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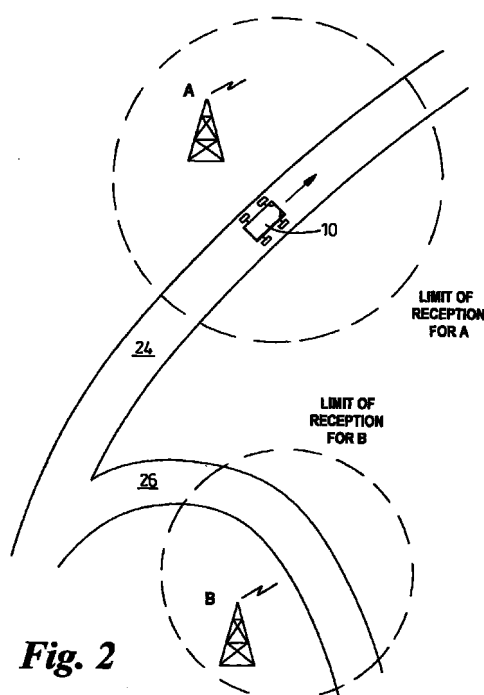
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(54) **A traffic information system for a vehicle**

(57) A traffic information system for a vehicle 10 is disclosed in which the vehicle 10 receives traffic information broadcasts from RDS-TMC and filters this information so that traffic information relevant to the position of the vehicle 10 is made available to a user. The controller 16 is arranged to determine the identity of a local transmitter A, B from an identity code included in its signals and then to determine the vehicle location using a look-up table in a memory 18 which relates the identity codes to the location of the transmitters A, B.



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## Description

[0001] This invention relates to traffic information systems for vehicles and in particular to a system in which traffic information is provided selectively.

[0002] It is known to provide traffic information broadcasts for vehicles using, for example, radio data system RDS and/or traffic management channel TMC technology. Such broadcasts include a location identifier which can be used to enable an in-vehicle system to determine whether the information is relevant to the vehicle's current position and thereby to determine whether or not to broadcast the information to the vehicle user.

[0003] Some such systems, however, need to determine the position of the vehicle so as to decide what information is relevant. It is possible to use geopositional satellite systems (GPS) or cellphone triangulation as methods of determining the vehicle position so as to achieve the necessary filtering. These solutions tend to be expensive as they require extra equipment, such as a GPS or a 'phone, in order to work and are therefore often only found on vehicles high up in a manufacturer's model range.

[0004] In EP 0412286 an arrangement is provided which superimposes a co-ordinate system over an area and filters RDS information by determining the vehicle's position using triangulation based on the propagation delay of signals from local transceivers. Further filtering is also available using programme identification codes. It is a disadvantage of this system that, in order to perform useful filtering of the traffic information, it is necessary to provide complex means for determining the position of the vehicle.

[0005] It is an object of this invention to provide an improved traffic information system.

[0006] Accordingly, the invention provides a traffic information system for a vehicle, the system comprising a controller arranged in use to receive a traffic information broadcast signal and to filter traffic information from the broadcast signal such that information relevant to an at least approximate position of the vehicle is made available to a user, characterised in that the controller is arranged in use to receive at least one local signal which includes an identity code identifying an associated local signal transmitter and is arranged to determine said at least approximate position from said identity code.

[0007] It can thus be seen that the system of this invention uses codes which identify one or more local transmitters as the means for determining the position of the vehicle. This aspect of the invention is advantageous because it does not require complex means, such as a GPS or triangulation, for determining an at least approximate position of the vehicle. Filtering of traffic information is therefore simpler and can be provided on a wider range of vehicles than can be achieved if complex and/or expensive means of positional deter-

mination are used.

[0008] Said at least approximate position may be determined using a look-up table which relates said identity code to the location of its associated local transmitter.

[0009] The controller may be arranged to determine said at least approximate position of the vehicle by determining which one or more local transmitters are within a predetermined range of said vehicle.

[0010] Said at least one local transmitter may comprise a short range transmitter and the frequency of transmission of a said local signal may be in the region of 433.92 MHz.

[0011] The traffic information broadcast may comprise at least one of a radio data system broadcast (RDS) and a traffic management channel (TMC) broadcast.

[0012] The invention will now be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is a schematic diagram of a vehicle including a traffic information system according to the invention; and

Figure 2 is a plan view of the vehicle of Figure 1 in use.

[0013] Referring to the figures, a vehicle 10 comprises a receiver 12 which is arranged in use to receive traffic information broadcasts from a radio data system RDS and/or a traffic management channel TMC broadcast system.

[0014] The vehicle 10 further comprises a second receiver 14 which is arranged in use to receive signals from short range transmitters which transmit local information on, for example, 433.92 MHz.

[0015] Both receivers 12, 14 supply the signals they receive to a controller 16 which is associated with a memory unit 18. The controller 16 is arranged to selectively broadcast traffic information (RDS-TMC) to a user of the vehicle 10 through at least one of a speaker 20 and a visual display unit 22.

[0016] The local transmitters A, B have a limited range within which their signals can be received. One example of such transmitter technology is the "Traffic Master" system, although any local signal which can be received from a road and which has a short range and which includes an identity code would be suitable. The identity codes of each transmitter A, B are programmed into a look-up table held in the memory 18.

[0017] When the vehicle 10 travels along a road 24 which passes through the range of the first transmitter A, the vehicle 10 receives signals from that transmitter A but is out of range of the other transmitter B which covers a different area such as an alternative road 26.

[0018] When the controller 16 receives a local signal from the first transmitter A through the receiver 14, it

uses the identity code of the transmitter A to derive from the look-up table held in the memory 18 the approximate locality of the vehicle 10, i.e. by monitoring which one or more of the local transmitters A, B can be received.

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**[0019]** The controller 16 uses this information about the vehicle's approximate location to filter the RDS-TMC traffic information broadcasts received through the receiver 12, so as to broadcast to the user through the speaker 20 and/or display unit 22 only information which is relevant to the vehicle's location.

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**[0020]** In this manner the user is provided with filtered traffic information broadcasts using location techniques which provide a significant cost saving over some known systems, such as those which use GPS for location.

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### Claims

1. A traffic information system for a vehicle (10), the system comprising a controller (16) arranged in use to receive a traffic information broadcast signal (RDS-TMC) and to filter traffic information from the broadcast signal such that information relevant to an at least approximate position of the vehicle (10) is made available to a user, characterised in that the controller (16) is arranged in use to receive at least one local signal which includes an identity code identifying an associated local signal transmitter (A, B) and is arranged to determine said at least approximate position from said identity code.
2. A system according to Claim 1, wherein said at least approximate position is determined using a look-up table which relates said identity code to the location of its associated local transmitter (A, B).
3. A system according to Claim 1 or Claim 2, wherein the controller (16) is arranged to determine said at least approximate position of the vehicle (10) by determining which one or more local transmitters (A, B) are within a predetermined range of said vehicle (10).
4. A system according to any preceding claim, wherein at least one local transmitter (A, B) comprises a short range transmitter.
5. A system according to Claim 4, wherein the frequency of transmission of a said local signal is in the region of 433.92 MHz.
6. A system according to any preceding claim, the traffic information broadcast comprising at least one of a radio data system broadcast (RDS) and a traffic management channel (TMC) broadcast.

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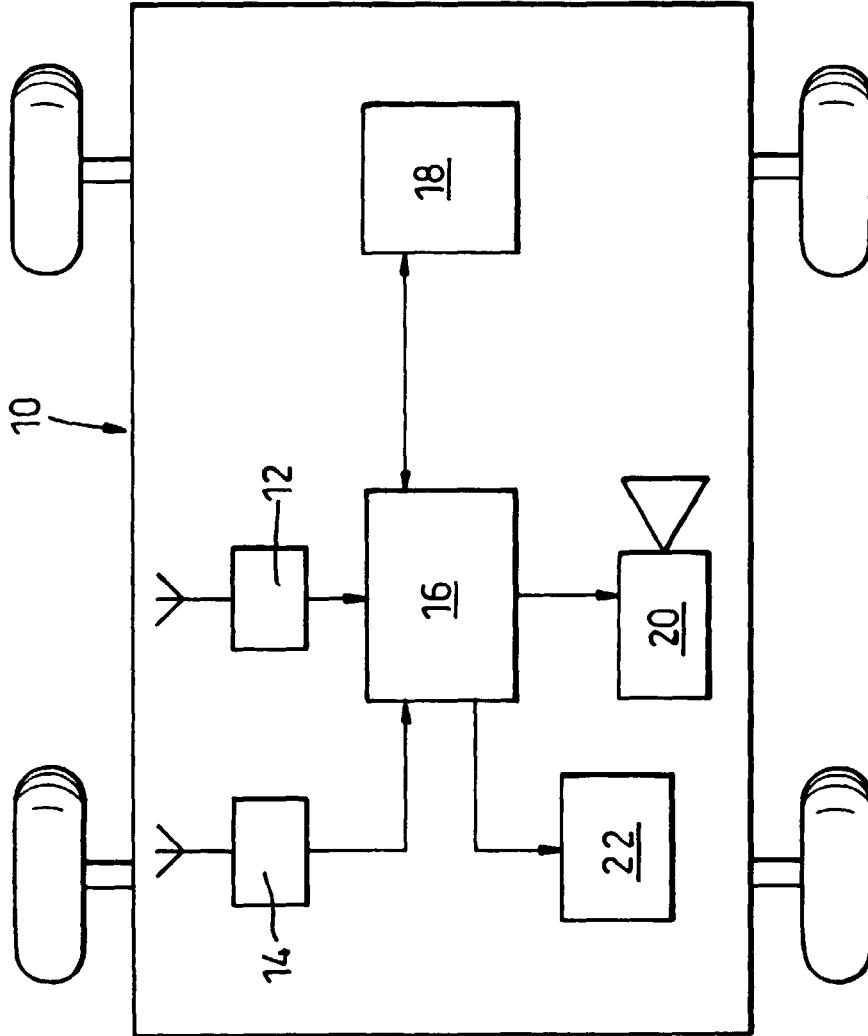
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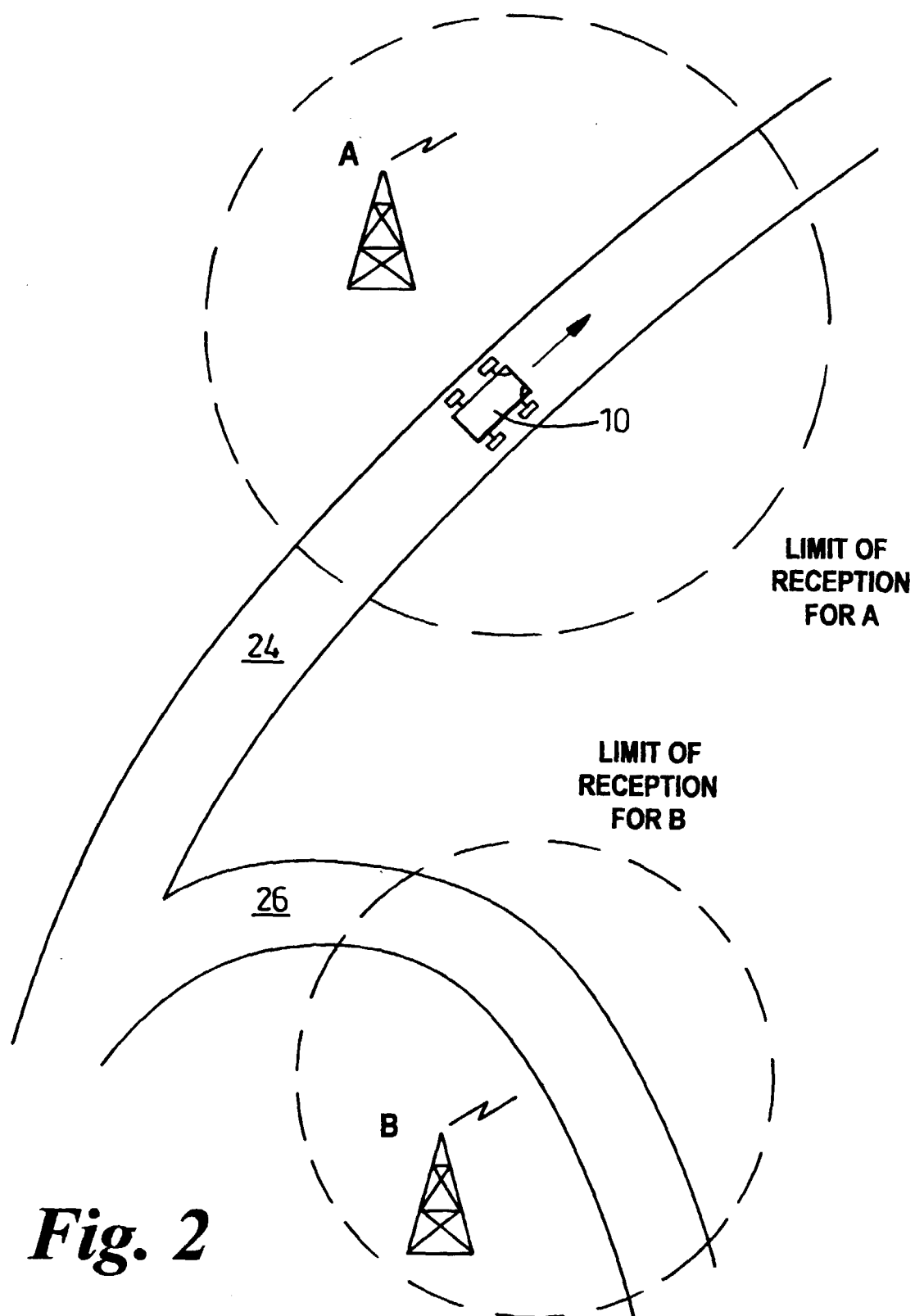
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*Fig. 1*





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# EUROPEAN SEARCH REPORT

Application Number  
EP 00 30 0396

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                |                                                         |                                              |
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| <p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone<br/>Y : particularly relevant if combined with another document of the same category<br/>A : technological background<br/>O : non-written disclosure<br/>P : intermediate document</p> <p>T : theory or principle underlying the invention<br/>E : earlier patent document, but published on, or after the filing date<br/>D : document cited in the application<br/>L : document cited for other reasons<br/>&amp; : member of the same patent family, corresponding document</p> |                                                                                                                                                                |                                                         |                                              |

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 00 30 0396

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The members are as contained in the European Patent Office EDP file on  
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