art |
|---|---|---|
| | | According to a fourth aspect of the present disclosure there is provided a mobile device adapted for installation to a vehicle and configured to log driving information associated with the vehicle when driven. Preferably, the mobile device comprises 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.<br><br>According to a fifth aspect of the present disclosure 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 |

| ’952 Patent, Claim 6 | | Prior Art |
|---|---|---|
| | | vehicle is driven; and storing a selection of the driving information to the memory of the mobile device.<br><br>Wright at 18:30-60:<br><br>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 kilometers per hour is detected.<br><br>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.<br><br>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.<br><br>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 34 b, at step 50. |

| '952 Patent, Claim 6 | | Prior Art |
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| | | Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 7 | | Prior Art |
|---|---|---|
| **7[pre]** | A method for use with a vehicle, said method comprising: | CMT does not concede that the preamble is limiting. To the extent it is limiting, Wright discloses and/or renders obvious a method for use with a vehicle. *See, e.g.*:<br><br>Wright at Abstract:<br><br>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.<br><br>Wright at 12:65-13:4:<br><br>FIG. 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 |

| ’952 Patent, Claim 7 | | Prior Art |
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| | | 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.<br><br>Wright at 12:38-39:<br><br>FIG. 2 is an illustration of the automobile of FIG. 1 configured with a mobile device in accordance various embodiments of the present disclosure:<br><br><br><br><br>Fig .2<br><br>FIG. 3 is a schematic illustration of the functional components of the mobile device of FIG. 2; |

| '952 Patent, Claim 7 | | Prior Art |
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| | | <br>Fig .3<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **7[a]** | detecting, via a mode-determining component, whether the mode- | Wright discloses and/or renders obvious detecting, via a mode-determining component, whether the mode-determining component is in the vehicle. *See, e.g.*:<br><br>Wright at 3:12-54: |

| ’952 Patent, Claim 7 | | Prior Art |
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| | determining component is in 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.<br><br>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 kilometers 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. |

| ’952 Patent, Claim 7 | | Prior Art |
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| | | Wright at 18:30-60:<br><br>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 kilometers per hour is detected.<br><br>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.<br><br>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.<br><br>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 34 b, at step 50.<br><br>*See also*, 1[a]. |

| '952 Patent, Claim 7 | | Prior Art |
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| | | Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **7[b]** | generating, via the mode-determining component, an in-vehicle signal; | Wright discloses and/or renders obvious generating, via the mode-determining component, an in-vehicle signal. *See, e.g.*:<br><br>Wright at 3:25-54:<br><br>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 kilometers 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 |

| '952 Patent, Claim 7 | | Prior Art |
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| | | 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.<br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

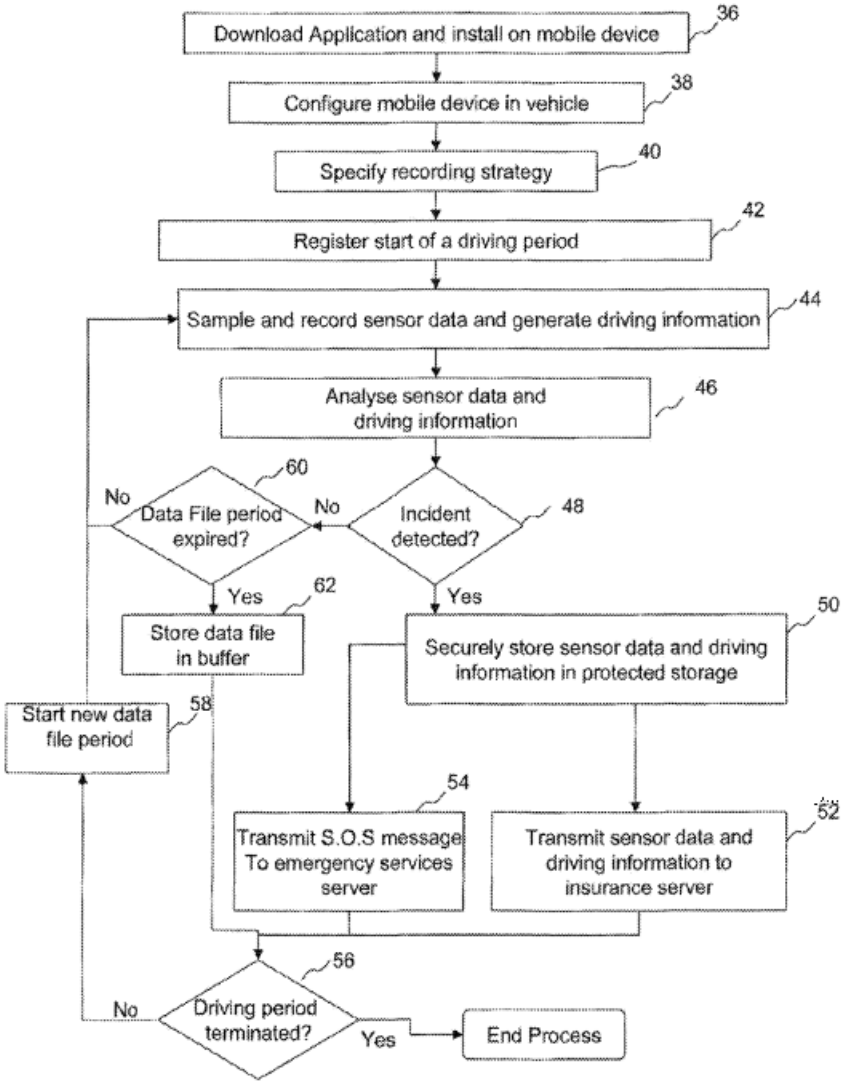
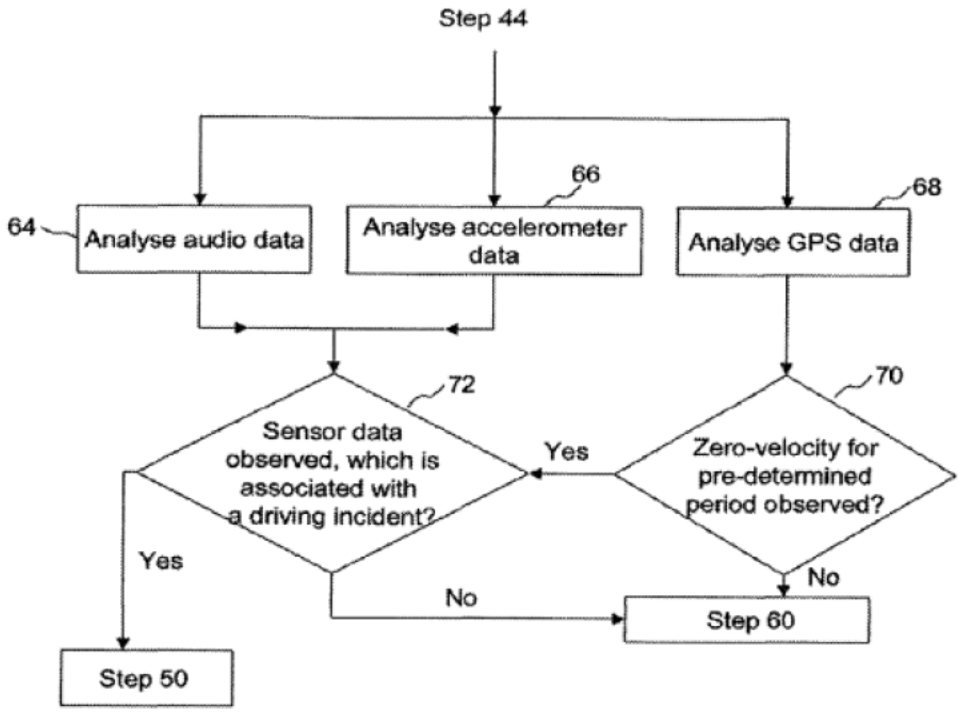

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36
Configure mobile device in vehicle
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40
Register start of a driving period
42
Sample and record sensor data and generate driving information
44
Analyse sensor data and driving information
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60
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Data File period expired?
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48
Yes
62
Yes
Store data file in buffer
50
Securely store sensor data and driving information in protected storage
Start new data file period
58
54
Transmit S.O.S message To emergency services server
52
Transmit sensor data and driving information to insurance server
56
No
Driving period terminated?
Yes
End Process

Fig. 4a

| ’952 Patent, Claim 7 | | Prior Art |
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| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:30-58:<br>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 |

| '952 Patent, Claim 7 | | Prior Art |
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| | | configured to initiate the driving period once sensor data above a minimum threshold value is recorded, indicative of the vehicle being in motion. For example, once a velocity greater than 20 kilometers per hour is detected.<br><br>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.<br><br>*See also*, 1[a], 7[a].<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **7[c]** | detecting, via a first detecting component, a first parameter; | Wright discloses and/or renders obvious detecting, via a first detecting component, a first parameter. *See, e.g.*:<br><br>Wright at 12:43-47:<br><br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br><br>FIG. 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 disclosure |

| ’952 Patent, Claim 7 | | Prior Art |
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| | | Wright at Fig. 4a: |

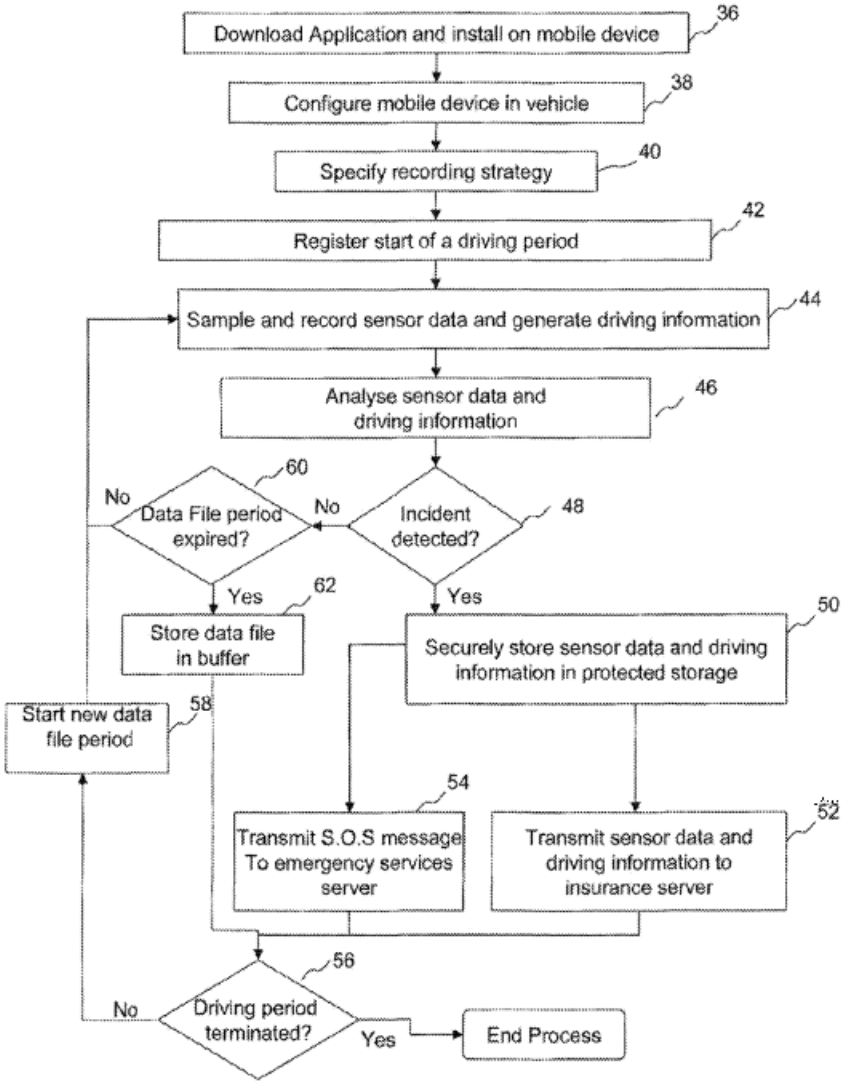
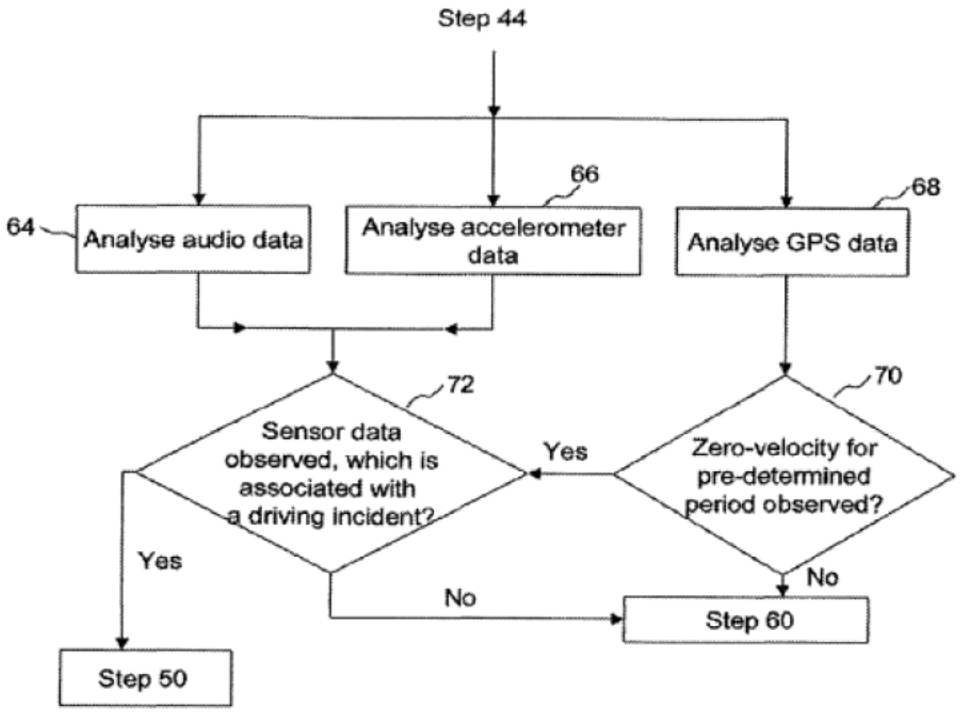

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Securely store sensor data and driving information in protected storage
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52
Transmit S.O.S message To emergency services server
Transmit sensor data and driving information to insurance server
56
No
Driving period terminated?
Yes
End Process

Fig. 4a

| ’952 Patent, Claim 7 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| ’952 Patent, Claim 7 | | Prior Art |
|---|---|---|
| | | 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.<br>Wright at 15:38-45:<br>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.<br>Wright at 15:57-65:<br>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.<br>Wright at 15:66-16:6:<br>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. |

| '952 Patent, Claim 7 | | Prior Art |
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| | | *See also*, 1[b].<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **7[d]** | generating, via the first detecting component, a first detector signal based on the first detected parameter; | Wright discloses and/or renders obvious generating, via the first detecting component, a first detector signal based on the first detected parameter. *See, e.g.*:<br><br>Wright at 12:43-47:<br><br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br><br>FIG. 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 disclosure<br><br>Wright at Fig. 4a: |

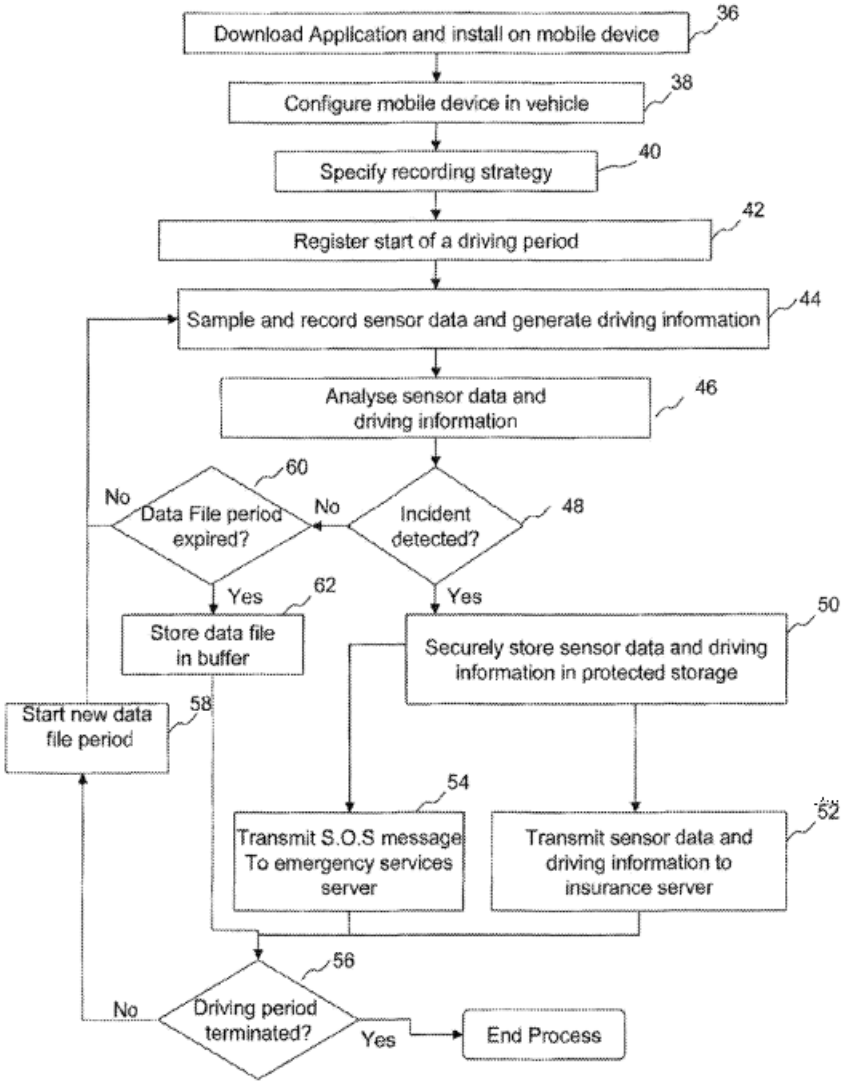
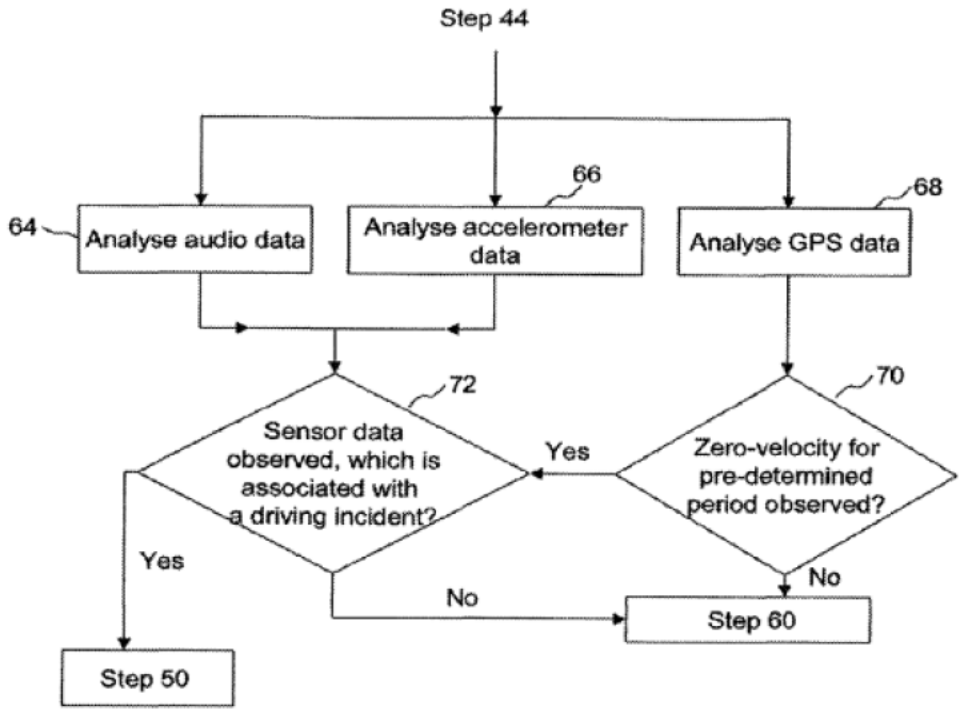

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Securely store sensor data and driving information in protected storage
Start new data file period
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Transmit S.O.S message To emergency services server
Transmit sensor data and driving information to insurance server
56
No
Driving period terminated?
Yes
End Process

Fig. 4a

| ’952 Patent, Claim 7 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| ’952 Patent, Claim 7 | | Prior Art |
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| | | 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.<br>Wright at 15:38-45:<br>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.<br>Wright at 15:57-65:<br>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.<br>Wright at 15:66-16:6:<br>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. |

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| | | *See also*, 1[b], 7[c].<br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **7[e]** | detecting, via a second detecting component, a second parameter; | Wright discloses and/or renders obvious detecting, via a second detecting component, a second parameter. *See, e.g.*:<br><br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

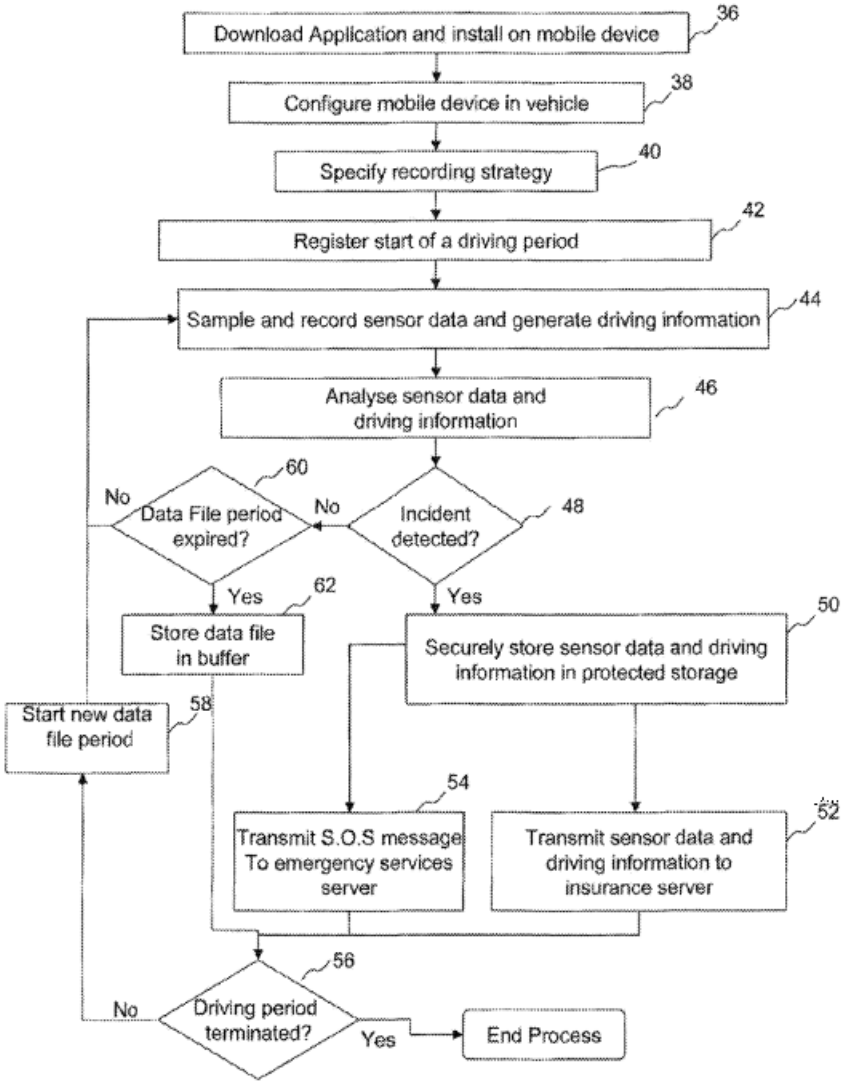
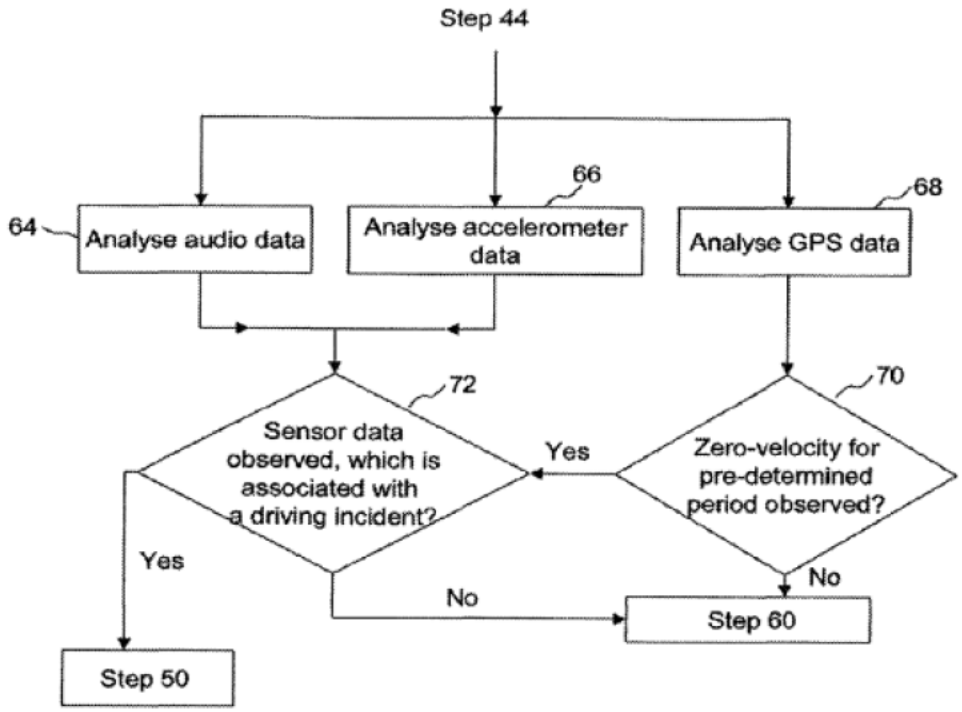

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No
Driving period terminated?
Yes
End Process

Fig. 4a

| ’952 Patent, Claim 7 | | Prior Art |
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| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

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| **7[f]** | generating, via the second detecting component, a second detector signal based on the second detected parameter; and | Wright discloses and/or renders obvious generating, via the second detecting component, a second detector signal based on the second detected parameter. *See, e.g.*:<br><br>Wright at 12:43-47:<br><br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br><br>FIG. 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 disclosure<br><br>Wright at Fig. 4a: |

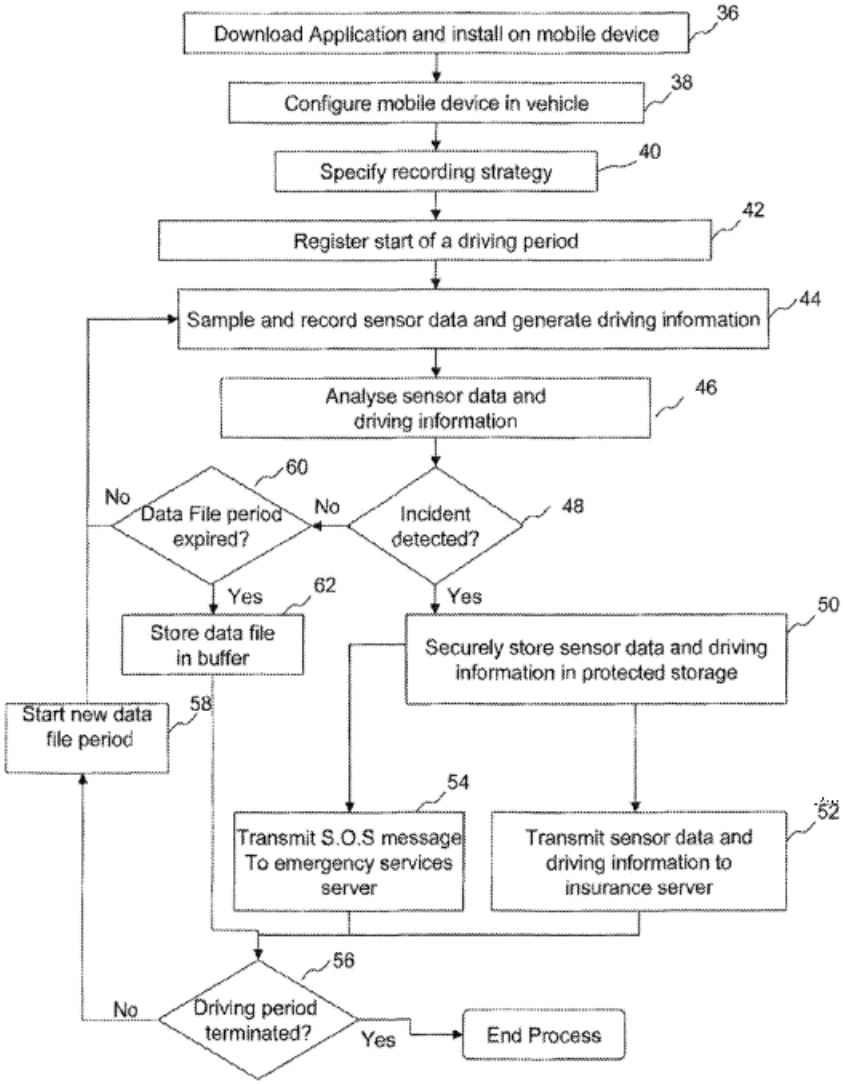
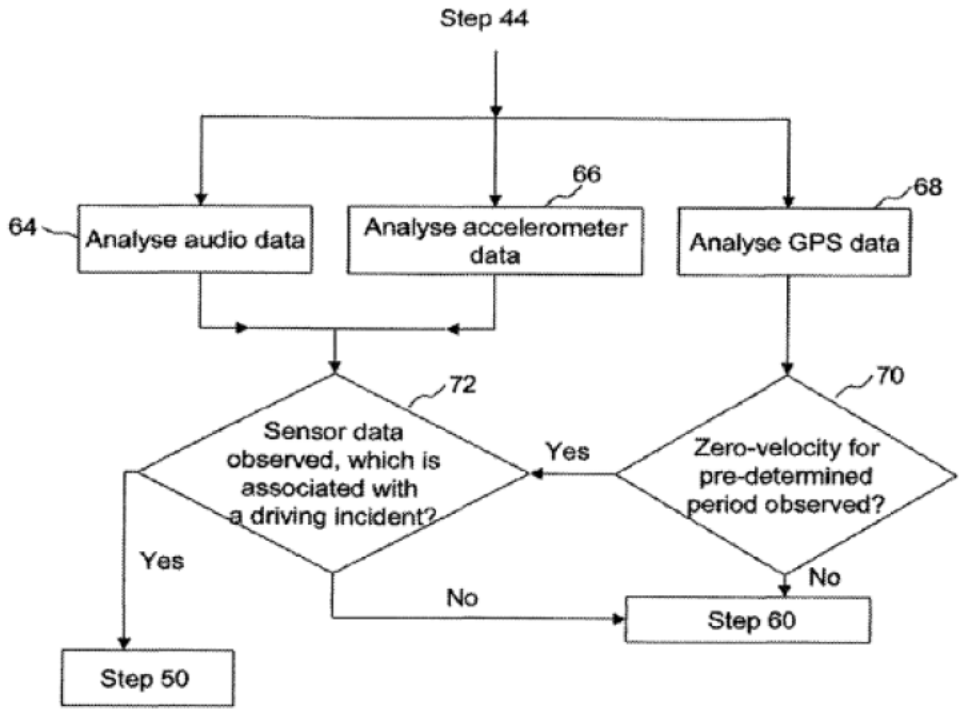

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Driving period terminated?
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End Process

Fig. 4a

| ’952 Patent, Claim 7 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

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| **7[g]** | generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal. | Wright discloses and/or renders obvious generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal. *See, e.g.*:<br><br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

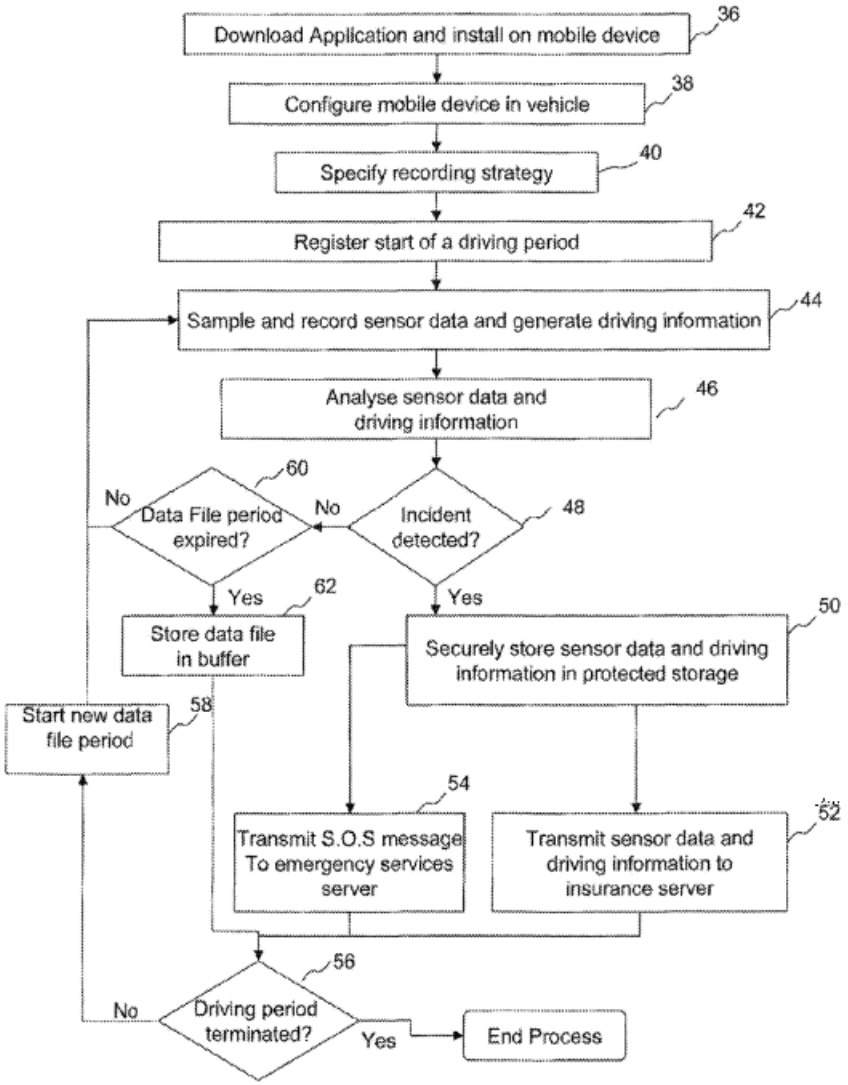
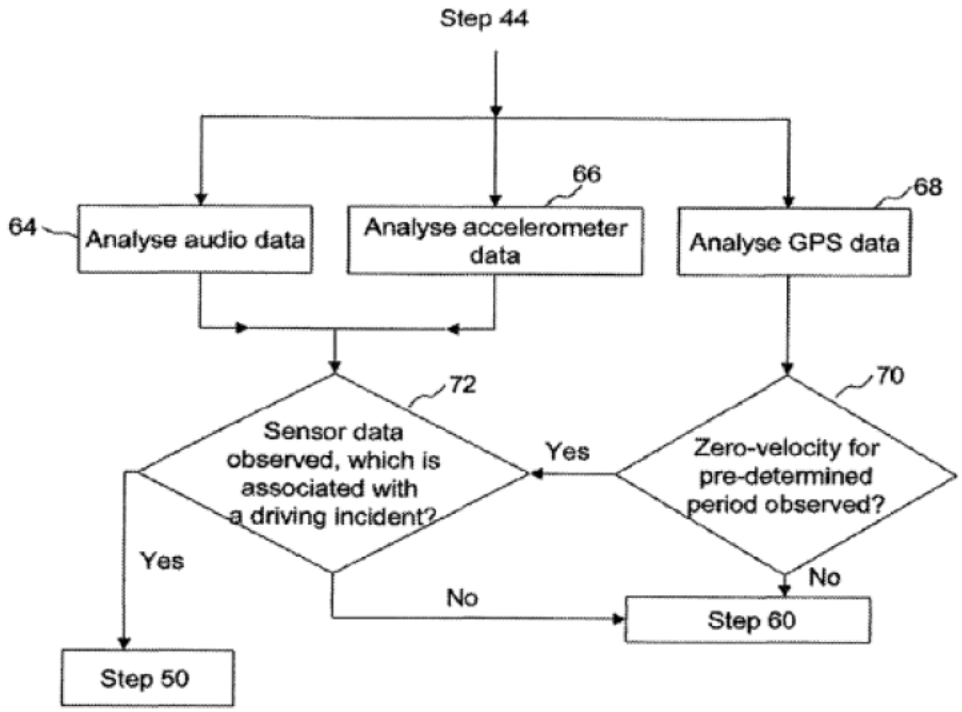

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Fig. 4a

| ’952 Patent, Claim 7 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| ’952 Patent, Claim 7 | | Prior Art |
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| | | 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.<br>Wright at 20:16-21:37:<br>FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 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.<br>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 |

| ’952 Patent, Claim 7 | | Prior Art |
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| | | incident, present within the captured audio data signal captured by the audio capture module 27.<br><br>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.<br><br>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:<br><br>Harsh braking—a deceleration of greater than 2.5 m/s2 or forward G-force of greater than 0.7 G for more than 400 msec.<br><br>Harsh acceleration—from stationary, an acceleration greater than 2.5 m/s2 or backward G-force of greater than 0.7 G for more than 800 msec.<br><br>Harsh swerving—lateral G-forces greater than 0.7 G for more than 400 msec.<br><br>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 |

| ’952 Patent, Claim 7 | | Prior Art |
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| | | during an initial configuration of the mobile telecommunications device, by indicating the type of vehicle the device is being used with.<br><br>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 FIG. 4a . If instead a driving incident is not detected, the telecommunications device proceeds with step 60 of FIG. 4 a.<br><br>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 FIG. 4a . This is a further example of a threshold condition, discussed previously.<br><br>Wright at 13:15-24:<br><br>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.<br><br>Wright at 20:16-59:<br><br>FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 4a ) in a preferred embodiment, where the mobile telecommunications device 17 is configured to sample audio data, accelerometer data, and |

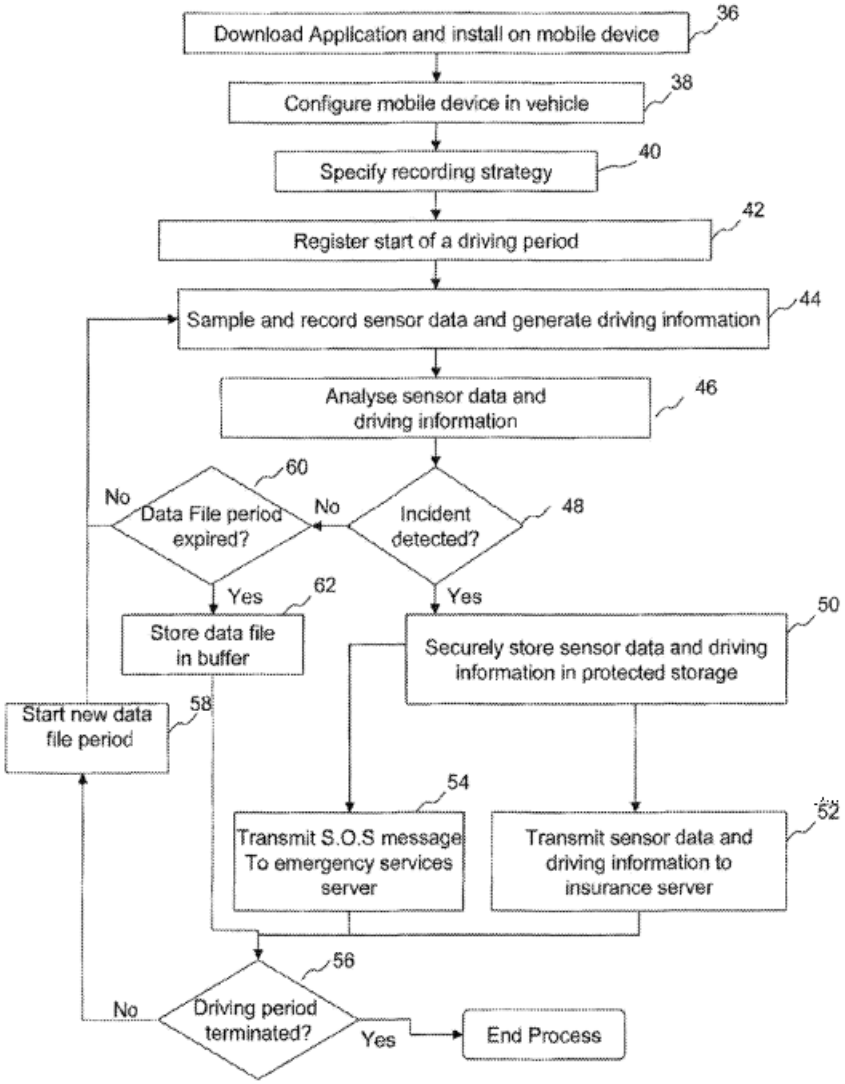
| ’952 Patent, Claim 7 | | Prior Art |
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| | | GPS data only. Each one of these types of data is analysed in turn, at steps 64, 66 and 68. The analysis may comprise comparing measured sensor data and/or derived driving information with a data model. 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.<br><br>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.<br><br>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. |

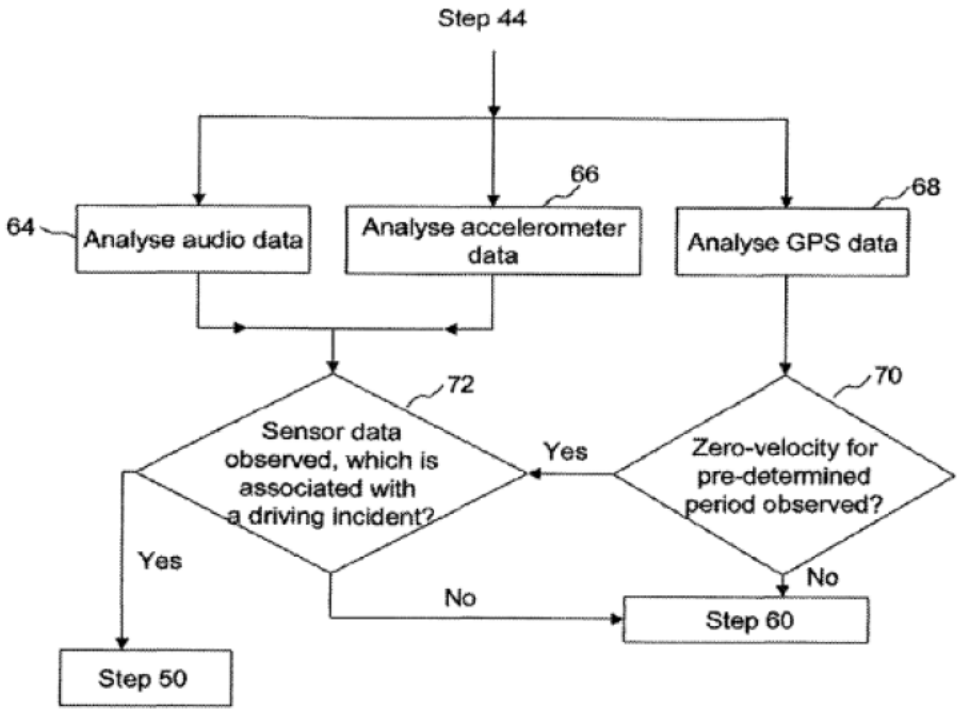
| ’952 Patent, Claim 7 | | Prior Art |
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| | | Wright at 18:55-19:8:<br><br>The processor module 33 determines if a driving incident has been detected, at step 48. This is determined on the basis of the analysis carried out at step 46. If a driving incident 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 34 b, at step 50.<br><br>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.<br><br>Wright at 119:9-28:<br><br>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 |

| '952 Patent, Claim 7 | | Prior Art |
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| | | 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.<br><br>*See also*, 1[d].<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 8 | | Prior Art |
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| **8.** | The method of claim 7, wherein said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, | Wright discloses and/or renders obvious that said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in |

| '952 Patent, Claim 8 | | Prior Art |
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| | electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of | temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof. *See, e.g.*:<br><br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

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| | surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position | <br>Fig. 4a |

| '952 Patent, Claim 8 | | Prior Art |
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| | in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof. | Wright at Fig. 4b:<br><br><br>Fig. 4b<br><br>Wright at 15:66-16:6:<br><br>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 |

| '952 Patent, Claim 8 | | Prior Art |
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| | | 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.<br><br>Wright at 20:16-59:<br><br>FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 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.<br><br>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. |

| '952 Patent, Claim 8 | | Prior Art |
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| | | 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.<br><br>*See also*, claim 2.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 9 | | Prior Art |
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| **9.** | The method of claim 8, wherein said detecting a first parameter comprises detecting a | Wright discloses and/or renders obvious that said detecting a first parameter comprises detecting a parameter associated with deployment of an airbag within the vehicle. *See, e.g.*:<br><br>Wright at 20:16-47 |

| '952 Patent, Claim 9 | | Prior Art |
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| | parameter associated with deployment of an airbag within the vehicle. | FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 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.<br><br>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.<br><br>*See also*, claim 3.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to |

| '952 Patent, Claim 9 | | Prior Art |
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| | | this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 10 | | Prior Art |
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| **10.** | The method of claim 8,<br><br>wherein said detecting a first parameter comprises detecting acceleration along a single axis, and<br><br>wherein said generating a first detector signal comprises generating the first detector signal when the detected | Wright discloses and/or renders obvious that said detecting a first parameter comprises detecting acceleration along a single axis, and wherein said generating a first detector signal comprises generating the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value. *See, e.g.*:<br><br>Wright at 8:7-20:<br><br>> 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.<br><br>Wright at 19:9-28: |

| '952 Patent, Claim 10 | | Prior Art |
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| | acceleration along the single axis is equal to or greater than a predetermined value. | 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.<br>Wright at 20:60-21:5:<br>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:<br>Harsh braking—a deceleration of greater than 2.5 m/s2 or forward G-force of greater than 0.7 G for more than 400 msec.<br>Harsh acceleration—from stationary, an acceleration greater than 2.5 m/s2 or backward G-force of greater than 0.7 G for more than 800 msec.<br>Harsh swerving—lateral G-forces greater than 0.7 G for more than 400 msec.<br>*See also*, claim 4. |

| '952 Patent, Claim 10 | | Prior Art |
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| | | Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 11 | | Prior Art |
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| **11.** | The method of claim 7, further comprising wirelessly communicating, via a communication component, with a network. | Wright discloses and/or renders obvious wirelessly communicating, via a communication component, with a network. *See, e.g.*:<br><br>Wright at 1:59-2:9:<br><br>Aspects of some exemplary implementations provides 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. |

| ’952 Patent, Claim 11 | | Prior Art |
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| | | Wright at 5:3-17:<br><br>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.<br><br>Wright at 6:28-49:<br><br>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.<br><br>Wright at 8:64-9:10: |

| '952 Patent, Claim 11 | | Prior Art |
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| | | 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.<br><br>Wright at 12:65-13:10:<br><br>FIG. 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.<br><br>*See also*, claim 5.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 12 | | Prior Art |
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| **12.** | The method of claim 7, further comprising:<br><br>operating an operating component in a first mode; and<br><br>switching operation of the operating component from the first mode to a second mode based on the crash mode signal. | Wright discloses and/or renders obvious operating an operating component in a first mode; and switching operation of the operating component from the first mode to a second mode based on the crash mode signal. *See, e.g.*:<br><br>Wright at 3:12-54:<br><br>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.<br><br>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 kilometers 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 |

| '952 Patent, Claim 12 | | Prior Art |
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| | | 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.<br>Wright at 5:3-17:<br>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.<br>Wright at 6:28-49:<br>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 |

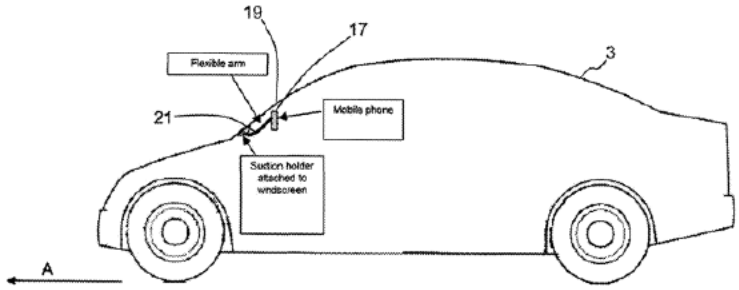
| '952 Patent, Claim 12 | | Prior Art |
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| | | the occurrence of a crash, and also the location of the mobile device (and so the vehicle) are also included in the transmitted information. A further advantage of transmitting driving information and/or 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.<br>Wright at 11:11-51:<br>According to a fourth aspect of the present disclosure 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. |

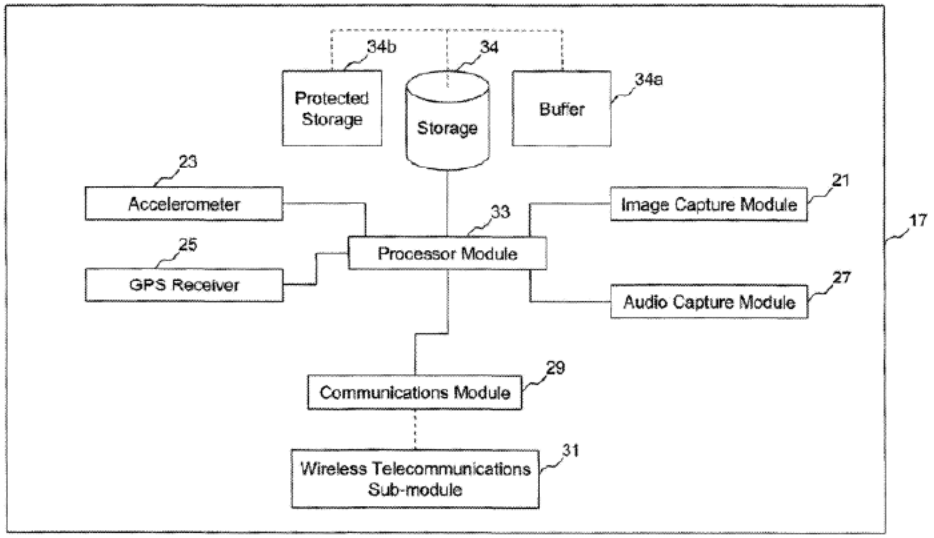
| ’952 Patent, Claim 12 | | Prior Art |
|---|---|---|
| | | According to a fifth aspect of the present disclosure there is provided a method of logging driving information associated with a vehicle when driven, the method comprising: adapting and installing a mobile device to the vehicle, the mobile 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.<br>Wright at 18:30-60:<br>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 kilometers per hour is detected.<br>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.<br>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. |

| '952 Patent, Claim 12 | | Prior Art |
|---|---|---|
| | | 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 34 b, at step 50.<br><br>*See also*, claim 6.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| **13[pre]** | A non-transitory, computer-readable media having computer-readable instructions stored thereon, for use with a vehicle, the computer- | CMT does not concede that the preamble is limiting. To the extent it is limiting, Wright discloses and/or renders obvious a non-transitory, computer-readable media having computer-readable instructions stored thereon, for use with a vehicle, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method. *See, e.g.*:<br><br>Wright at Abstract:<br><br>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 |

| '952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method comprising: | 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.<br>Wright at 12:65-13:4:<br>FIG. 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.<br>Wright at 12:38-39:<br>FIG. 2 is an illustration of the automobile of FIG. 1 configured with a mobile device in accordance various embodiments of the present disclosure: |

| ’952 Patent, Claim 13 | | Prior Art |
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| | | <br>Fig .2<br>FIG. 3 is a schematic illustration of the functional components of the mobile device of FIG. 2; |

| '952 Patent, Claim 13 | | Prior Art |
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| | | <br>Fig .3<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **13[a]** | detecting, via a mode-determining component, whether the mode- | Wright discloses and/or renders obvious detecting, via a mode-determining component, whether the mode-determining component is in the vehicle. *See, e.g.*:<br><br>Wright at 3:25-54: |

| '952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | determining component is in the vehicle; | 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 kilometers 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.<br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

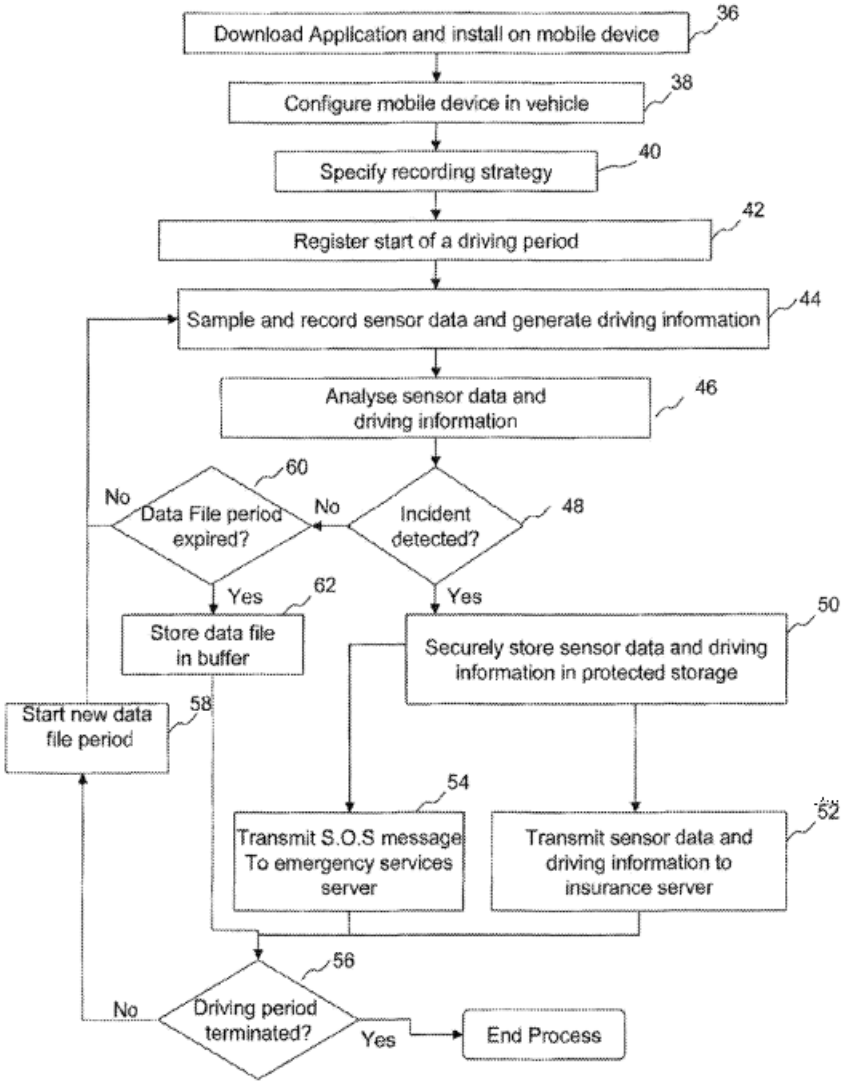
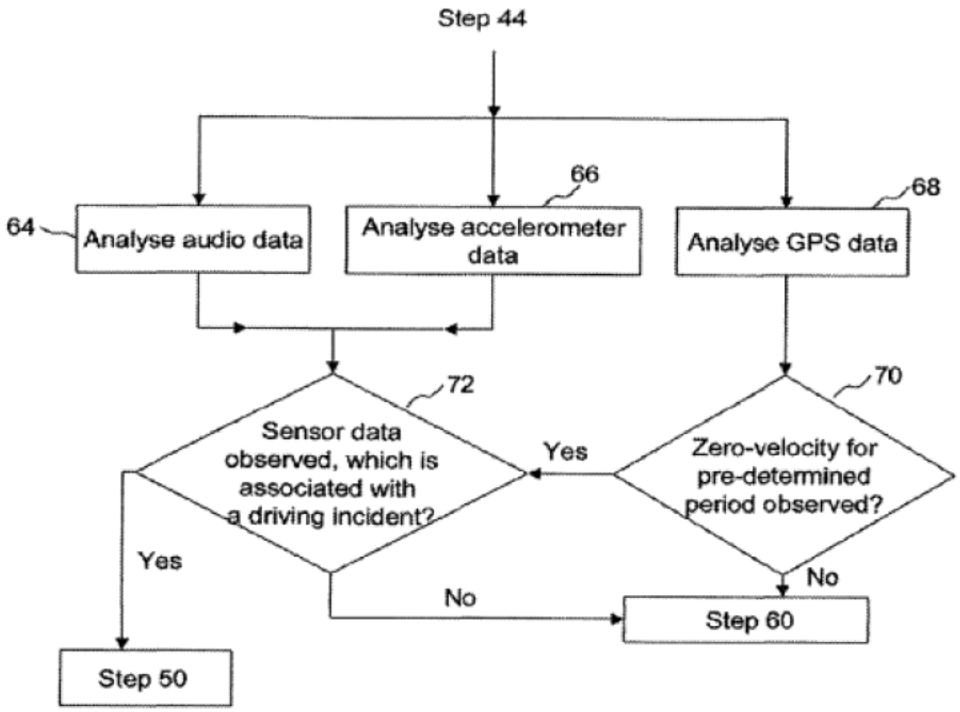

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Data File period expired?
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Incident detected?
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62
Yes
Store data file in buffer
50
Securely store sensor data and driving information in protected storage
Start new data file period
58
54
Transmit S.O.S message To emergency services server
52
Transmit sensor data and driving information to insurance server
56
No
Driving period terminated?
Yes
End Process

Fig. 4a

| '952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| '952 Patent, Claim 13 | | Prior Art |
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| | | 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.<br><br>Wright at 18:30-58:<br><br>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 kilometers per hour is detected.<br><br>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.<br><br>*See also*, 1[a], 7[a], 7[b].<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| **13[b]** | generating, via the mode-determining component, an in-vehicle signal; | Wright discloses and/or renders obvious generating, via the mode-determining component, an in-vehicle signal. *See, e.g.*:<br><br>Wright at 3:25-54:<br><br>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 kilometers 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.<br><br>Wright at 12:43-47:<br><br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3: |

| ’952 Patent, Claim 13 | | Prior Art |
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| | | FIG. 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 disclosure<br>Wright at Fig. 4a: |

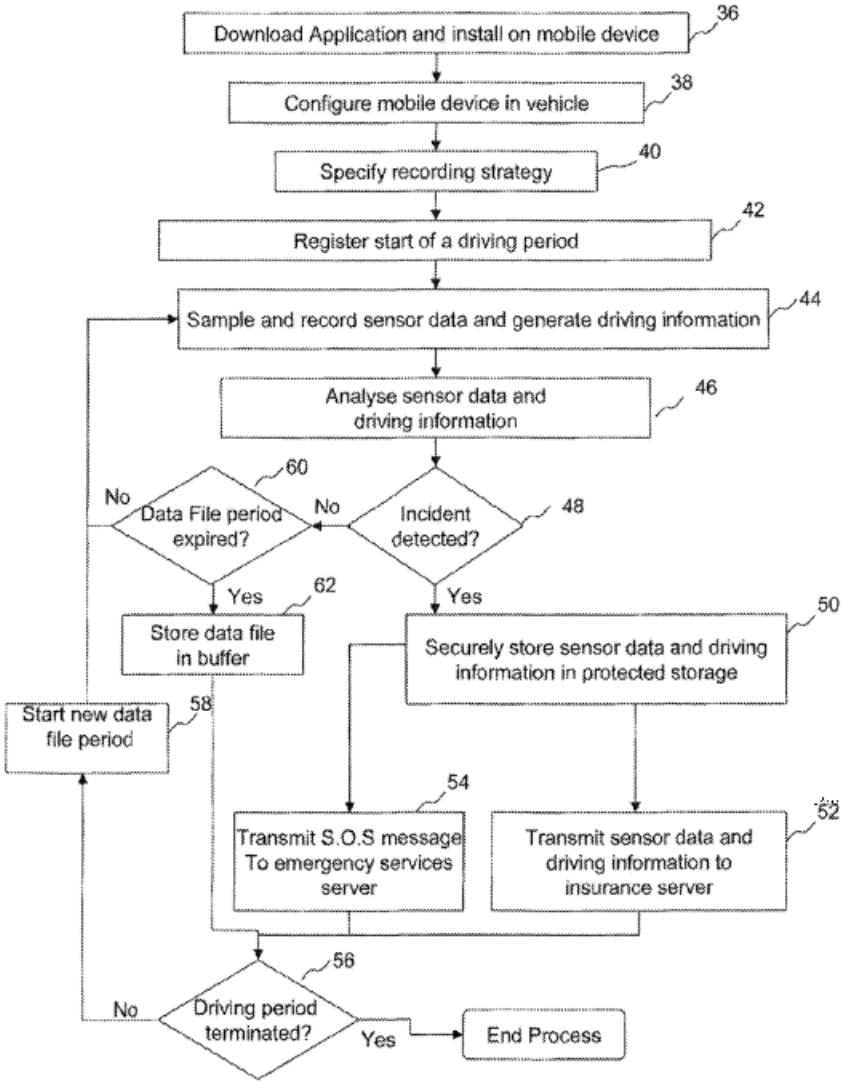
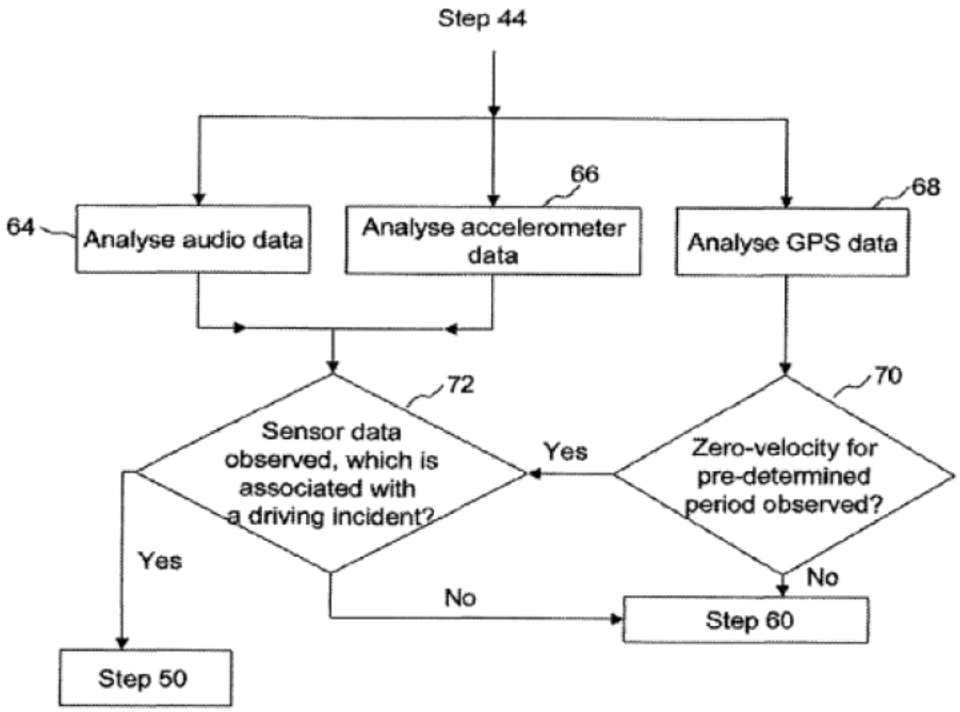

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Securely store sensor data and driving information in protected storage
Start new data file period
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52
Transmit S.O.S message To emergency services server
Transmit sensor data and driving information to insurance server
56
No
Driving period terminated?
Yes
End Process

Fig. 4a

| ’952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| '952 Patent, Claim 13 | | Prior Art |
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| | | 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.<br><br>Wright at 18:30-58:<br><br>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 kilometers per hour is detected.<br><br>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.<br><br>*See also*, 1[a], 7[a], 7[b], 13[a].<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| **13[c]** | detecting, via a first detecting component, a first parameter; | Wright discloses and/or renders obvious detecting, via a first detecting component, a first parameter. *See, e.g.*:<br><br>Wright at 3:25-54:<br><br>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 kilometers 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.<br><br>Wright at 12:43-47:<br><br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3: |

| ’952 Patent, Claim 13 | | Prior Art |
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| | | FIG. 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 disclosure<br>Wright at Fig. 4a: |

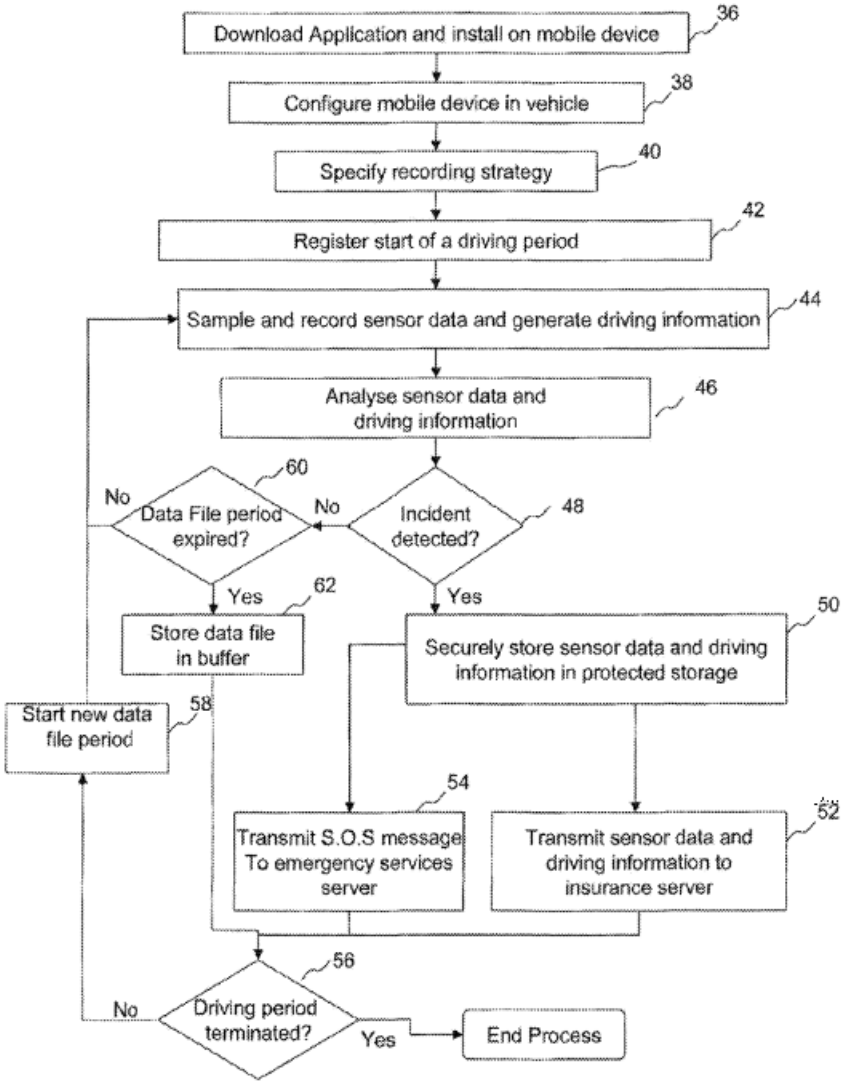
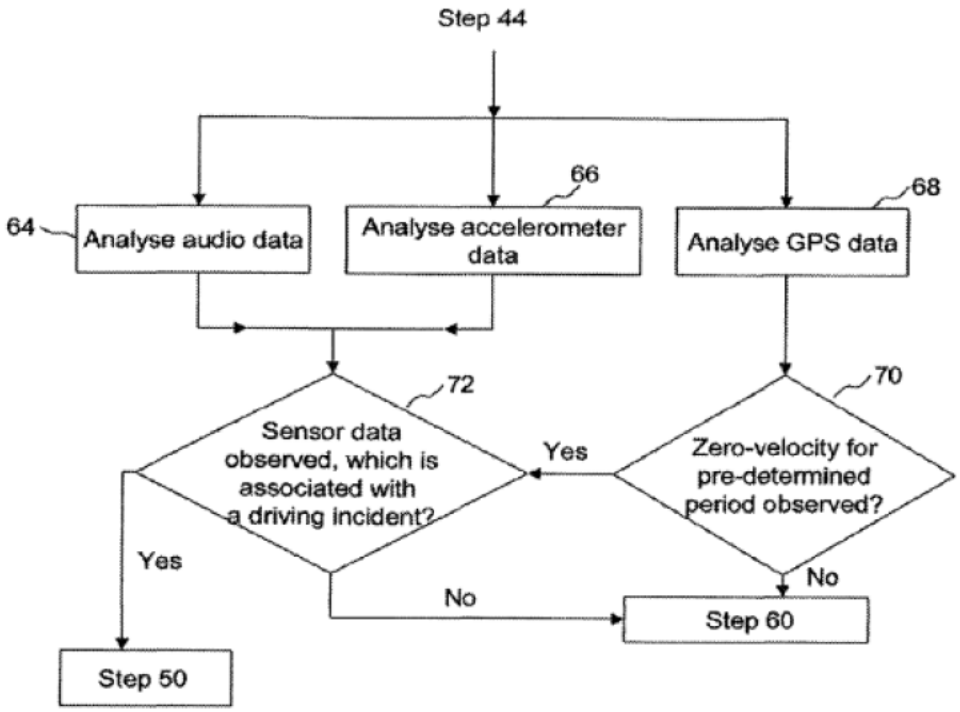

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Transmit S.O.S message To emergency services server
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No
Driving period terminated?
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End Process

Fig. 4a

| '952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

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| | | 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.<br><br>Wright at 18:30-58:<br><br>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 kilometers per hour is detected.<br><br>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.<br><br>*See also*, 1[b], 7[c], 7[d].<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| **13[d]** | generating, via the first detecting component, a first detector signal based on the first detected parameter; | Wright discloses and/or renders obvious generating, via the first detecting component, a first detector signal based on the first detected parameter. *See, e.g.*:<br><br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

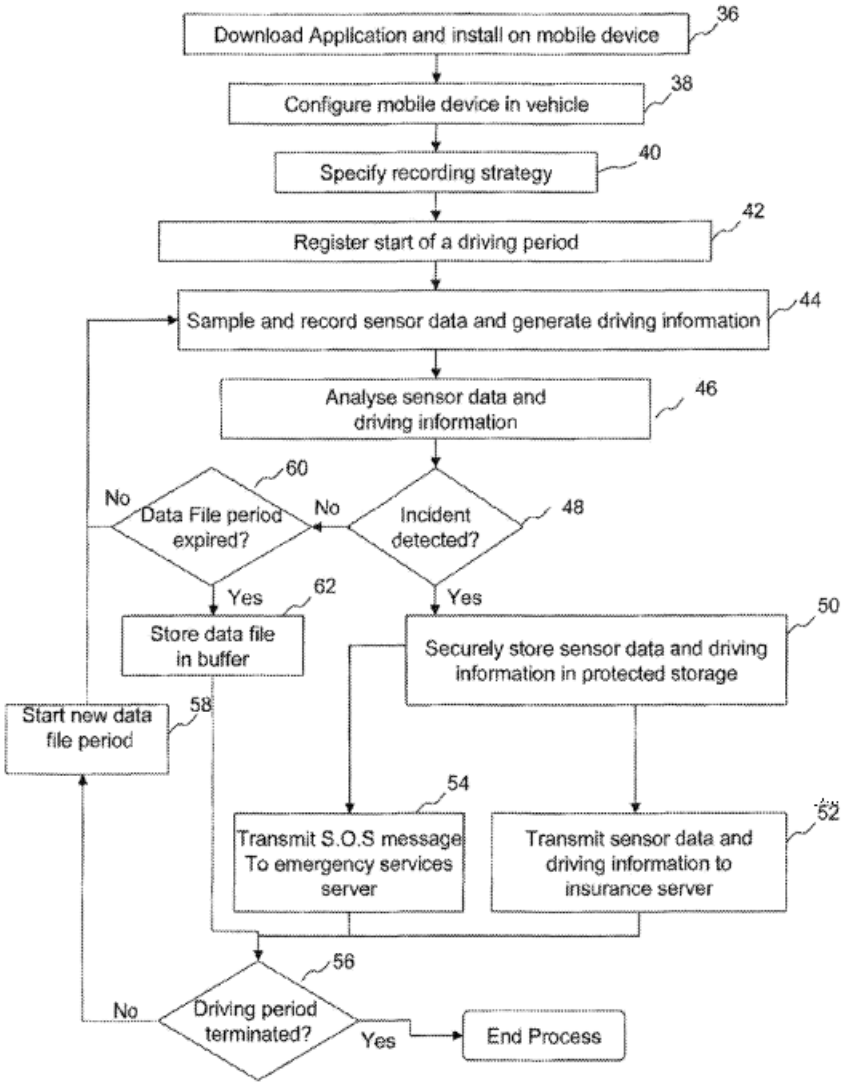
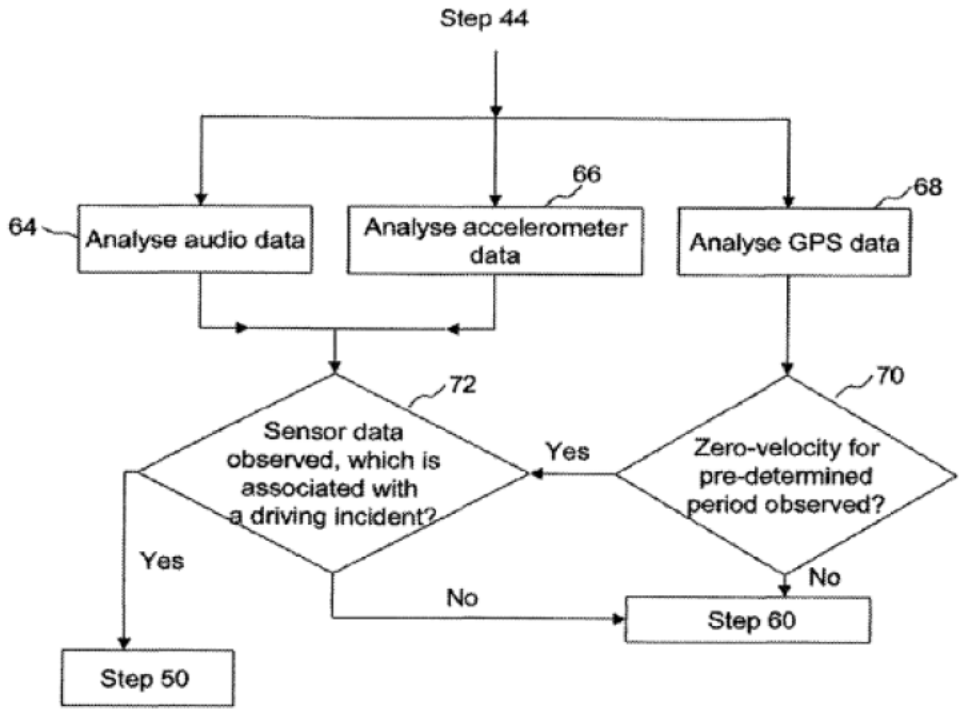

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Driving period terminated?
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Fig. 4a

| ’952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| ’952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | 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.<br>Wright at 15:38-45:<br>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.<br>Wright at 15:57-65:<br>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.<br>Wright at 15:66-16:6:<br>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. |

| '952 Patent, Claim 13 | | Prior Art |
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| | | *See also*, 1[b], 7[c], 7[d], 13[c].<br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **13[e]** | detecting, via a second detecting component, a second parameter; | Wright discloses and/or renders obvious detecting, via a second detecting component, a second parameter. *See, e.g.*:<br><br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

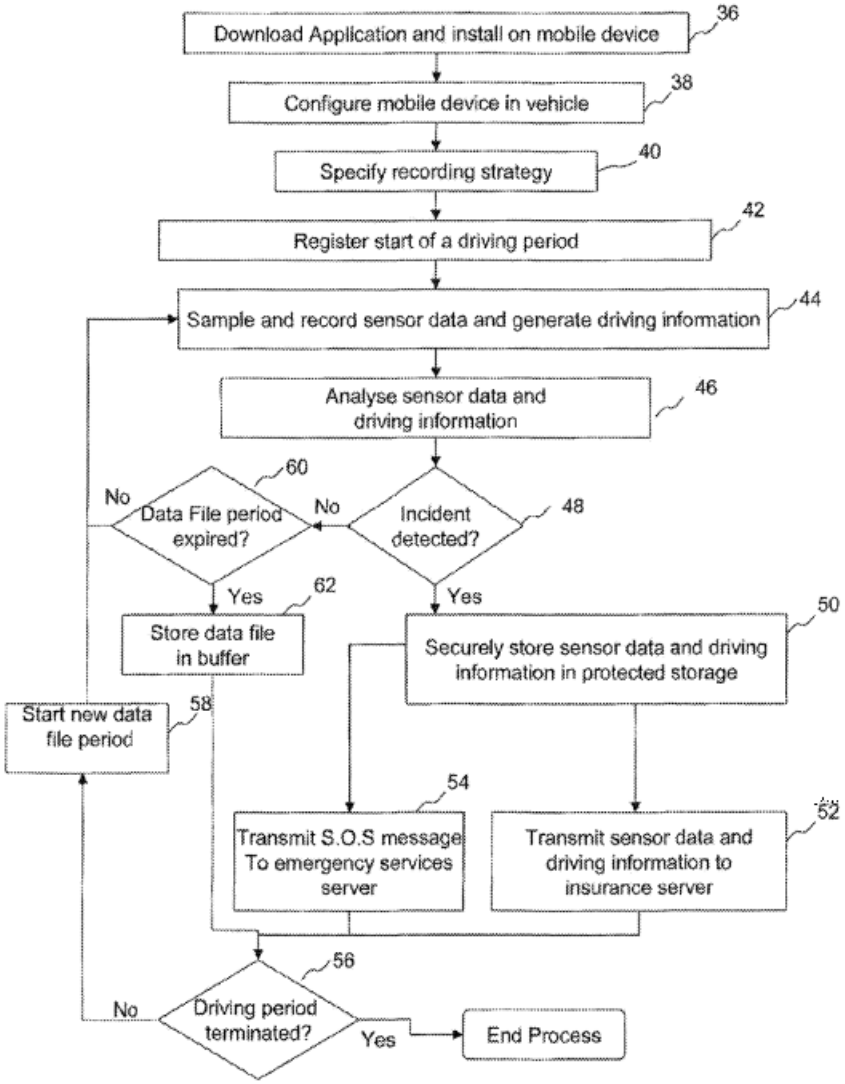
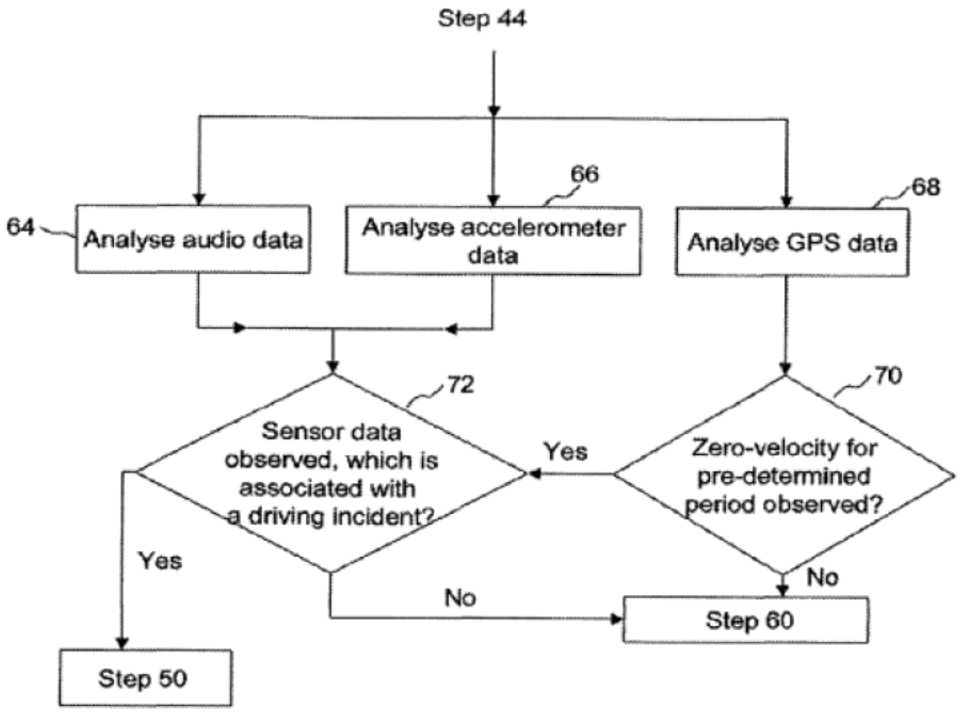

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58
54
Transmit S.O.S message To emergency services server
Transmit sensor data and driving information to insurance server
52
56
No
Driving period terminated?
Yes
End Process

Fig. 4a

| ’952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| ’952 Patent, Claim 13 | | Prior Art |
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| | | 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.<br>Wright at 15:38-45:<br>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.<br>Wright at 15:57-65:<br>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.<br>Wright at 15:66-16:6:<br>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. |

| '952 Patent, Claim 13 | | Prior Art |
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| | | *See also*, 1[c], 7[e], 7[f].<br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **13[f]** | generating, via the second detecting component, a second detector signal based on the second detected parameter; | Wright discloses and/or renders obvious generating, via the second detecting component, a second detector signal based on the second detected parameter. *See, e.g.*:<br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

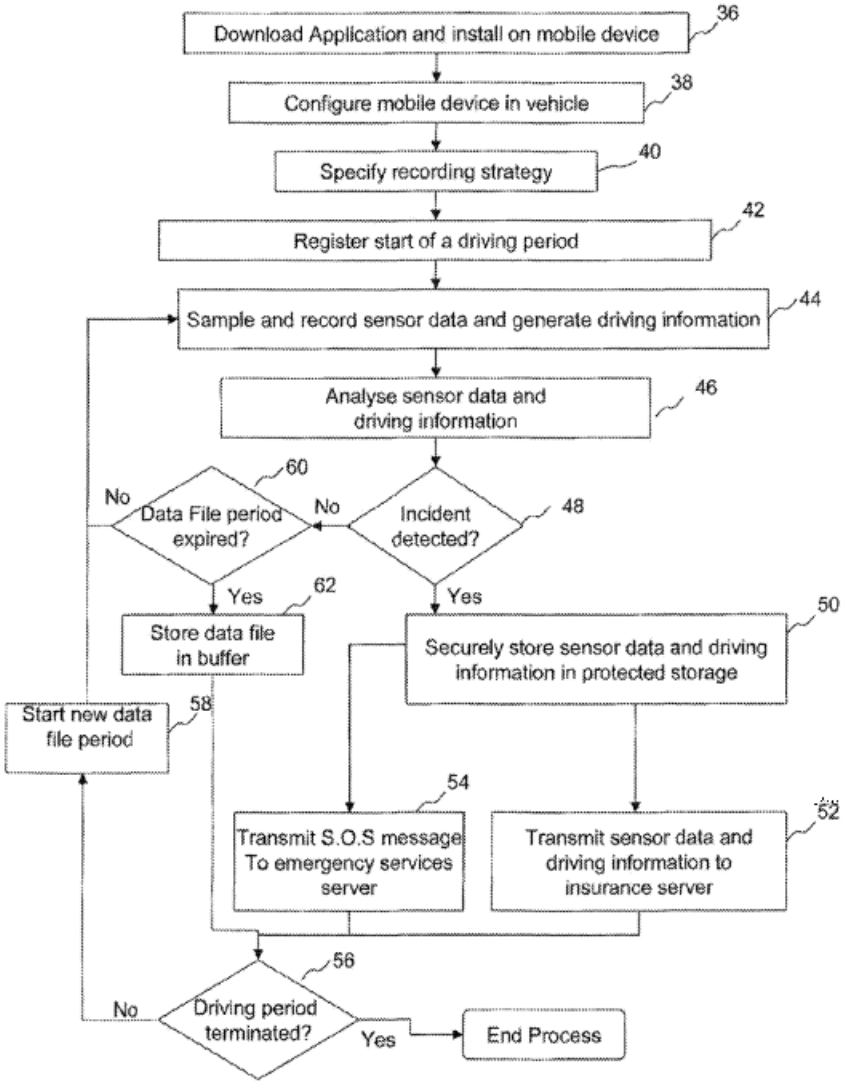
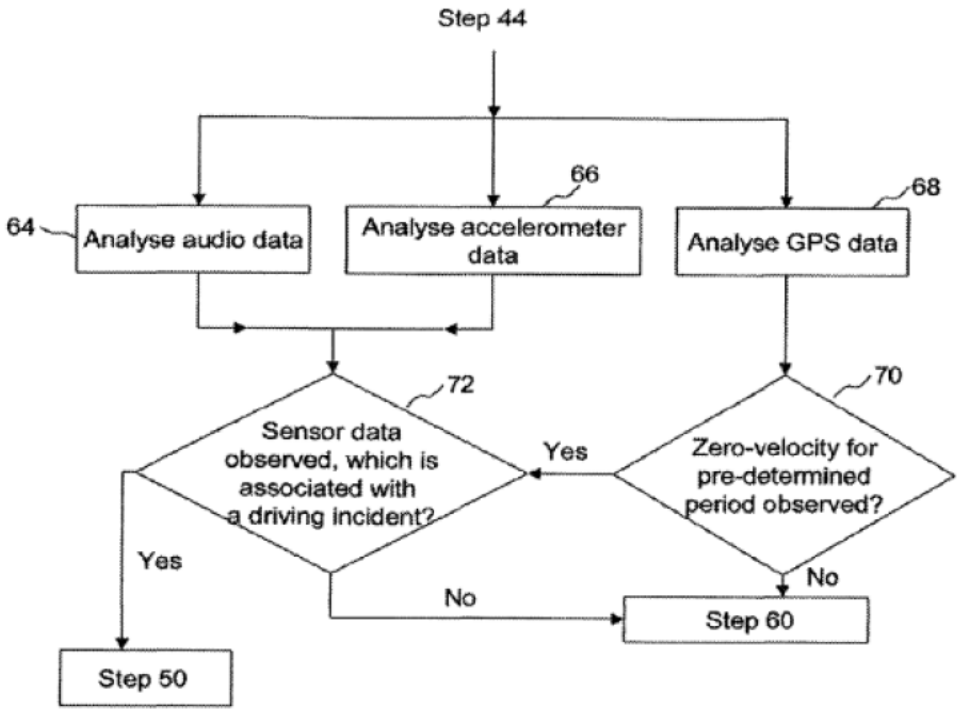

Download Application and install on mobile device
36
Configure mobile device in vehicle
38
Specify recording strategy
40
Register start of a driving period
42
Sample and record sensor data and generate driving information
44
Analyse sensor data and driving information
46
60
No
Data File period expired?
No
Incident detected?
48
Yes
62
Yes
Store data file in buffer
50
Securely store sensor data and driving information in protected storage
Start new data file period
58
54
Transmit S.O.S message To emergency services server
52
Transmit sensor data and driving information to insurance server
56
No
Driving period terminated?
Yes
End Process

Fig. 4a

| ’952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| ’952 Patent, Claim 13 | | Prior Art |
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| | | 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.<br>Wright at 15:38-45:<br>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.<br>Wright at 15:57-65:<br>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.<br>Wright at 15:66-16:6:<br>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. |

| '952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | *See also*, 1[c], 7[e], 7[f], 13[e].<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **13[g]** | operating an operating component in a first mode; | Wright discloses and/or renders obvious operating an operating component in a first mode. *See, e.g.*:<br><br>Wright at 3:12-54:<br><br>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.<br><br>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 kilometers per hour—then this can be used to trigger the start of the driving period. Similarly, if the sensor data reflects that the mobile |

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| | | 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.<br><br>*See also*, claim 6.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **13[h]** | generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the | Wright discloses and/or renders obvious generating, via the mode-determining component, a crash mode signal based on the in-vehicle signal, the first detector signal and the second detector signal. *See, e.g.*:<br><br>Wright at 12:43-47:<br><br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3: |

| ’952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | second detector signal; and | FIG. 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 disclosure<br>Wright at Fig. 4a: |

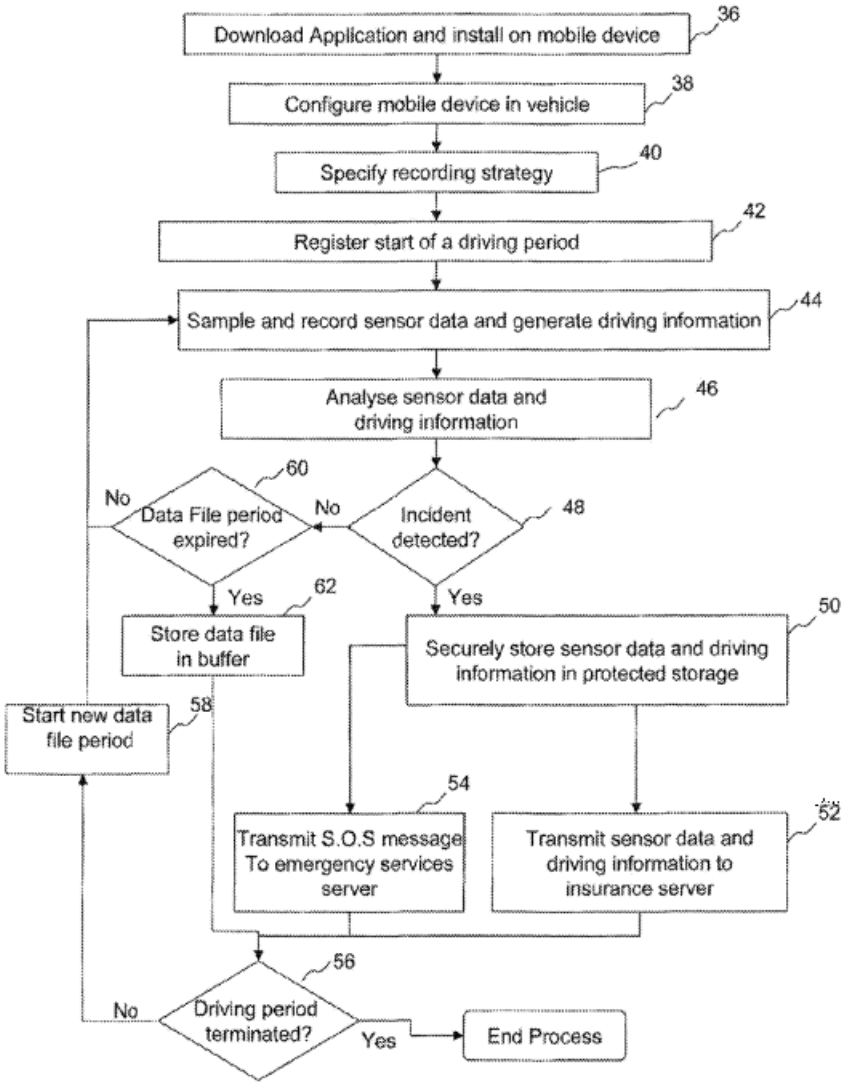
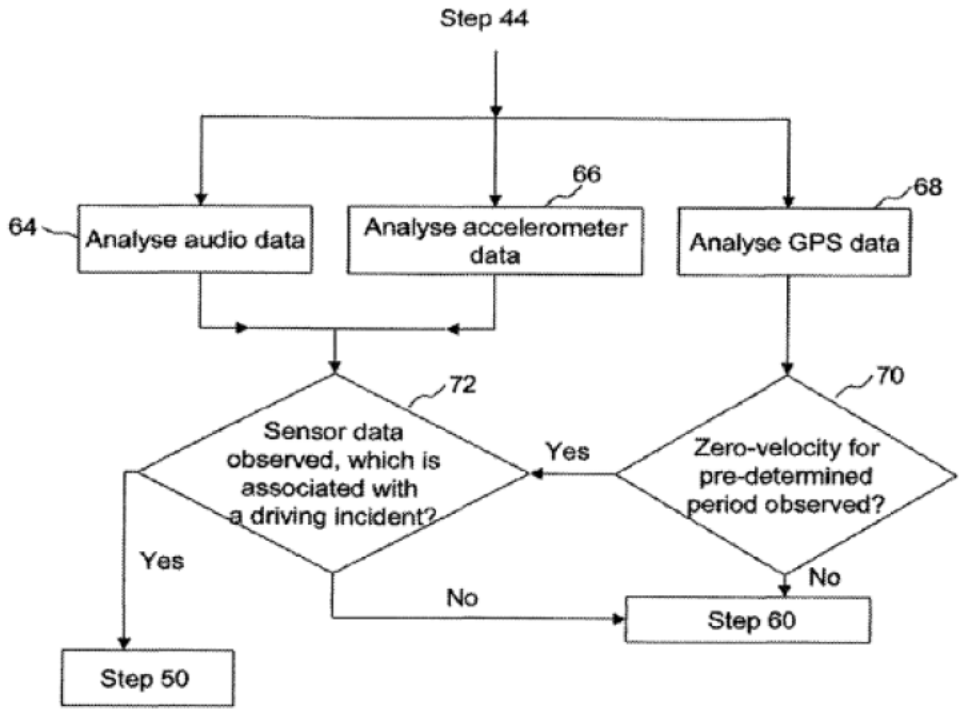

Download Application and install on mobile device
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Specify recording strategy
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Register start of a driving period
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44
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50
Securely store sensor data and driving information in protected storage
Start new data file period
58
54
Transmit S.O.S message To emergency services server
Transmit sensor data and driving information to insurance server
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56
No
Driving period terminated?
Yes
End Process

Fig. 4a

| ’952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | Wright at Fig. 4b:<br><br><br>Fig. 4b<br>Wright at 18:8-20:<br>FIG. 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 FIG. 1, onto the mobile telecommunications device 17, at step 36, as previously described. This may be |

| ’952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | 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.<br>Wright at 20:16-21:37:<br>FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 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.<br>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 |

| ’952 Patent, Claim 13 | | Prior Art |
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| | | incident, present within the captured audio data signal captured by the audio capture module 27.<br><br>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.<br><br>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:<br><br>Harsh braking—a deceleration of greater than 2.5 m/s2 or forward G-force of greater than 0.7 G for more than 400 msec.<br><br>Harsh acceleration—from stationary, an acceleration greater than 2.5 m/s2 or backward G-force of greater than 0.7 G for more than 800 msec.<br><br>Harsh swerving—lateral G-forces greater than 0.7 G for more than 400 msec.<br><br>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 |

| ’952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | during an initial configuration of the mobile telecommunications device, by indicating the type of vehicle the device is being used with.<br><br>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 FIG. 4a . If instead a driving incident is not detected, the telecommunications device proceeds with step 60 of FIG. 4 a.<br><br>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 FIG. 4a . This is a further example of a threshold condition, discussed previously.<br><br>Wright at 13:15-24:<br><br>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.<br><br>Wright at 20:16-59:<br><br>FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 4a ) in a preferred embodiment, where the mobile telecommunications device 17 is configured to sample audio data, accelerometer data, and |

| ’952 Patent, Claim 13 | | Prior Art |
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| | | 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.<br><br>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.<br><br>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. |

| '952 Patent, Claim 13 | | Prior Art |
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| | | Wright at 18:55-19:8:<br><br>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 34 b, at step 50.<br><br>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.<br><br>Wright at 119:9-28:<br><br>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 |

| '952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | 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.<br><br>*See also*, 1[d], 7[g].<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |
| **13[i]** | switching operation of the operating component from the first mode to a second mode based on the crash mode signal. | Wright discloses and/or renders obvious switching operation of the operating component from the first mode to a second mode based on the crash mode signal. *See, e.g.*:<br><br>Wright at 3:12-54:<br><br>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.<br><br>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 |

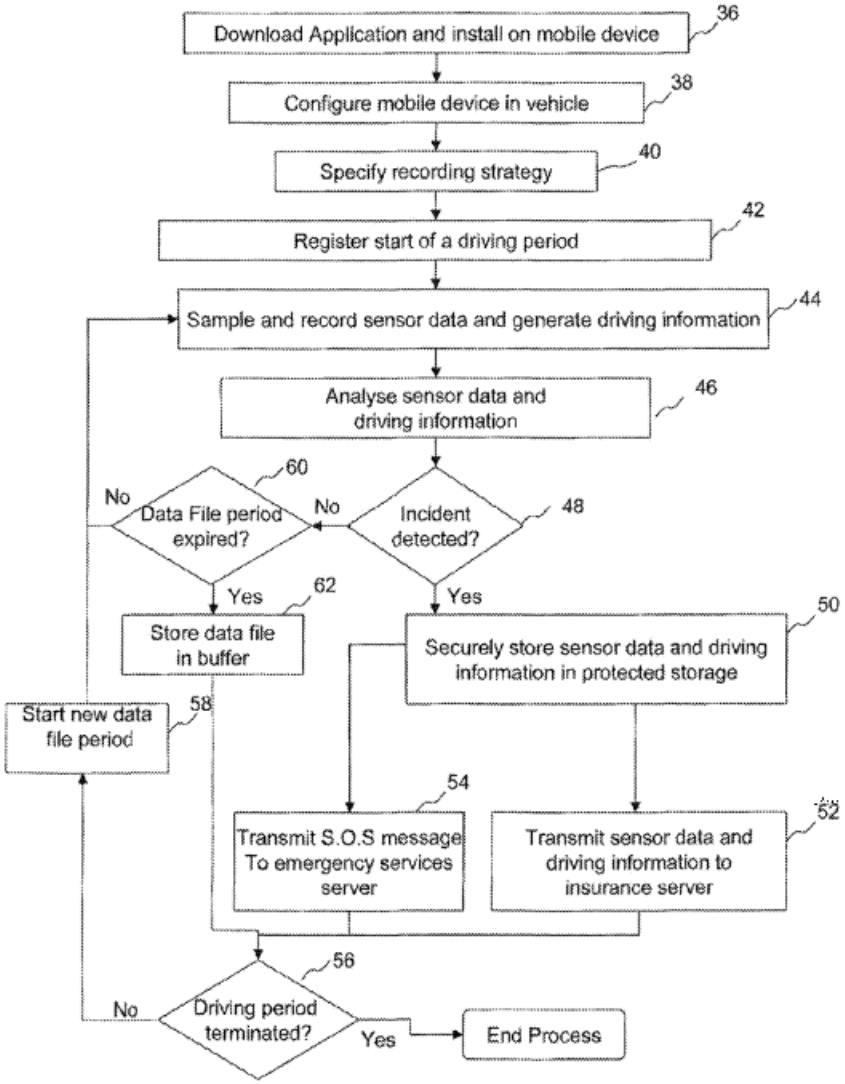
| '952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | the mobile device. The initialisation input may also or instead be generated automatically in response to the mobile device being installed to the vehicle and/or the vehicle being driven. The initialisation input may be generated automatically 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 kilometers 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.<br>Wright at 5:3-17:<br>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. |

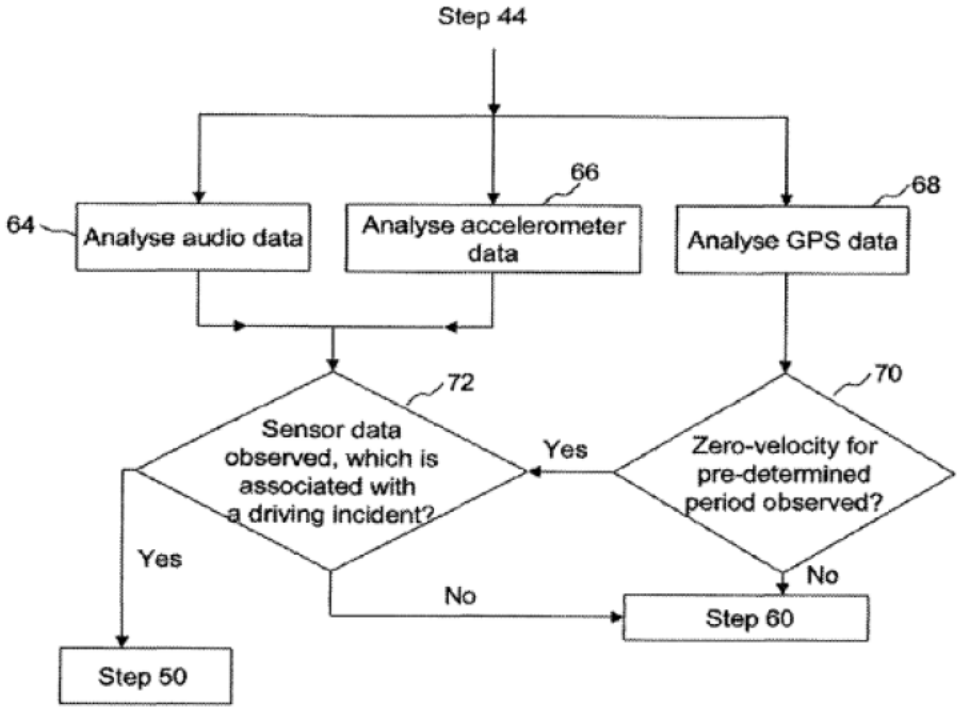
| ’952 Patent, Claim 13 | | Prior Art |
|---|---|---|
| | | Wright at 6:28-49:<br><br>Once a predetermined event has been detected by the event detector, it is desirable to take an appropriate action in response to that detected event. Accordingly, the executed application may be arranged to control 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.<br><br>Wright at 11:11-51:<br><br>According to a fourth aspect of the present disclosure 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 |

| ’952 Patent, Claim 13 | | Prior Art |
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| | | 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.<br><br>According to a fifth aspect of the present disclosure 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.<br><br>Wright at 18:30-60:<br><br>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 kilometers per hour is detected. |

| '952 Patent, Claim 13 | | Prior Art |
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| | | 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.<br><br>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.<br><br>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 34 b, at step 50.<br><br>*See also*, claim 6, 13[g].<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 14 | | Prior Art |
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| **14.** | The non-transitory, computer-readable media of claim 13, wherein the computer-readable instructions are capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, | Wright discloses and/or renders obvious that the computer-readable instructions are capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting one of the group consisting of magnetic fields in any of three dimensions, electric fields in any of three dimensions, electro-magnetic fields in any of three dimensions, velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof. *See, e.g.*:<br><br>Wright at 12:43-47:<br>FIG. 4a is a process flow chart, illustrating method steps executable by the mobile device of FIGS. 2 and 3:<br>FIG. 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 disclosure<br>Wright at Fig. 4a: |

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| | velocity in any of three dimensions, acceleration in any of three dimensions, angular velocity in any of three dimensions, angular acceleration in any of three dimensions, geodetic position, sound, temperature, vibrations in any of three dimensions, pressure in any of three dimensions, biometrics, contents of surrounding atmosphere, a change in electric fields in any of three dimensions, a change in magnetic fields in any of three | <br>Fig. 4a |

| '952 Patent, Claim 14 | | Prior Art |
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| | dimensions, a change in electro-magnetic fields in any of three dimensions, a change in velocity in any of three dimensions, a change in acceleration in any of three dimensions, a change in angular velocity in any of three dimensions, a change in angular acceleration in any of three dimensions, a change in geodetic position in any of three dimensions, a change in sound, a change in temperature, a change in | Wright at Fig. 4b:<br><br><br>Fig. 4b<br><br>Wright at 15:66-16:6:<br><br>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 |

| ’952 Patent, Claim 14 | | Prior Art |
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| | vibrations in any of three dimensions, a change in pressure in any of three dimensions, a change in biometrics, a change in contents of surrounding atmosphere and combinations thereof. | 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.<br><br>Wright at 20:16-59:<br><br>FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 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.<br><br>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. |

| '952 Patent, Claim 14 | | Prior Art |
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| | | 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.<br><br>*See also*, claims 2, 8.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 15 | | Prior Art |
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| **15.** | The non-transitory, computer-readable media of claim 14, the computer- | Wright discloses and/or renders obvious the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting a parameter associated with deployment of an airbag within the vehicle. *See, e.g.*: |

| '952 Patent, Claim 15 | | Prior Art |
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| | readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting a parameter associated with deployment of an airbag within the vehicle. | Wright at 20:16-47<br><br>FIG. 4b provides more detail regarding how a driving incident may be automatically detected (i.e. steps 46 and 48 of FIG. 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.<br><br>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.<br><br>*See also*, claims 3, 9. |

| '952 Patent, Claim 15 | | Prior Art |
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| | | Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 16 | | Prior Art |
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| **16.** | The non-transitory, computer-readable media of claim 14, wherein the computer-readable instructions are capable of instructing the computer to perform the method such that<br><br>said detecting a first parameter comprises detecting | Wright discloses and/or renders obvious that the computer-readable instructions are capable of instructing the computer to perform the method such that said detecting a first parameter comprises detecting acceleration along a single axis, and said generating a first detector signal comprises generating the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value. *See, e.g.*:<br><br>Wright at 8:7-20:<br><br>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 |

| '952 Patent, Claim 16 | | Prior Art |
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| | acceleration along a single axis, and<br><br>said generating a first detector signal comprises generating the first detector signal when the detected acceleration along the single axis is equal to or greater than a predetermined value. | particularly important to determine an event such as heavy braking of the vehicle and/or a crash.<br><br>Wright at 19:9-28:<br><br>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.<br><br>Wright at 20:60-21:5:<br><br>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:<br><br>Harsh braking—a deceleration of greater than 2.5 m/s2 or forward G-force of greater than 0.7 G for more than 400 msec.<br><br>Harsh acceleration—from stationary, an acceleration greater than 2.5 m/s2 or backward G-force of greater than 0.7 G for more than 800 msec.<br><br>Harsh swerving—lateral G-forces greater than 0.7 G for more than 400 msec. |

| '952 Patent, Claim 16 | | Prior Art |
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| | | *See also*, claims 4, 10.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 17 | | Prior Art |
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| **17.** | The non-transitory, computer-readable media of claim 13, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to | Wright discloses and/or renders obvious the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method further comprising wirelessly communicating, via a communication component, with a network. *See, e.g.*:<br><br>Wright at 1:59-2:9:<br><br>Aspects of some exemplary implementations provides 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 |

| '952 Patent, Claim 17 | | Prior Art |
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| | perform the method further comprising wirelessly communicating, via a communication component, with a network. | 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.<br><br>Wright at 5:3-17:<br><br>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.<br><br>Wright at 6:28-49:<br><br>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 |

| '952 Patent, Claim 17 | | Prior Art |
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| | | 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.<br><br>Wright at 8:64-9:10:<br><br>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.<br><br>Wright at 12:65-13:10:<br><br>FIG. 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.<br><br>*See also*, claims 5, 11. |

| '952 Patent, Claim 17 | | Prior Art |
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| | | Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |

| '952 Patent, Claim 18 | | Prior Art |
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| **18.** | The non-transitory, computer-readable media of claim 13, the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method further comprising: | Wright discloses and/or renders obvious the computer-readable instructions being capable of being read by a computer and being capable of instructing the computer to perform the method further comprising: operating an operating component in a first mode; and switching operation of the operating component from the first mode to a second mode based on the crash mode signal. *See, e.g.*:<br><br>Wright at 3:12-54:<br><br>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.<br><br>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 |

| ’952 Patent, Claim 18 | | Prior Art |
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| | operating an operating component in a first mode; and<br><br>switching operation of the operating component from the first mode to a second mode based on the crash mode signal. | 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 kilometers 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.<br><br>Wright at 5:3-17:<br><br>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. |

| '952 Patent, Claim 18 | | Prior Art |
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| | | Wright at 6:28-49:<br><br>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.<br><br>Wright at 11:11-51:<br><br>According to a fourth aspect of the present disclosure 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 |

| ’952 Patent, Claim 18 | | Prior Art |
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| | | 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.<br><br>According to a fifth aspect of the present disclosure 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.<br><br>Wright at 18:30-60:<br><br>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 kilometers per hour is detected. |

| '952 Patent, Claim 18 | | Prior Art |
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| | | 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.<br><br>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.<br><br>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 34 b, at step 50.<br><br>*See also*, claims 6, 12.<br><br>Furthermore, this limitation would have been obvious in light of Wright alone or in combination with the knowledge of a POSITA and/or the references identified in Exhibits A-01 through A-19 relating to this limitation. CMT's Invalidity Contentions describe the motivations to combine Wright and those references. |