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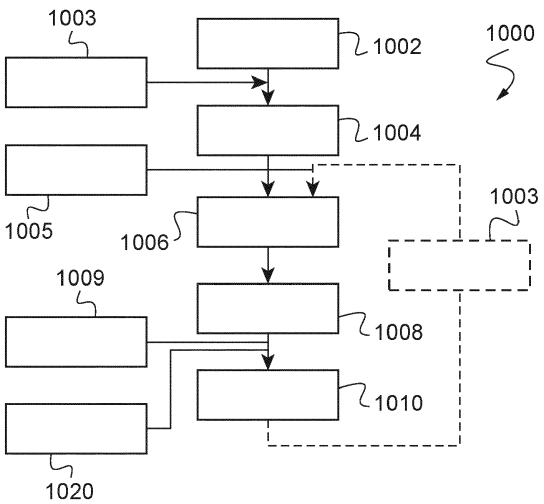
(54) METHOD FOR TRANSMITTING DATA TO A REMOTE DEVICE DURING AN EMERGENCY CALL, COMPUTER PROGRAM AND ON-BOARD DEVICE

(57) Method for transmitting data to a remote device during an emergency call using an on-board device comprised in a vehicle in which there is at least one occupant, said method (1000) comprising the following steps:
- detecting (1006) an input on a man-machine interface;
- selecting (1008) pre-recorded response data recorded in a memory of the on-board device depending on the input;
- transmitting (1010) data corresponding to the pre-recorded response data to the remote device via at least one wireless telecommunications network.

A corresponding computer program and an on-board device are also proposed.

Fig.3



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Description

TECHNICAL FIELD OF THE INVENTION

[0001] The invention belongs to the technical field of identification of vehicle situations, in particular emergency situations.

[0002] It relates specially to a method for transmitting data to a remote device during an emergency call using an on-board device comprised in a vehicle.

[0003] It also relates to a computer program and on-board device programmed to implement a method for transmitting data to the remote device.

BACKGROUND INFORMATION AND PRIOR ART

[0004] The eCall system (for *"emergency Call"*) in a vehicle is a system that can establish a communication with emergency services automatically or manually if the vehicle is involved in an incident or an accident. This communication to the emergency services transmits location information and can also include details e.g., on whether the vehicle's airbags have been deployed. This communication aims at determining the level of emergency regarding the vehicle and its passengers.

[0005] A method to assess the emergency level is to evaluate the situation inside the passenger compartment. Typically, data are exchanged between the eCall system comprised in the vehicle and a device of an emergency center.

[0006] To this end, it is known methods for transmitting data to a remote device during an emergency call. In this method a phone call is made between an occupant of the vehicle and the device of the emergency call center to determine the situation, typically the state of the occupant, the position of the vehicle, the situation, etc. However, in these methods, the occupant needs to speak and therefore the data transmitted to the emergency center corresponds to the words of the occupant. However, in some case, the occupant is not able to speak.

SUMMARY OF THE INVENTION

[0007] Therefore one object of the invention is to provide a method for transmitting data to a remote device during an emergency call using an on-board device comprised in a vehicle in which there is at least one occupant, said method comprising the following steps:

- detecting an input on a man-machine interface;
- selecting pre-recorded response data recorded in a memory of the on-board device depending on the input;
- transmitting data corresponding to the pre-recorded response data to the remote device via at least one wireless telecommunications network.

[0008] Thanks to the invention, especially the use and the selection of pre-recorded response data, the occupant of the vehicle is able to communicate with the emergency center even if the occupant is not able to speak. Therefore, the method allows a voiceless communication between the occupant of the vehicle and the emergency center. Furthermore, thanks to the selection, the occupant can select and adapt the data to be transmitted to the emergency center.

[0009] According to an embodiment, the pre-recorded response data comprise a text data, the data comprising the text data.

[0010] According to an embodiment, the pre-recorded response data are representative of a voice signal, the method comprises a step of playing the voice signal by the on-board device, the data transmitted being voice data representative of the voice signal.

[0011] According to an embodiment, the on-board device comprises a display, the method comprising a step of displaying a list of pre-recorded text messages on the display, the input corresponding to the selection of a text message selected in the list of pre-recorded text message by the at least one occupant after an activation of an area of the display or after an activation of at least one control device connected to the display.

[0012] In this embodiment, the list of pre-recorded text messages comprises at least one of the following information:

- positive affirmative answer;
- negative affirmative answer;
- pre-recorded personal information on the occupant;
- pre-recorded information on the status of the occupant.

[0013] By status, it is meant for instance the health status of the occupant.

[0014] According to an embodiment, the information may be derived by the device using a supervised learning algorithm. For example, the list of pre-recorded text messages may be derived using a decision tree during the call.

[0015] According to an embodiment, the on-board device comprises two control devices, each control device being associated to a specific pre-recorded response data, the input corresponding to one of the specific pre-recorded response data selected by the at least one occupant by an activation of one of the control devices.

[0016] According to this embodiment, the two control devices correspond to volume control buttons of the vehicle.

[0017] According to this embodiment, the specific pre-recorded response data of one of the control devices is a positive affirmative answer and the specific pre-recorded response data of the other control device is a negative affirmative answer.

[0018] According to an embodiment, the method further comprises receiving voice data from the remote

device.

[0019] According to an embodiment, the method further comprises a step of acquiring or receiving additional data.

[0020] According to an embodiment, the additional data are sent in the step of transmitting, the additional data comprising at least one of the following elements:

- picture of an interior of the vehicle;
- personal information of the at least one occupant;
- information on the at least one occupant;
- location of the vehicle;
- information on the vehicle;
- a picture of the at least one occupant;
- a picture of the interior of the vehicle;
- a picture of the exterior of the vehicle.

[0021] According to an embodiment, the method comprises a step of establishing a communication between the on-board device and the remote device.

[0022] According to this embodiment, the step of establishing being triggered automatically by the on-board device upon detection of an accident or being triggered by the at least one occupant by activating the device.

[0023] According to an embodiment, before the step of detecting, the method comprises a step of activating performed:

- remotely by the remote device when no data are transmitted from the on-board device after a period of time, or
- by activating the on-board device by the at least one occupant.

[0024] According to this embodiment, when the step of activating is performed remotely, the defined period of time is lower than 10 seconds.

[0025] The different characteristics, variants, and embodiments of the invention may be combined with each other in various combinations insofar as they are not incompatible or exclusive of each other.

[0026] A further object of the invention is to provide a computer program comprising instructions executable by a processing unit of the on-board device and designed to implement the method according to the invention.

[0027] A further object of the invention is to provide an on-board programmed to implement a method for transmitting data to the remote device according to the invention.

DETAILED DESCRIPTION OF EXAMPLES

[0028] The following description with reference to the accompanying drawings will make it clear what the invention consists of and how it can be achieved. The invention is not limited to the embodiment illustrated in the drawings. Accordingly, it should be understood that, where features mentioned in the claims are followed by reference signs, such signs are included solely for the purpose of enhancing the intelligibility of the claims and are in no way limiting on the scope of the claims.

[0029] In the accompanying drawings:

- Figure 1 is a schematic view of a vehicle having an on-board device according to the invention;
- Figure 2 is a schematic representation of the device according to the invention exchanging data with a remote device;
- Figure 3 is a schematic representation of a process according to the invention.

[0030] It will be disclosed with figure 1 and figure 2 an example of an on-board device according to the invention.

[0031] As illustrated in figure 1, it is shown a motor vehicle 10 having four wheels 13, but as a variant, it could be a vehicle of any other type (truck, bus, etc.).

[0032] This vehicle 10 comprises a chassis, bodywork elements and glazing panels which delimit together a passenger compartment 15. At least one seat for at least one occupant 1 is fastened to the chassis. In practice, the vehicle 10 comprises several seats so that several occupants 1 can seat in the vehicle 10.

[0033] It will be noted here that the term "occupant" will be used to indicate both the driver and any other passenger of the vehicle.

[0034] The vehicle 10 comprises an on-board device 100 according to the invention.

[0035] The on-board device 100 is comprised in an eCall system of the vehicle 10.

[0036] The on-board device 100 is able to exchange data with a remote device 2.

[0037] By remote device, it is meant a device that is situated outside the vehicle 10. Typically, here the remote device 2 is a device able to receive an emergency call from the eCall system of the vehicle 10. In other words, it means that the remote device 2 is able to receive data from the on-board device 100 and to transmit data to the on-board device 100.

[0038] In the present disclosure, the on-board device 100 comprises a processing unit 110.

[0039] By processing unit 110, it is meant a computer or a processor or a central processing unit (CPU) or any electronic device allowing to implement a succession of commands and/or calculations. Typically, the processing unit 110 comprises a processor, a memory and different input and output interfaces. To this end, the processing unit 110 is configured to control the operations and the functions carried out by the on-board device 100. The input and output interface may be the point of connection allowing the on-board device 100 to receive data and to send commands or data. The processing unit 110 can be connected to other processing units of the vehicle 10 to exchange information with them. The processing unit 110 is also configured to receive and process data acquired by different sensors 16.

[0040] The processing unit 110 is connected to a man-machine interface 14 of the vehicle 10. By man-machine interface, it is meant any component of the vehicle 10 that allows the occupant 1 to communicate with the on-board device 100 or elements of the vehicle 10 or elements of the on-board device 100, or computer program or system of the vehicle 10 or computer program or system of the on-board device 100.

[0041] In this example, the on-board device 100 is connected to elements of the dashboard of the vehicle 10. The man-machine interface 14 can comprise a display of the dashboard, the audio-system of the vehicle, the board computer of the vehicle, any control button connected to the precited elements such as control buttons of the display or the audio-system, etc.

[0042] In this example, the occupant 1 has access to the man-machine interface 14 and can activate the man-machine interface 14 with his hand.

[0043] The man-machine interface 14 of the vehicle 10 is connected to the on-board device 100 so that when the occupant 1 activates the man-machine interface 14, the on-board device 100 receives an input.

[0044] The input is a data carrying an information. Typically, here, the information carried by the input depend on the man-machine interface 14 activated by the occupant 1 of the vehicle 10.

[0045] The processing unit 110 also comprises a memory 111 which stores data, such as here pre-recorded response data.

[0046] The pre-recorded response data correspond to data that are used to communicate with the remote device 2.

[0047] In an example, the pre-recorded response data correspond to data of a file that is selected as a function of the input. It means that the pre-recorded response data depend on the input, especially the information carried by the input. Therefore, when the occupant 1 selects an input by activating the man-machine interface 14, the on-board device 100 detects the input and selects (in the file of the memory 111) the pre-recorded response data associated to this input.

[0048] The file in which the pre-recorded response data are stored can comprise a text file and/or an audio file. Therefore, the pre-recorded response data comprise text data of the text file and/or data representative of voice signals of the audio file that are stored in the memory 111.

[0049] The on-board device 100 further comprises a communication unit 120. The communication unit 120 allows exchanging data between the on-board device 100 with element outside of the vehicle 10, typically here the remote device 2 of an emergency call centre. To this end, the communication unit 120 is configured to establish a communication, for example a wireless communication, with services that are outside of the vehicle 10 (in practice a phone call with the emergency center).

[0050] The communication unit 120 is configured to be connected in this example to a wireless telecommunications network 4.

[0051] The wireless telecommunications network 4 is a system that uses electromagnetic waves to exchange data. In practice, the wireless telecommunications network 4 uses a mobile phone network. As a variant, the wireless telecommunications network 4 can also use the Wi-Fi technology, Bluetooth technology, 2G/3G/4G/5G technology, etc.

[0052] Typically, here, the communication unit 120 is the communication unit of the eCall system of the vehicle 10. Therefore, the communication unit 120 is configured to emit and/or to receive emergency call.

[0053] The communication unit 120 may also be configured to exchange data with elements inside or close to the vehicle 10.

[0054] In practice, the communication unit 120 can be wirelessly connected to elements of the vehicle 10 such as the sensors 16 of the vehicle 10 (camera, etc.) or to element connected to at least one processing unit of the vehicle 10. In that case the communication unit 12 is configured to received sensor data from the sensors 16 of the vehicle 10 or sensors connected to at least one processing unit of the vehicle 10.

[0055] In practice, the on-board device 100 is connected to an interior camera of the vehicle 10, a GNSS (for "Global navigation satellite system") sensor, such as a GPS (for "Global Positioning System") sensor, an exterior camera of the vehicle, etc.

[0056] It can also be wirelessly connected to other devices, for example, to the smartphone of the occupant 1. The communication unit 120 may also be configured to receive data from a mobile phone (typically a smart phone) such as, for example, personal information of the occupant, picture of the occupant, etc.. In that case, the communication unit 120 can uses the Wi-Fi technology, Bluetooth technology, telephony technology, 2G/3G/4G/5G technology, etc..

[0057] The on-board device 100 also comprises a speaker device 130 comprising at least one loudspeaker. This is advantageous when the loudspeakers of the vehicle 10 are damaged.

[0058] This loudspeaker can for example be similar to loudspeaker that is usually used in the vehicle 10 to play music in the passenger compartment 15 and/or reproduce the voice of an incoming call.

[0059] In this example, the loudspeaker of the speaker device 130 is in the passenger compartment 15. It is for example situated in an internal part of the doors of the vehicle 10. Preferentially, several loudspeakers of the speaker device 130 are located in the passenger compartment 15, for example at the front and at the rear of the passenger compartment 15.

[0060] The speaker device 130 is configured to emit a sound in the passenger compartment 15. Depending on the properties of the emitted sound (such as the volume of the emitted sound), the speaker device 130 can be configured to emit the sound so that it can also propagate outside the vehicle 10. Typically, here, when a communication between the on-board device 100 and the re-

mote device 2 of the emergency center is made, the voice of the individual's online of the emergency center is transmitted in the passenger compartment 15 via the speaker device 130.

[0061] In a variant, the on-board device 100 can use at least one loudspeaker of the vehicle 10. In that case, it can be the loudspeaker used in the vehicle 10 to play music in the passenger compartment 15 and/or reproduce the voice of an incoming call.

[0062] The on-board device 100 also comprise a microphone device 140 comprising at least one microphone. The microphone is located in the passenger compartment 15. It is for example located in an area of the dashboard of the vehicle 10 close to the steering wheel (in order to be close to the driver of the vehicle 10). This is advantageous when the microphones of the vehicle 10 are damaged. In practice, the microphones of the on-board device 100 are those of the eCall system.

[0063] The microphone device 140 is configured to receive sound propagating in the vehicle 10. It is also configured to receive the sound that is propagating near but outside of the vehicle 10, in particular when windows are opened or broken.

[0064] In the context of the present invention, it is assessed that the vehicle 10 is involved in an incident or an accident. The present invention thus aims at communicating in a voiceless way data between the on-board device 100 and the remote device 2 of the emergency center.

[0065] In a variant, the on-board device 100 can use at least one microphone of the vehicle 10.

[0066] It will be disclosed with refence to figure 3 an example of a method 1000 according to the invention. The method 1000 is a method for transmitting data to a remote device 2 during an emergency call using the on-board device 100 shown in figures 1-2.

[0067] The method 1000 is implemented by the on-board device 100.

[0068] In this example, the method 1000 comprises, optionally, a step of establishing 1002, a communication between the on-board device 100 and the remote device 2 of the emergency center. Typically, the step of establishing 1002 is performed by the communication unit 120 of the on-board device 100.

[0069] Typically, in the step of establishing 1002, a communication (for example a phone call) is made between the on-board device 100 and the remote device 2.

[0070] In the present disclosure, this communication can be triggered automatically by the on-board device 100 upon a detection of a vehicle accident by the on-board device 100. In practice, the communication can for instance be triggered when an acceleration of the vehicle 10 in a given direction (as measured by a dedicated sensor) exceeds a predetermined threshold. In a variant, this communication between the on-board device 100 and the remote device 2 can be triggered by the at least one occupant 1 of the vehicle 10, here by the diver 1 of the vehicle 10 which can, for example, trigger via a dashboard of the vehicle 10 an emergency call using, for example, a button of the eCall system or the display of the dashboard or via any element connected the eCall system.

[0071] Typically, here, when the communication between the on-board device 100 and the remote device 2 is established, the on-board device 100 receives voice data from the remote device 2. To this end, the method 100 comprises a step of receiving 1003 the voice data from the remote device 2. The voice data are played by the loudspeaker of the vehicle 10 (here the loudspeaker of the on-board device 100) to that the occupant 1 hears a sound signal corresponding to the voice data. Therefore, a sound signal is reproduced by the loudspeaker based of the received voice data in the vehicle 15.

[0072] The voice data depend on the emergency procedure of the emergency center when it receives or emits an emergency call. The voice data can be typically representative of an information, or a question asked by an individual (or the computer of the remote device 2) of the emergency center, etc. Although that the voice data can be representative of different kinds of questions or information, the emergency call center awaits a response from the occupant 1 of the vehicle 10. Typically, if the remote device 2 does not receive data, it means that no data are transmitted from the on-board device 100. Thus, the remote device 2 associates the non-reception of data by the fact that the occupant 1 of the vehicle 10 is not able to speak.

[0073] When the communication between the emergency center via the remote device 2 and the on-board device 100 is established, the method 1000 comprises a step of activating 1004 of a voiceless data exchange. By voiceless data exchange, it is meant a communication that does not involve the real voice of the occupant 1. In other words, it means that the occupant 1 communicates with the emergency center without speaking even if a phone call is established between the emergency center.

[0074] The step of activating 1004 depends on the occupant 1. Specifically, the step of activating 1004 is triggered when the occupant 1 is not able to speak.

[0075] The voiceless data exchange can be directly activated by the occupant 1 of the vehicle 10 when the occupant 1 understands that he is not able to speak. If the occupant 1 has access to the on-board device 100 or can move, the occupant 1 can directly activate a control button of the on-board device 100 to activate the voiceless communication with the remote device 2.

[0076] If the occupant 1 cannot move or has no access to the on-board device 100, the on-board device 100 can receive a command from the remote device 2 to activate the voiceless communication. Therefore, it means that the voiceless data exchange is remotely activated by the remote device 2. The command is typically sent by the remote device 2 when no data are transmitted from the on-board device 100 after a period of time. The period of time is determined as explained below.

[0077] To determine whether the occupant can speak,

the remote device 2 uses an intern clock that evaluates the period of time after a reception of the voice data by the on-boar device 20. Typically, here, if no data from the on-board device 100 are received after 10 seconds, preferably after 5 seconds, the step of activating 1004 is triggered by the remote device 2. The period of time of 5 seconds is preferred to accelerate the emergency procedure.

[0078] After the reception of the command from the remote device 2, the method 1000 can carry out the other steps of the method 1000.

[0079] After the step of activating 1004, the method 1000 comprises a step of detecting 1006 the input on the man-machine interface 14.

[0080] As the occupant 1 cannot speak, the occupant 1 uses the man-machine interface 14 to send data from the on-board device 100 to the remote device 2. Typically, here, the occupant activates elements of the vehicle 10 to communicate with the remote device 2 so that the input is detected by the one-board device 100.

[0081] For example, when the on-board device 100 comprises a display, the display displays a list of pre-recorded text messages.

[0082] If the display is a tactile display, the occupant 1 selects (by touching it) one of the prerecorded text messages in the list of the prerecorded text messages. When the display is activated, the input is automatically detected by the on-board device 100.

[0083] In case of the display is not a tactile display or in case the occupant 1 cannot activate the display (for example if the occupant is positioned too far from the display or if the display is damaged), the occupant 1 can also activate a control device connected to the display to select the pre-recorded text message. Using a display is easy to use by the occupant of the vehicle. In addition, the method can be implemented with elements already comprised in vehicles, which limits the cost of the implementation.

[0084] In the present disclosure, the list of pre-recorded text messages comprises deferent type of information to provide the remote device 2 with data that are representative of an answer of the occupant to the question asked by the individual or the remote device 2 of the emergency center. Typically, in the present disclosure, the list of pre-recorded text messages comprises at least one of the following information: positive affirmative answer; negative affirmative answer; pre-recorded personal information on the occupant; pre-recorded information on the status of the occupant, etc.

[0085] This information may be derived by the on-board device 100 (here the processing unit 110) using a supervised learning algorithm, for example a decision tree implemented by the on-board device 100 during the call (the implemented method). In practice, the algorithm is stored in the memory of the on-board device 100 and is automatically activated in the step of detecting 1006 (for example after receiving voice data from the remote device 2). In that case, the voice data are analyzed by the on-board device 100 and the on-board device 100 proposes or suggests potential answers via the list of the pre-recorded text messages by using the decision tree. The display may display the pre-recorded text messages according to a rank determined by the decision tree. Therefore, in that case, the list of prerecorded text messages displayed depend on the received voice data. Consequently, using a supervised learning algorithm may help the user to find easily the answer improving the process speed.

[0086] In a variant, if the vehicle 10 does not comprise any display, the on-board device 100 can use other elements of the vehicle 10 or the on-board device 100.

[0087] For example, the list of the of prerecorded text messages can be played by the loudspeaker of the on-board device 100. The occupant can activate a control device to select one of the prerecorded text messages of the list of the prerecorded text messages.

[0088] Typically, the on-board device 100 can use the audio-system of the vehicle 10. The audio-system of the vehicle 10 comprises (at least) two control devices (for example the volume control buttons of the audio-system), each control device is used to select a specific prerecorded text message (also called specific pre-recorded response data). For example, one of the control devices is associated to a positive affirmative answer (for example Yes) and the other to a negative affirmative answer (for example No). Thus, in that case, the occupant activates one of the control devices to select the desired answer. The on-board device 100 detects by the activation, the input. This selection is also advantageous when the display of the vehicle 10 is damaged. Similarly, using the audio system of the vehicle is easy to use by the occupant. In addition, the method can be implemented with elements already comprised in vehicles, which limits the cost of the implementation.

[0089] When the occupant 1 selects the prerecorded text message (or specific prerecorded text message), the on-board device 100 detects an input on the man-machine interface 14. It means that the input, especially, the information carried by the input corresponds to the selected pre-recorded text message. It also means that the input depends on the information carried by the voice data because, by selecting the prerecorded text message, the occupant has voluntarily answered the information carried by the voice data. For example, if the pre-recorded text messages comprise a positive affirmative answer, the information carried by the input is yes.

[0090] After detecting the input, the method comprises a step of selecting 1008 pre-recorded response data recorded in a memory of the on-board device 100 depending on the input.

[0091] In this step, the on-board device 100 selects in the file of the memory 111 the pre-recorded response data associated to the input (i.e. the information carried by the input).

[0092] Then, the method 1000 comprises a step of transmitting 1010 data corresponding to the pre-re-

corded response data to the remote device 2 via at least one wireless telecommunications network 4. This step is performed by the communication unit 120 of the on-board device 100. Therefore, in the step of transmitting 1010, the on-board device 100 sends to the remote device 2 the data corresponding to the pre-recorded response data selected in the previous step. These data are then received by the remote device 2.

[0093] The data transmitted by the on-board device 100 can be a text message and/or a voice signal depending on the nature of the pre-recorded response data selected in the step of selecting.

[0094] As explained above, the recorded file can comprise audio and/or text data.

[0095] If the recorded file comprises a text file, the pre-recorded response data is a text data. Therefore, the on-board device 100 sends directly to the remote device 2 data comprising the text data.

[0096] If the recorded file comprises an audio file, the pre-recorded response data are representative of a voice signal. In that case, the method comprises (optionally) a step of playing 1009 the voice signal by the on-board device (here by the loudspeaker). In that case, the data sent in the step of transmitting 1010 are voice data representative of the voice signal. Voice data representative of a voice signal are often accepted or preferred by the help center. Therefore, the method can be used in several countries.

[0097] In practice, when the loudspeaker plays the pre-recorded response data, a voice signal is emitted in the passenger compartment 15. The played voice signal is then captured by the microphone device 140 of the on-board device 100 (as it would be if the occupant had spoken directly with his voice) and converted into voice data by the on-board device 100. These voice data are then sent by the communication unit 120 to the remote device 2

[0098] Optionally, the method 100 further comprises a step of acquiring or receiving 1020 additional data from elements of the vehicle 10. In that case, the on-board device 100 transmits these additional data in the step of transmitting 1010.

[0099] The additional data can comprising at least one of the following elements:

- picture of an interior of the vehicle taken by an interior camera of the vehicle or by a remote camera (for example by the camera of the mobile phone of the occupant 1);
- personal information of the at least one occupant that can be stored in the memory 111 or store in a memory of a processing unit of the vehicle 10;
- information on the at least one occupant, for example an health status of the occupant;
- location of the vehicle given by the GPS of the vehicle 10;
- information on the vehicle;
- a picture of the at least one occupant taken by the interior camera or by a remote camera (for example by the camera of the mobile phone of the occupant 1);
- any data determined by a sensors of the vehicle 10 or by a device of the occupant 1,
- a picture of the exterior of the vehicle taken by an exterior camera of the vehicle or a remote camera etc.

[0100] These additional data may help the emergency center in providing guidelines to the occupant and/or these additional data may assist the emergency center in the determination of information about the occupant and/or the situation, and/or the location, etc.

[0101] The steps of the method can be reiterated.

[0102] For example, after the reception of the data, the remote device 2 can send again the on-board device 100 new data. For example, the individual of the emergency center or the computer of the remote device 2 can ask new questions. Therefore, the method comprises (optionally) another step of receiving 1003 voice data from the remote device 2. As explained above, the voice data are played by the loudspeaker to be heard by the occupant 1.

[0103] In that case, the step of detecting 1006, the step of selecting 1008 and the step of transmitting 1010 can be reiterated as soon as the occupant 1 activates the man-interface 14 to respond to the question of the emergency center (carried by the voice data).

[0104] Therefore, as soon as the on-board device 100 detects an input, the steps of selecting 1008 and transmitting 1010 are reiterated.

Claims

1. Method for transmitting data to a remote device (2) during an emergency call using an on-board device (100) comprised in a vehicle (10) in which there is at least one occupant (1), said method (1000) comprising the following steps:

   - detecting (1006) an input on a man-machine interface;
   - selecting (1008) pre-recorded response data recorded in a memory (111) of the on-board device (100) depending on the input;
   - transmitting (1010) data corresponding to the pre-recorded response data to the remote device (2) via at least one wireless telecommunications network (4).

2. Method according to claim 1, wherein the pre-recorded response data comprises a text data, the data comprising the text data.

3. Method according to any one of claims 1 to 2, wherein the pre-recorded response data are representa-

tive of a voice signal, the method comprises a step of playing (1009) the voice signal by the on-board device (100), the data transmitted being voice data representative of the voice signal.

4. Method according to any one of claims 1 to 5, wherein the on-board device (100) comprises a display, the method comprising a step of displaying (1005) a list of pre-recorded text messages on the display, the input corresponding to the selection of a text message selected in the list of pre-recorded text message by the at least one occupant (1) after an activation of an area of the display or after an activation of at least one control device connected to the display.

5. Method according to claim 6, wherein the list of pre-recorded text messages comprises at least one of the following information:

- positive affirmative answer;
- negative affirmative answer;
- pre-recorded personal information on the occupant;
- pre-recorded information on the status of the occupant.

6. Method according to any one of claims 1 to 4, wherein the on-board device comprises two control devices, each control device being associated to a specific pre-recorded response data, the input corresponding to one of the specific pre-recorded response data selected by the at least one occupant by an activation of one of the control devices.

7. Method according to claim 6, wherein the two control devices correspond to volume control buttons of the vehicle.

8. Method according to any one of claims 6 to 7, wherein the specific pre-recorded response data of one of the control devices is a positive affirmative answer and the specific pre-recorded response data of the other control device is a negative affirmative answer.

9. Method according to any one of claims 1 to 8, wherein the method further comprises receiving (1003) voice data from the remote device (2).

10. Method according to any one of claims 1 to 9, wherein the method further comprises a step of acquiring (1020) or receiving (1020) additional data.

11. Method according to claim 10, wherein the additional data are sent in the step of transmitting (1010), the additional data comprising at least one of the following elements:

- picture of an interior of the vehicle;
- personal information of the at least one occupant;
- information on the at least one occupant;
- location of the vehicle;
- information on the vehicle;
- a picture of the at least one occupant;
- a picture of the interior of the vehicle;
- a picture of the exterior of the vehicle.

12. Method according to any one of claims 1 to 11, wherein the method comprises a step of establishing (1002) a communication between the on-board device (100) and the remote device (2).

13. Method according to claim 12, wherein the step of establishing (1002) being triggered automatically by the on-board device (100) upon detection of an accident or being triggered by the at least one occupant (1) by activating the on-board device (100).

14. Method according to any one of claims 1 to 13, wherein before the step of detecting (1006), the method comprises a step of activating (1004) performed:

- remotely by the remote device (2) when no data are transmitted from the on-board device (100) after a period of time, or
- by activating the on-board device (100) by the at least one occupant (1).

15. Method according to claim 14, wherein, when the step of activating (1004) is performed remotely, the defined period of time is lower than 10 seconds.

16. A computer program comprising instructions executable by a processing unit (110) of the on-board device (100) and designed to implement the method of any of claims 1 to 15 when such instructions are executed by the processing unit (110).

17. On-board device programmed to implement a method for transmitting data to the remote device in accordance with any of claims 1 to 15.

Fig.1

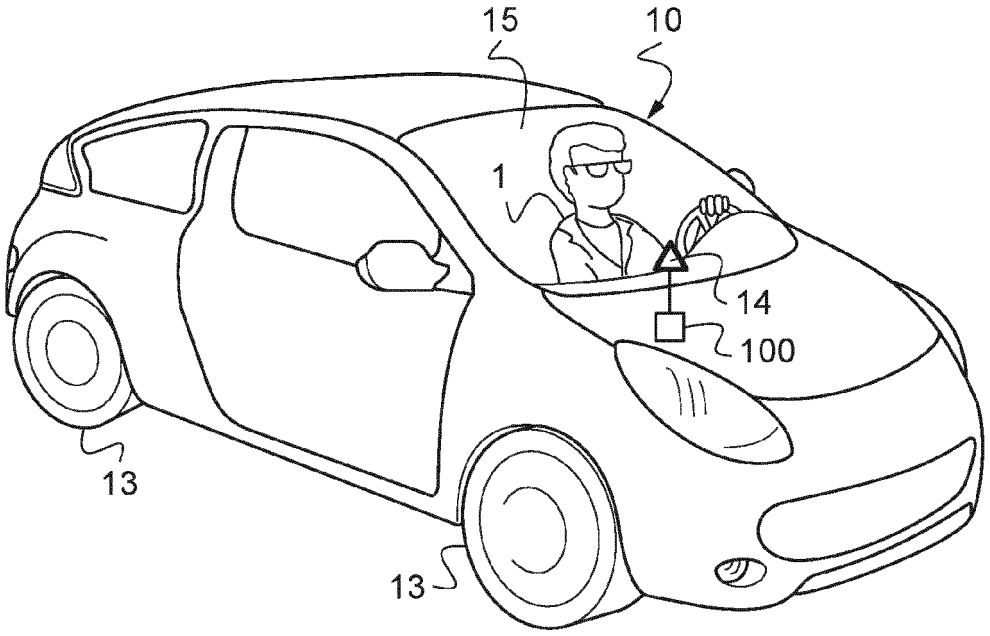


Fig.2

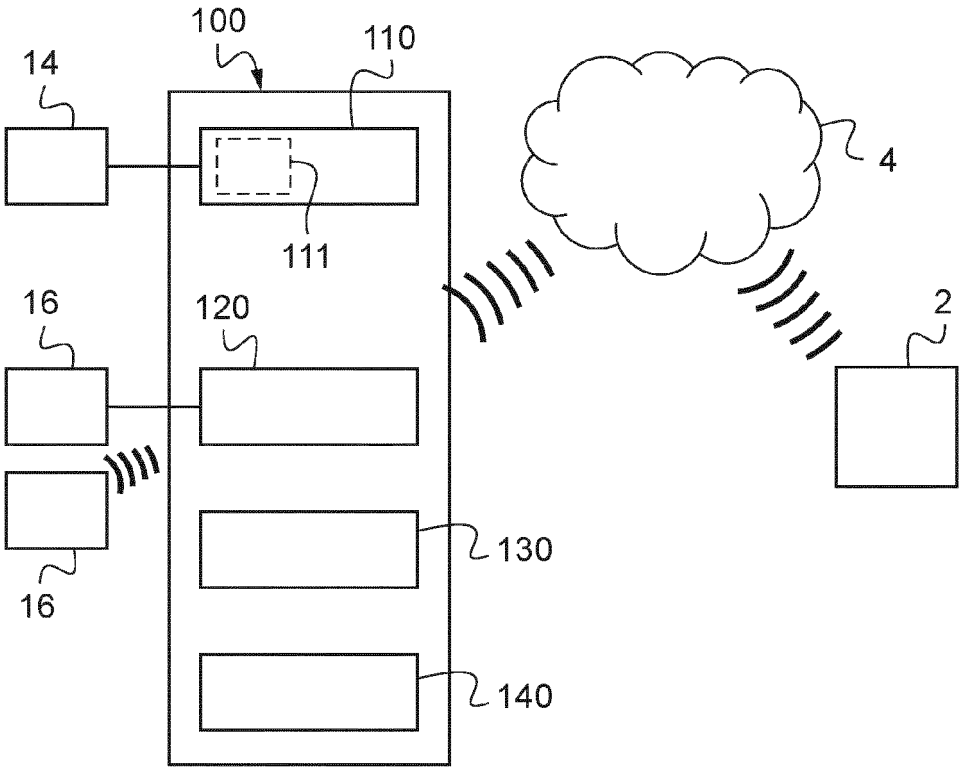
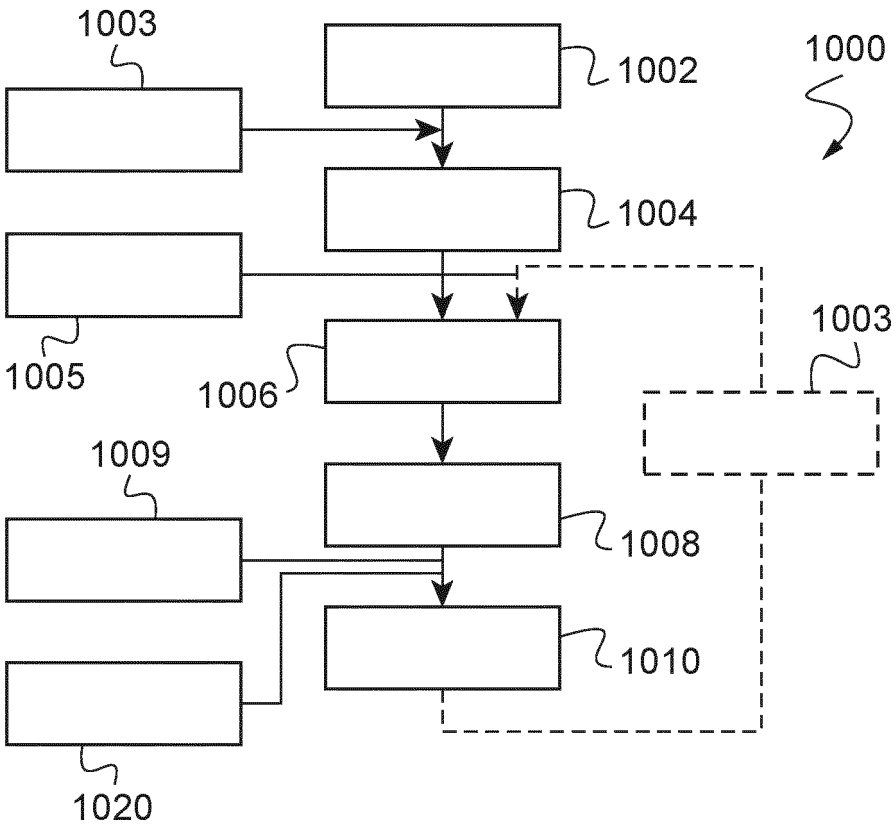


Fig.3



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EUROPEAN SEARCH REPORT

Application Number
EP 23 17 6158

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X	DE 10 2020 207047 A1 (VOLKSWAGEN AG [DE]) 9 December 2021 (2021-12-09)	1-17	INV. G08B25/01
Y	* paragraphs [0010], [0011] * * paragraph [0023] * * paragraph [0025] * * paragraphs [0031], [0032] * * paragraphs [0046], [0047] * * paragraph [0050] * * paragraphs [0060] - [0070] * * figure 1 *	10,11	
Y	EP 3 979 222 A1 (ECKERT MANUEL [DE]) 6 April 2022 (2022-04-06) * paragraph [0013] * * paragraphs [0035], [0036] * * paragraph [0084] * * paragraph [0086] * * paragraph [0115] *	10,11	

TECHNICAL FIELDS SEARCHED (IPC)

G08B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	15 November 2023	Meister, Mark

CATEGORY OF CITED DOCUMENTS

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