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(54) Traffic information receiver and traffic information reception method

Verkehrsnachrichtempfangsvorrichtung und -verfahren

Dispositif et procédé pour la réception d'informations de trafic

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a traffic information receiver for receiving traffic information which is broadcast according to the region and providing it to users.

2. Description of the Related Art

[0002] A typical example of broadcast systems for broadcasting traffic information is a radio data system (RDS) for broadcasting various types of information, such as information concerning broadcast programs and traffic information, by multiplexing such information on audio broadcasts. For the sake of convenience, data multiplexed with audio broadcasts is referred to as "RDS data".

[0003] The configuration of the RDS data is shown in Figs. 5A and 5B. The RDS data is formed, as shown in Fig. 5A, in units of groups, each group having 104 bits and consisting of four blocks. Each block has 26 bits consisting of 16-bit information words (m0 through m15) and 10-bit check words and offset words (c'0 through c'9).

[0004] The RDS data groups are classified according to the type of information, and group type 8A is used as a channel for broadcasting traffic information programs (traffic message channel (TMC)).

[0005] Fig. 5B illustrates the data configurations of group type 8A and group type 3A.

[0006] In group 8A, block A contains, as shown in Fig. 5B, a program identification (PI) code for identifying a broadcasting station represented by a country code, an area code, and a broadcasting station code. Block B contains, not only a four-bit group type code, but also various codes for message management and extended systems, for example, a one-bit short message code (S) indicating that this message is a short message, a one-bit group message ID code (G) indicating whether this message is a single group message transmitted in one group data or a multi group message transmitted in multi group data, and a three-bit traffic congestion duration (duration-and-persistence-of-the disturbance) code (DP) indicating an approximate duration of traffic congestion. The DP code has eight levels of the traffic congestion duration (0 to 4 hours).

[0007] Block C contains a two-bit diversion ID code (D) indicating the presence or absence of a diversion, a three-bit extent code indicating the location offset address, and an 11-bit event code indicating an event, for example, weather conditions, construction work, traffic congestion, or public transportation.

[0008] Block D contains a 16-bit location code indicating the location at which the event indicated by the event code is occurring.

[0009] Group 3A specifies a location table in which the relationship between the location code used in group 8A and the position is defined by a location table number (LTN).

5 **[0010]** More specifically, in group 3A, block A contains the PI code. In block B, not only a four-bit group ID code representing the group 3A, but also the group type using the RDS data of the group 3A, i.e., the group 8A, are indicated. Block C contains the LTN. In block D, CD48 indicating the application concerning the RDS data of the group 3A is fixed.

10 **[0011]** The LTN of the group 3A and the location code of the group 8A can specify the location at which the event indicated by the event code of the group 8A is occurring.

15 **[0012]** More specifically, a broadcast receiver decodes the data of the group 8A while selecting a required location table from a plurality of prestored location tables according to the LTN designated by the group 3A. The broadcast receiver can then obtain traffic information (traffic congestion, accidents, weather, etc.) and provides it to the user.

20 **[0013]** For example, in the location tables used in Germany, the location code is represented by a combination of code representing the Federal State (codes 1 to 16 assigned to the 16 Federal States), code representing the district, administrative section, and local district, highway code representing, for example, Autobahn or national routes, code representing the Autobahn exit, interchange, and service area, and code representing a road diverged from a highway. Each area or point can be hierarchically specified by the location code.

25 **[0014]** For receiving traffic information from the above-described RDS broadcasting and providing it to the user via an on-vehicle receiver, the following technique disclosed in, for example, Japanese Unexamined Patent Application Publication No. 2002-64391, is known. A car navigation system determines the country in which a vehicle (driver) is currently located (which is sometimes referred to as a "current country") and provides traffic information transmitted only from a broadcasting station in that country to the user without providing traffic information from broadcasting stations in other countries.

30 **[0015]** According to this technique, a driver driving (or user) in a certain country does not have to receive unnecessary information from the other countries. Thus, the user is not confused, and an unnecessary load is not imposed on the receiver.

35 **[0016]** In this technique, however, when moving from one country to another country, the user cannot obtain traffic information of the country to which the user is moving until he/she actually enters that country. Accordingly, even if traffic congestion is occurring one kilometer ahead of the user, the user cannot obtain information concerning the traffic congestion if it is occurring in another country. If traffic congestion is occurring across two countries, the navigation system may disadvantageously provide a congestion distance shorter than the actual distance for

the user since information only concerning the current country can be obtained.

[0017] EP-A-1 139 065 and EP-A-1 148 641 disclose on-vehicle traffic receivers which can switch a broadcasting station from which traffic information is received according to prediction means predicting movement of a vehicle.

SUMMARY OF THE INVENTION

[0018] Accordingly, it is an object of the present invention to provide an on-vehicle traffic information receiver for receiving traffic information which is broadcast according to the region and suitably providing traffic information to a user.

[0019] In order to achieve the above-described object, the present invention provides an on-vehicle traffic information receiver for receiving traffic information according to claim 1.

[0020] When a vehicle is moving from region A to region B, it is predicted that the vehicle is moving to region B while traveling in region A, and the reception of traffic information concerning region B is started. Accordingly, traffic information concerning the region to which the vehicle is moving can be obtained and provided to the user although the vehicle has not reached the region.

[0021] Even if the vehicle has not reached the destination region because of, for example, traffic congestion, after it is predicted that the vehicle is moving to the region, the latest traffic information concerning the current region can still be obtained while continuing receiving the traffic information concerning the region to which the vehicle is moving.

[0022] The present invention also provides a traffic information reception method for controlling the reception of traffic information according to claim 6.

[0023] According to the present invention, traffic information can be suitably provided to the user regardless of whether the vehicle remains in the same region or is moving to another region.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024]

Fig. 1 is a block diagram illustrating the configuration of a traffic information receiver according to an embodiment of the present invention;

Fig. 2 is a flowchart illustrating traffic information reception processing according to an embodiment of the present invention;

Figs. 3A, 3B, and 3C illustrate examples of the traffic information reception processing according to an embodiment of the present invention;

Figs. 4A and 4B illustrate examples of the traffic information reception processing according to an embodiment of the present invention; and

Figs. 5A and 5B illustrate formats of RDS data.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0025] The present invention is described in detail below with reference to the accompanying drawings through illustration of an embodiment.

[0026] The configuration of an on-vehicle traffic information receiver for receiving RDS broadcasting according to an embodiment of the present invention is shown in Fig. 1.

[0027] The traffic information receiver includes, as shown in Fig. 1, an antenna 1 for receiving radio waves broadcast from broadcasting stations, a front end (F/E) 2 for receiving a specific reception frequency channel, an intermediate-frequency (IM)-amplification/frequency modulation (FM)-detection circuit (IF/DET) 3 for conducting IM amplification and FM detection on an output signal of the F/E 2, a noise-cancellation/stereo-demodulation circuit (NC/MPX) 4 for conducting noise cancellation and stereo demodulation on an output signal of the IF/DET 3 and outputting the resulting signal to a speaker 12, an RDS decoder 5, a channel tuning circuit 6, a controller 7, an operation unit 8, a memory 9, a display unit 10, and a navigation system 11.

[0028] The RDS decoder 5 extracts traffic information from the RDS data contained in the IF signal output from the IF/DET 3, decodes the extracted RDS data, and sends it to the controller 7. The channel tuning circuit 6 inputs the frequency signal according to the broadcasting station designated by the controller 7 into the F/E 2 so as to switch the reception frequency channel in the F/E 2.

[0029] The navigation system 11 further includes the following items. A map data storage unit 112 stores road map data. A current position calculator 113 includes a speed sensor, a gyroscope, a global positioning system (GPS), etc. so as to calculate the current position of the vehicle by using the road map data. A route searcher 114 searches for a suitable route from the current position to a destination specified by the user. A driving guidance unit 115 generates a driving guidance image, for example, a mark indicating the current position, a route diagram illustrating a searched suitable route, or a mark indicating the destination on a map of the area around the current position. A navigation controller 111 controls the entirety of the navigation system 11.

[0030] The controller 7 controls the storage of traffic information transmitted from the RDS decoder 5 in the memory 9, the display of traffic information received within a predetermined past time and stored in the memory 9 on the display unit 10, and the display of driving guidance images generated by the driving guidance unit 115 and received via the navigation controller 111 on the display unit 10.

[0031] The display of traffic information on the display unit 10 may be performed as follows. The controller 7 sends traffic information received within a predetermined past time and stored in the memory 9 to the navigation system 11. The driving guidance unit 115 of the navigation system 11 generates a driving guidance image from

the traffic information received via the navigation controller 111 as information on the map. The controller 7 then controls the display of the driving guidance image generated by the driving guidance unit 115 on the display unit 10.

[0032] With this configuration, the controller 7 performs the following traffic information reception processing indicated by the flowchart of Fig. 2 to control the reception of traffic information to be displayed on the display unit 10.

[0033] The controller 7 performs the processing shown in Fig. 2 while regularly querying the navigation controller 111 to receive information concerning a country in which the vehicle is currently located. The navigation controller 111 determines a country containing the current position of the vehicle as the current country based on the map data and the current position calculated by the current position calculator 113, and responds to the controller 7.

[0034] Upon starting the traffic information receiving processing, in step 202, the controller 7 controls the channel tuning circuit 6 to change the reception frequency to search for the broadcasting station broadcasting the RDS data containing the PI code indicating the current country. Then, the controller 7 starts receiving the RDS data from the searched broadcasting station. The controller 7 also starts storing the traffic information decoded from the RDS data in the memory 9.

[0035] Then, in step 204, the controller 7 queries the navigation controller 111 as to whether the vehicle is moving to another country within predetermined L minutes (for example, 10 minutes). The navigation controller 111 then predicts whether the vehicle is moving to another country within the predetermined L minutes based on the current position, the current route, the map data, and the current driving speed. If it is predicted that the vehicle is moving to another country, the navigation controller 111 sends an affirmative response to the controller 7.

[0036] The controller 7 then determines in step 206 from this response whether it is predicted that the vehicle is moving to another country. If the outcome of step 206 is NO, the controller 7 continues receiving the RDS data containing the PI code indicating the current country from the corresponding broadcasting station.

[0037] If the outcome of step 206 is YES, the controller 7 checks in step 208 for traffic information decoded and stored in the memory 9 within a predetermined past time (for example, 20 minutes) from the RDS data containing the PI code of the predicted country. If such information is not stored, in step 210, the controller 7 searches for the broadcasting station broadcasting the RDS data containing the PI code indicating the predicted country, and starts receiving the RDS data of the searched broadcasting station. The controller 7 also starts storing the traffic information decoded from the received RDS data in the memory 9.

[0038] Then, the controller 212 determines in step 212 whether predetermined m minutes (for example, 25 minutes) have elapsed after starting receiving the RDS data

containing the PI code indicating the predicted country from the broadcasting station. If the result of step 212 is NO, the controller determines in step 214 whether the vehicle has moved to the predicted country. If the vehicle has moved to the predicted country before the predetermined m minutes have elapsed, the controller 7 returns to step 204.

[0039] It is now assumed that the vehicle is moving from country A to country B, as shown in Fig. 3A. In this case, when the vehicle has reached a point 301 in country A, it can be predicted that the vehicle is entering country B, and starts receiving traffic information concerning country B. Accordingly, traffic information concerning a country to which the vehicle is moving can be obtained in advance and provided to the user before the vehicle enters the country. In this case, since the latest traffic information concerning country A is still stored in the memory 9, it can be provided to the user.

[0040] Referring back to Fig. 2, if the controller 7 determines in step 208 from the RDS data containing the PI code of the predicted country that traffic information decoded within a predetermined past time (for example, 20 minutes) is stored in the memory 9, the process proceeds to step 216. The controller 7 then determines in step 216 whether n minutes (for example, 15 minutes) have elapsed after the PI code contained in the RDS data was last switched, i.e., after the country from which traffic information is received was last switched. If the outcome of step 216 is YES, the process proceeds to step 210. If the result of step 216 is NO, the controller 7 waits until n minutes have elapsed, and proceeds to step 210. If it is determined in step 218 that the vehicle has moved to the predicted country before n minutes have elapsed, the controller 7 queries the navigation controller 111 in step 220 as to whether the vehicle is moving to another country within L minutes. If the controller 7 determines in step 222 that the vehicle is moving to another country within L minutes, the process returns to step 208. It is assumed that n minutes is a sufficient time for obtaining traffic information on a certain country from RDS data containing the PI code of that country.

[0041] When the vehicle is moving in the order of country A, country B, country A, and country B, as shown in Fig. 3B, traffic information is received in the order of country A, country B, country A, and country B if steps 208 and 216 through 222 are not provided in the above-described processing. However, when the vehicle is moving frequently in and out of more than one country, traffic information on one country sometimes cannot be obtained sufficiently before switching to another country. For example, when the vehicle is moving in the order of country A, country B, and country A, traffic information concerning country B sometimes cannot be obtained sufficiently. In the route from country A, country B, and country A shown in Fig. 3B, it is not always necessary to obtain traffic information concerning country A while the vehicle is traveling in a zone 311 and the zone in country B before the zone 311 since the latest traffic information concern-

ing country A has already been obtained when the vehicle was first traveling in country A and stored in the memory 9.

[0042] Accordingly, in steps 208 and 216, the second reception of the traffic information concerning country A is set to be shorter to extend the time to obtain the traffic information on country B.

[0043] Steps 218, 220, 222, and 208 are provided for a case where the vehicle is moving in the order of country A, country B, country A, and country C, as shown in Fig. 3C. In this case, priority is given to the reception of traffic information concerning country C, which is not yet stored in the memory 9, over the extension of the time for obtaining the traffic information concerning country B in the zone 311 after the vehicle has moved in the order of country A, country B, and country A.

[0044] In this manner, when information concerning a country from which traffic information is to be subsequently received is already stored in the memory 9, the time for currently receiving traffic information can be extended. This technique is also applicable to when a vehicle remains in the same country without moving to another country.

[0045] Referring back to Fig. 2, if it is determined in step 212 that the predetermined m minutes (for example, 25 minutes) have elapsed after starting to receive the RDS data containing the PID code indicating the predicted country from the corresponding broadcasting station, the traffic-information alternate reception is started in step 224. The predetermined m minutes is a sufficient time, in relation to the L minutes used for predicting that the vehicle is moving to another country, for determining that the vehicle is caught in traffic congestion since the vehicle has not moved to the predicted country even after the lapse of m minutes.

[0046] The traffic-information alternate reception is to alternately receive, every predetermined minutes (for example, 15 minutes) for each country, RDS data containing the PI code of the current country from the corresponding broadcasting station and RDS data containing the PI code of the country to which the vehicle is moving within predetermined minutes (for example, 20 minutes).

[0047] Upon starting the traffic-information alternate reception, the controller 7 determines in step 226 whether the vehicle has moved to the predicted country. If the outcome of step 226 is YES, the controller 7 switches in step 228 the reception broadcasting station to the broadcasting station from which the RDS data containing the PI code indicating the position of the current country is received. Thereafter, the process returns to step 204.

[0048] It is now assumed, as shown in Fig. 4A, that it is predicted at a point 401 in country A that the vehicle is moving to country B and starts receiving the traffic information concerning country B, however, the vehicle has not reached country B because of traffic congestion. In this case, the above-described alternate traffic-information reception processing is started to alternately receive traffic information concerning country A and traffic infor-

mation concerning country B in a zone from a point 402 at which traffic congestion has been detected to country B. Accordingly, the traffic information on country B can be received before the vehicle moves to country B, and also, the reception of the latest traffic information concerning country A can be continued.

[0049] If, as shown in Fig. 4B, it is predicted in country A that the vehicle is moving to country C immediately after moving to country B, not only traffic information concerning country A and country B, but also traffic information concerning country C can be obtained in a zone from a point 402 at which traffic congestion has been detected to country B. Accordingly, traffic information concerning a country to which the vehicle is moving can be obtained from the route and provided to the user.

[0050] In the foregoing embodiment, the reception of traffic information is switched according to the country based on the PI code contained in the RDS data. If, however, the countries are not associated with the areas covered by the location table, the reception of traffic information may be switched according to the area covered by the location table based on the location table number contained in the RDS data.

[0051] In the above-described embodiment, the navigation system 11 predicts whether the vehicle is moving to another country within the predetermined L minutes based on the route. However, the navigation system 11 may predict the movement of a vehicle even when a route is not set. More specifically, the navigation system 11 may predict the movement of a vehicle based on the road in which the vehicle is traveling by referring to the current position, the driving direction, and the map data.

[0052] In this embodiment, the factor for predicting the movement of a vehicle to another country is the predetermined L minutes. Instead, another factor may be used, for example, the navigation system 11 may predict the movement of a vehicle to another country within a predetermined driving distance.

[0053] If the traffic information receiver is adapted to simultaneously receive broadcasting from a plurality of broadcasting stations, it is preferable that traffic information concerning a current country and traffic information concerning a country to which the vehicle is moving be simultaneously received. In this case, regardless of whether the vehicle is moving to another country, traffic information concerning the current country and traffic information concerning an adjacent country may be simultaneously received.

Claims

1. An on-vehicle traffic information receiver for receiving traffic information which is broadcast from a broadcasting station comprising:

current position calculation means (113) for calculating a current position of the vehicle;

- traffic information reception means (6) for receiving traffic information concerning a first region containing the current position from a first broadcasting station;
- prediction means (11) for predicting a movement of the vehicle from said first region towards a second region; and
- traffic-information prior-reception control means (7) for switching said traffic information reception means (6) from said first broadcasting station to a second broadcasting station broadcasting traffic information concerning said second region when the prediction means (11) predicts said movement of the vehicle;
- characterized in that;**
- when the vehicle has not reached said second region after a predetermined lapse of time after the prediction means (11) predicted said movement of the vehicle, the traffic-information prior-reception control means (7) is adapted to switch said traffic information reception means (6) between a plurality of broadcasting stations alternately, said plurality of broadcasting stations including at least said second broadcasting station and said first broadcasting station.
2. The on-vehicle traffic information receiver according to Claim 1, wherein the prediction means (11) is a navigation system (11).
 3. The on-vehicle traffic information receiver according to Claim 1, wherein the navigation system (11) predicts the movement of the vehicle based on a route.
 4. The on-vehicle traffic information receiver according to any one of Claims 1 to 3, wherein each of said regions is a country.
 5. The on-vehicle traffic information receiver according to any one of Claims 1 to 4, wherein the traffic information is broadcast according to the radio data system standard.
 6. A traffic information reception method for controlling the reception of traffic information in an on-vehicle traffic information receiver, which is broadcast from a broadcasting station, comprising:
 - a first step of calculating a current position of the vehicle;
 - a second step of receiving traffic information from a first broadcasting station concerning a first region containing the current position from a first broadcasting station;
 - a third step of predicting movement of the vehicle from said first region towards a second region;
 - a fourth step of switching the reception of traffic

information from said first broadcasting station to a second broadcasting station broadcasting traffic information concerning said second region, when said movement of the vehicle is predicted; and

characterized by the step of switching reception of traffic information between a plurality of broadcasting stations alternately, said plurality of broadcasting stations including at least said second broadcasting station, and said first broadcasting station, when the vehicle has not reached said second region after a predetermined lapse of time after said movement of the vehicle is predicted.

Patentansprüche

1. Fahrzeuggebundener Verkehrsnachrichtenempfänger zum Empfangen von Verkehrsnachrichten, die von einer Rundfunkstation gesendet werden, umfassend:

Berechnungsmittel (113) für die Ist-Position zum Berechnen einer aktuellen Position des Fahrzeugs;

Verkehrsnachrichtenempfangsmittel (6) zum Empfangen von Verkehrsnachrichten, die eine erste Region betreffen, welche die aktuelle Position ab einer ersten Rundfunkstation enthalten;

Vorhersagemittel (11) zum Vorhersagen einer Bewegung des Fahrzeugs aus der genannten ersten Region in Richtung einer zweiten Region; und

Steuermittel (7) für Verkehrsnachrichten vor dem Empfang zum Umschalten des genannten Verkehrsnachrichtenempfangsmittels (6) von der genannten ersten Rundfunkstation auf eine zweite Rundfunkstation, die Verkehrsnachrichten bezüglich der genannten zweiten Region sendet, wenn das Vorhersagemittel (11) die genannte Bewegung des Fahrzeugs vorhersagt;

dadurch gekennzeichnet, dass;

wenn das Fahrzeug die genannte zweite Region nach einem vorbestimmten Zeitablauf nicht erreicht hat, nach dem das Vorhersagemittel (11) die genannte Bewegung des Fahrzeugs vorhergesagt hat, das Steuermittel (7) für Verkehrsnachrichten vor dem Empfang, angepasst wird, das genannte Verkehrsnachrichtenempfangsmittel (6) zwischen einer Vielzahl von Rundfunkstationen abwechselnd zu schalten, wobei die genannte Vielzahl von Rundfunkstationen wenigstens die genannte zweite Rundfunkstation und die genannte erste Rundfunkstation einschließt.

2. Fahrzeuggebundener Verkehrsnachrichtenempfänger nach Anspruch 1, wobei das Vorhersagemittel (11) ein Navigationssystem (11) ist.
3. Fahrzeuggebundener Verkehrsnachrichtenempfänger nach Anspruch 1, wobei das Navigationssystem (11) die Bewegung des Fahrzeugs auf einer Route beruhend vorhersagt. 5
4. Fahrzeuggebundener Verkehrsnachrichtenempfänger nach irgendeinem der Ansprüche 1 bis 3, wobei jede der genannten Regionen ein Land ist. 10
5. Fahrzeuggebundener Verkehrsnachrichtenempfänger nach irgendeinem der Ansprüche 1 bis 4, wobei die Verkehrsinformation gemäß der Funkdatensystemnorm gesendet wird. 15
6. Verkehrsnachrichtenempfangsverfahren zur Steuerung des Empfangs von Verkehrsnachrichten in einem fahrzeuggebundenen Verkehrsnachrichtenempfänger, die ab einer Rundfunkstation gesendet werden, umfassend: 20
 - einen ersten Schritt zur Berechnung einer Ist-Position des Fahrzeugs; 25
 - einen zweiten Schritt zum Empfangen von Verkehrsnachrichten ab einer ersten Rundfunkstation, die eine erste Region betreffen, welche die Ist-Position ab einer ersten Rundfunkstation enthalten; 30
 - einen dritten Schritt der Vorhersage der Bewegung des Fahrzeugs aus der genannten ersten Region in Richtung einer zweiten Region;
 - einen vierten Schritt der Umschaltung des Empfangs der Verkehrsnachrichten ab der genannten ersten Rundfunkstation auf eine zweite Rundfunkstation, die Verkehrsnachrichten bezüglich der genannten zweiten Region sendet, wenn die genannte Bewegung des Fahrzeugs vorhergesagt wird; und 40
 - gekennzeichnet durch** den Schritt der abwechselnden Umschaltung des Empfangs von Verkehrsnachrichten zwischen einer Vielzahl von Rundfunkstationen, wobei die genannte Vielzahl von Rundfunkstationen wenigstens die genannte zweite Rundfunkstation und die genannte erste Rundfunkstation einschließt, wenn das Fahrzeug nach einem vorbestimmten Zeitablauf, nach dem die Bewegung des Fahrzeugs vorhergesagt ist, die genannte zweite Region nicht erreicht hat. 45

Revendications

1. Dispositif embarqué de réception d'informations de trafic servant à recevoir des informations de trafic

qui sont diffusées en provenance d'une station de radiodiffusion comportant :

un moyen de calcul de position en cours (113) servant à calculer une position en cours du véhicule ;
 un moyen de réception d'informations de trafic (6) servant à recevoir des informations de trafic se rapportant à une première région contenant la position en cours en provenance d'une première station de radiodiffusion ;
 un moyen de prédiction (11) servant à prédire un mouvement du véhicule en provenance de ladite première région vers une deuxième région ; et
 un moyen de commande avant réception d'informations de trafic (7) servant à faire commuter ledit moyen de réception d'informations de trafic (6) de ladite première station de radiodiffusion à une deuxième station de radiodiffusion à des fins de radiodiffusion d'informations de trafic se rapportant à ladite deuxième région quand ledit moyen de prédiction (11) prédit ledit mouvement du véhicule ;

caractérisé en ce que :

quand le véhicule n'a pas atteint ladite deuxième région au bout d'un délai prédéterminé une fois que le moyen de prédiction (11) a prédit ledit mouvement du véhicule, le moyen de commande avant réception d'informations de trafic (7) est adapté pour faire commuter ledit moyen de réception d'informations de trafic (6) entre une pluralité de stations de radiodiffusion de manière alternée, ladite pluralité de stations de radiodiffusion comprenant au moins ladite deuxième station de radiodiffusion et ladite première station de radiodiffusion.

2. Dispositif embarqué de réception d'informations de trafic selon la revendication 1, dans lequel le moyen de prédiction (11) est un système de navigation (11).
3. Dispositif embarqué de réception d'informations de trafic selon la revendication 1, dans lequel le système de navigation (11) prédit le mouvement du véhicule en fonction d'un itinéraire.
4. Dispositif embarqué de réception d'informations de trafic selon l'une quelconque des revendications 1 à 3, dans lequel chacune desdites régions est un pays.
5. Dispositif embarqué de réception d'informations de trafic selon l'une quelconque des revendications 1 à 4, dans lequel les informations de trafic sont diffusées en fonction de la norme du système de radio-communication de données.

6. Procédé de réception d'informations de trafic servant à commander la réception d'informations de trafic dans un dispositif embarqué de réception d'informations de trafic qui sont diffusées en provenance d'une station de radiodiffusion, comportant :

une première étape consistant à calculer une position en cours du véhicule ;
 une deuxième étape consistant à recevoir des informations de trafic en provenance d'une première station de radiodiffusion se rapportant à une première région contenant la position en cours en provenance d'une première station de radiodiffusion ;
 une troisième étape consistant à prédire un mouvement du véhicule en provenance de ladite première région vers une deuxième région ;
 une quatrième étape servant à faire commuter la réception d'informations de trafic en provenance de ladite première station de radiodiffusion à une deuxième station de radiodiffusion à des fins de radiodiffusion d'informations de trafic se rapportant à ladite deuxième région ; et
caractérisé par l'étape consistant à faire commuter la réception d'informations de trafic entre une pluralité de stations de radiodiffusion de manière alternée, ladite pluralité de stations de radiodiffusion comprenant au moins ladite deuxième station de radiodiffusion, et ladite première station de radiodiffusion, quand le véhicule n'a pas atteint ladite deuxième région au bout d'un délai prédéterminé une fois que ledit mouvement du véhicule est prédit.

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FIG. 1

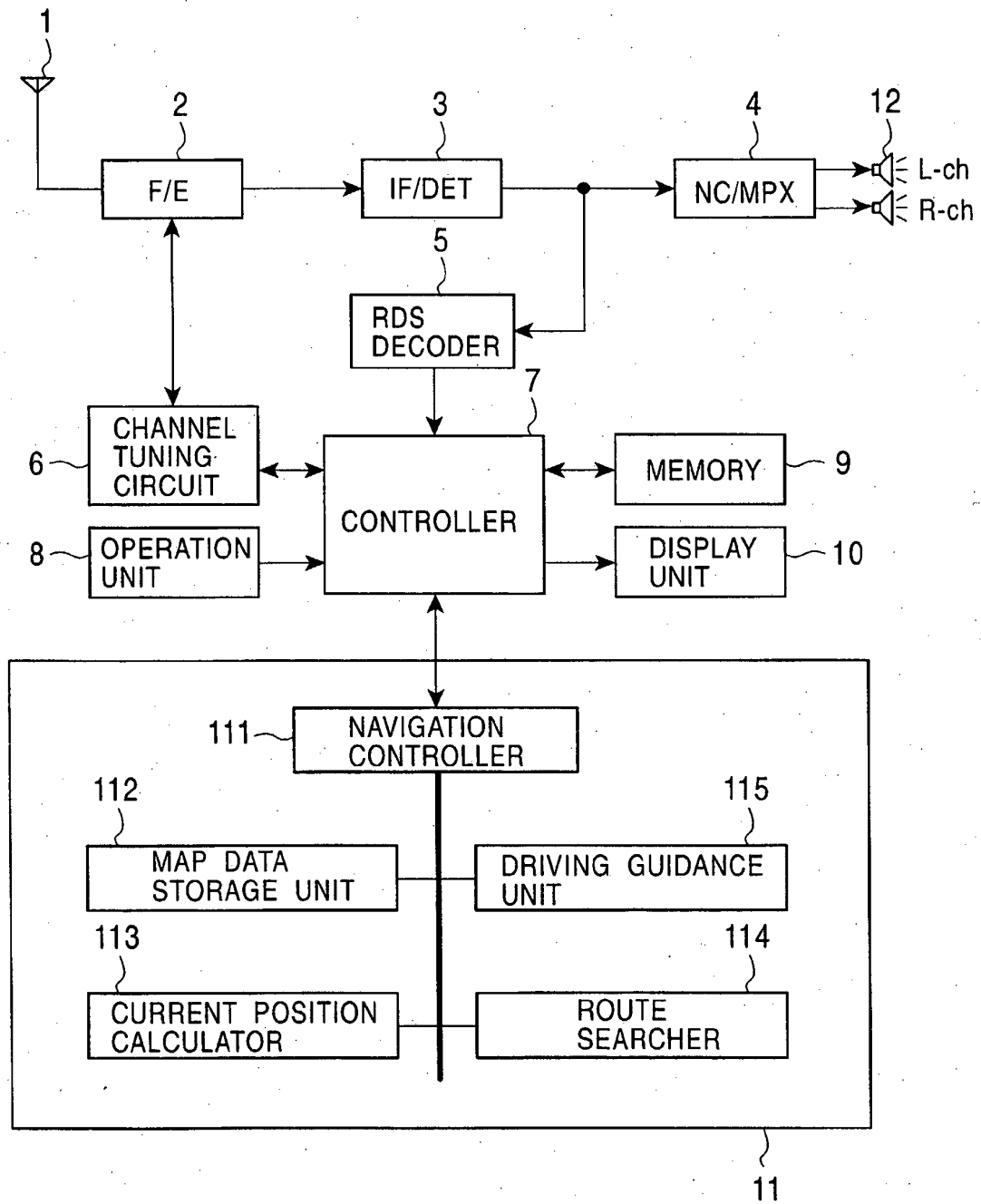


FIG. 2

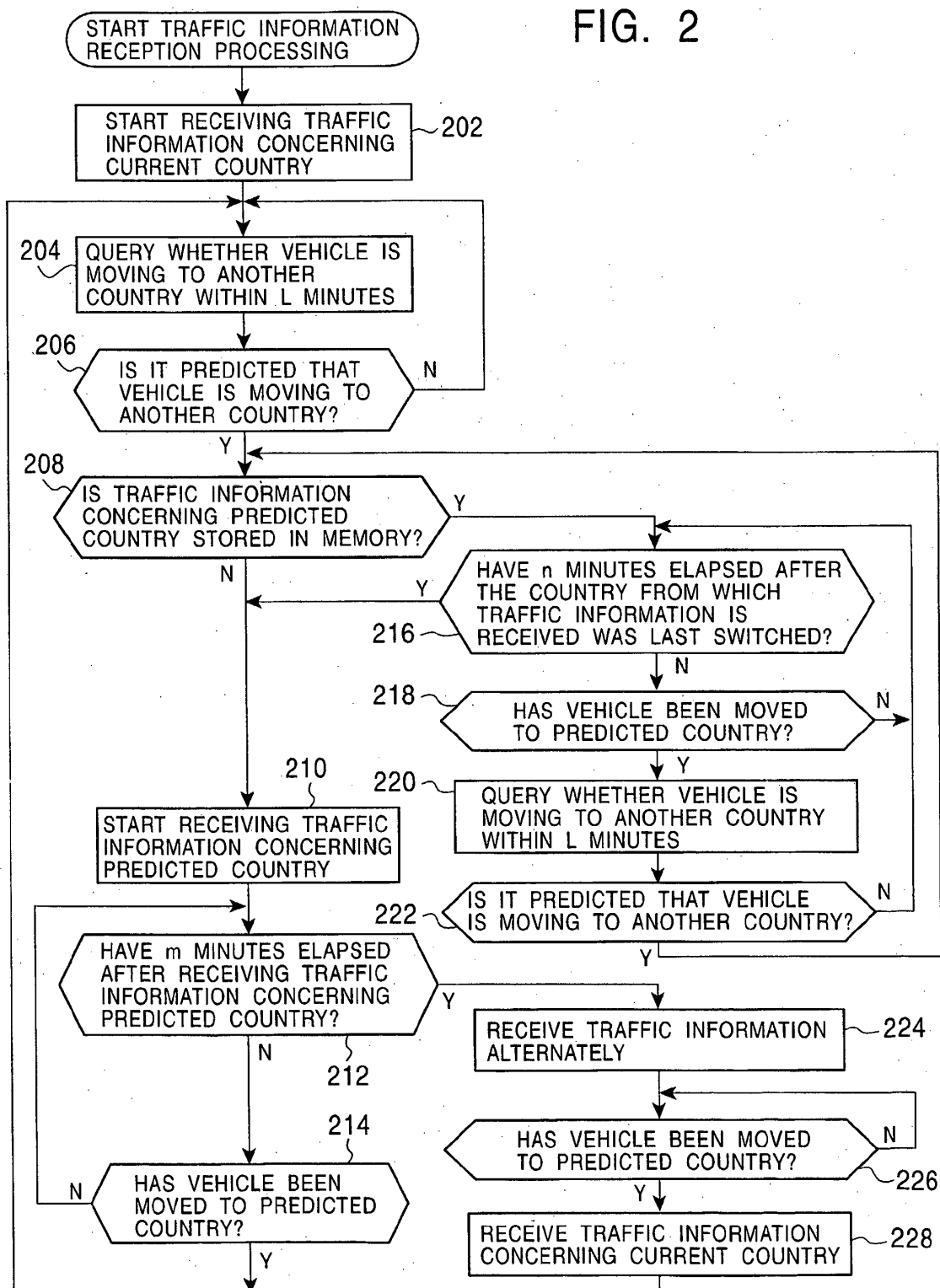


FIG. 3A

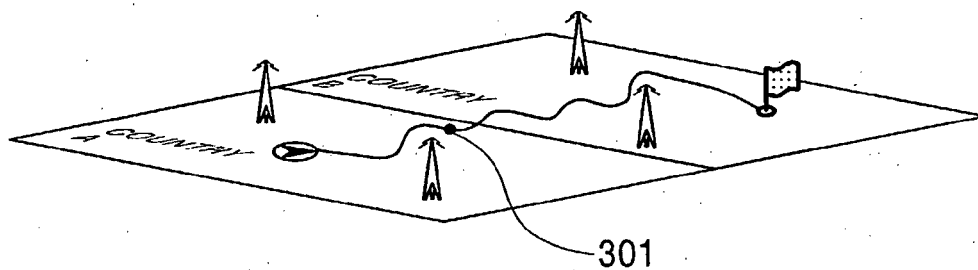


FIG. 3B

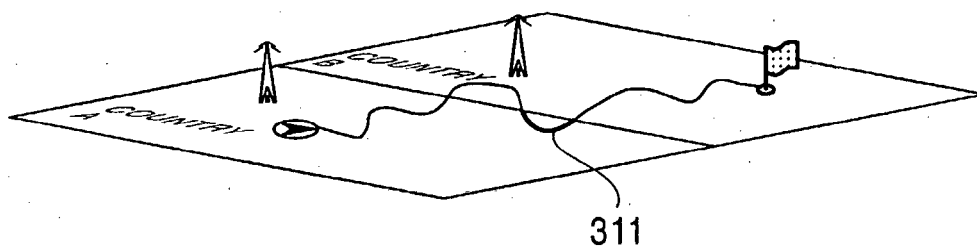


FIG. 3C

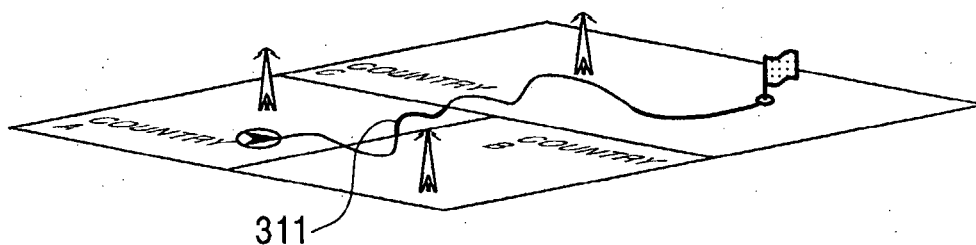


FIG. 4A

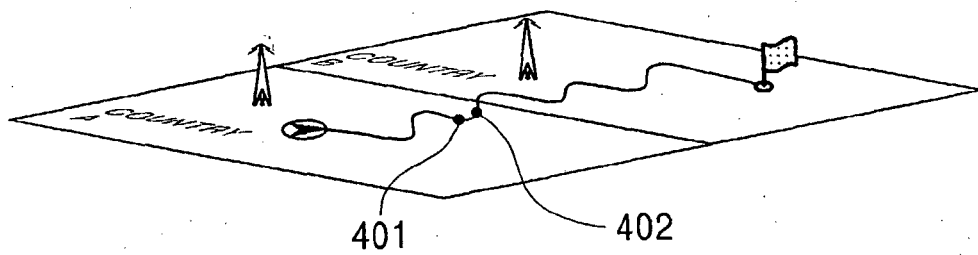


FIG. 4B

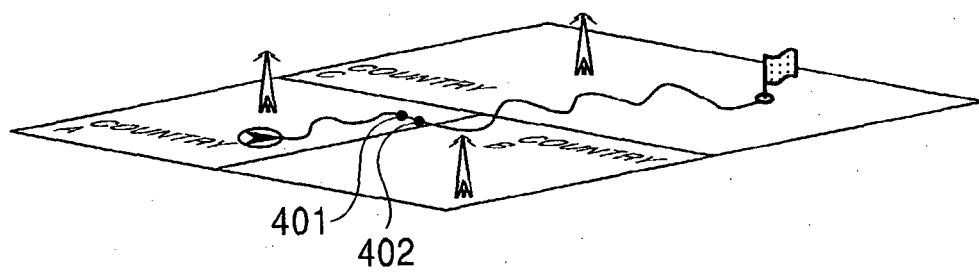


FIG. 5A

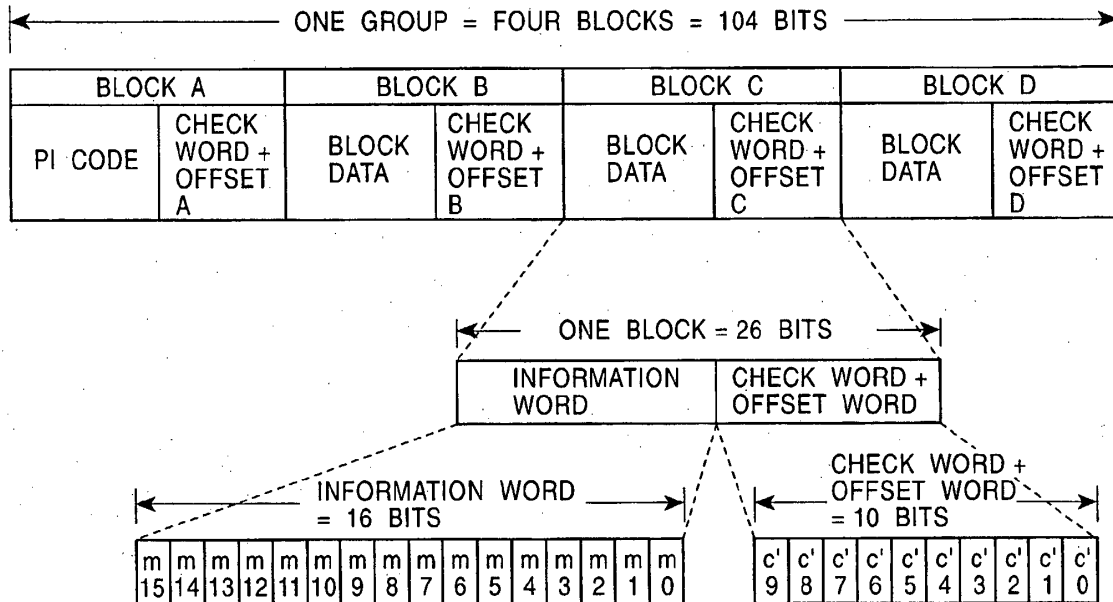
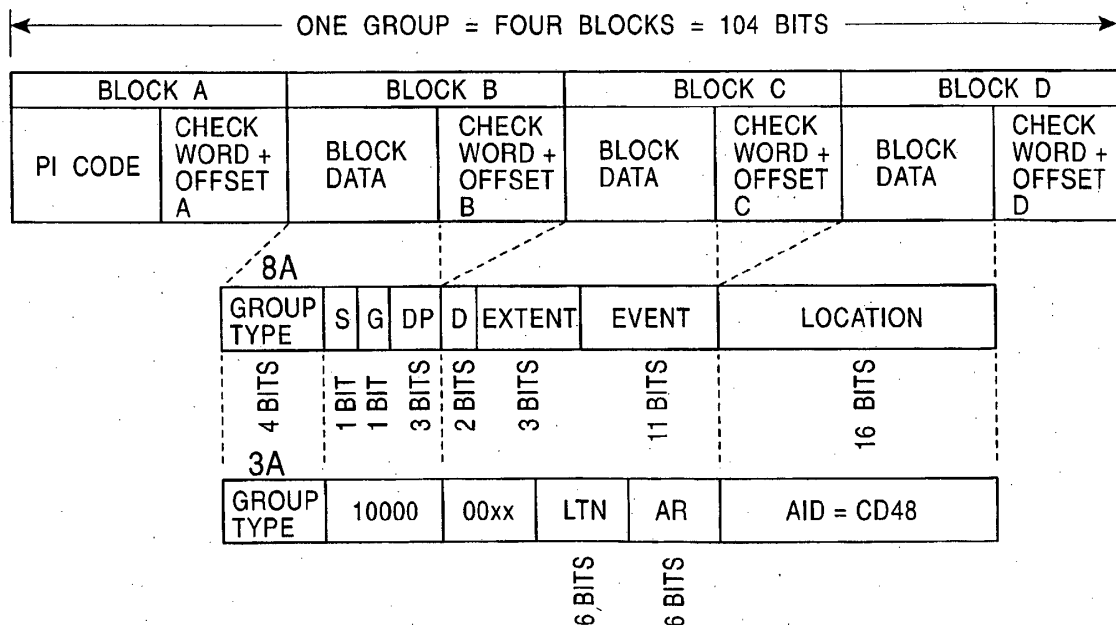


FIG. 5B



REFERENCES CITED IN THE DESCRIPTION

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