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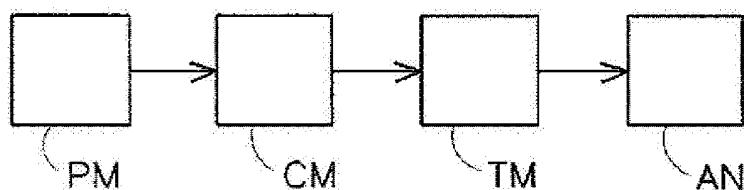
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(54)

Radio wave transmitter.

(57)

A radio wave transmitter for transmitting alarm signals to radio wave receivers in an area, comprises a transmitter module, arranged for transmitting a radio signal at at least one carrier frequency. The radio wave transmitter further comprises a control module for controlling the transmitter module. The control module comprises a memory for storage of radio broadcasting data related to the area, the control module being arranged to determine the at least one carrier frequency from the radio broadcasting data as stored in the memory and to control the transmitter module so as to transmit the radio signal at the at least one carrier frequency.



NL C 2004016

Dit octrooi is verleend ongeacht het bijgevoegde resultaat van het onderzoek naar de stand van de techniek en schriftelijke opinie. Het octrooischrift komt overeen met de oorspronkelijk ingediende stukken.

Title: Radio wave transmitter

The invention relates to a radio wave transmitter for transmitting alarm signals to radio wave receivers, an emergency vehicle comprising such radio wave transmitter and a method for transmitting alarm signals to radio wave receivers in an area.

- 5 Emergency vehicles such as ambulances, police and others have made use of acoustic and visual alarming since many years, including for example sirens, blue and/or red lights etc. In the past years, vehicles have become better isolated which results in a driver of the vehicle less easily recognizing a siren, furthermore audio devices such as radio, CD or computer music files, and corresponding audio installations have become better and able to
- 10 produce louder sounds. At the same time, traffic has become more dense. Furthermore, mobile telephony and associated hands free transmission in vehicles ("car kits") also tend to deviate the attention of the driver from any outside signalling such as from an emergency vehicle. These factors together may have resulted in the past years in more and more difficulties for a staff of an emergency vehicle to reach a desired destination in due time.
- 15 Attempts have been made to signal drivers of vehicles by means of radio transmission, so as to make them aware of an approaching emergency vehicle. Thereby, use has been made of a radio transmitter which transmits a radio wave in a public radio broadcasting frequency band, so as to warn a driver that has switched on his radio receiver. These solutions have however until now been unsatisfactory given the many possible
- 20 frequencies to which a radio receiver could be tuned. Taking the FM band as an example, a frequency band is assigned reaching from 87.5 - 108 MHz. In this frequency band, a spacing of for example 100 kHz, may be applied. In dense regions, a frequency spacing may even be reduced to 50 kHz between stations. Thereby, referring to the example of the FM band, different stations may transmit at roughly 200 - 400 different frequencies within this band. An
- 25 emergency vehicle approaching a traffic situation would want to provide alarm signals to drivers of different vehicles, each of which may have his or her radio tuned to a different frequency. In order to warn a driver sufficiently early to provide any benefit at all, a warning would have to be transmitted at each respective frequency within seconds or an even shorter time frame. As a result, in order to be able to warn drivers at each possible
- 30 frequency, hundreds of possible frequencies would have to be covered by warning device virtually simultaneously. Furthermore, at each of the frequencies, a signal would have to be transmitted for a sufficient long time to allow the driver to be aware of the situation, which

practical implementations have appeared to fail for the reasons cited above. Furthermore, it is to be noted that emergency vehicles such as ambulances are normally equipped with a large range of electronic devices such as medical measurement equipment, medical patient surveillance equipment, communication equipment, etc, which would risk to be disturbed by a radio wave transmitter that would transmit radio signals at each of the above referenced hundreds of frequencies within the referred frequency band. This may especially be the case, as a transmission power of the radio wave transmitter would have to be sufficiently high at each of the frequencies to "push away" a regular transmission of a radio station at such frequency.

The invention intends to provide a workable warning for drivers that an emergency vehicle is within vicinity.

In order to reach this goal, the radio wave transmitter in accordance with an embodiment of the invention comprised the features of claim 1. In accordance with claim 1, a transmitter module is provided for transmitting a radio signal at at least one carrier frequency. Furthermore, a control module is provided for controlling the transmitter module. The control module comprises a memory in which data can be or is stored providing information about a radio broadcasting spectrum at a certain position, respectively in a certain (coverage) area. The control module can now specifically control the transmitter module so as to transmit one or more radio signals at the specific carrier frequencies at which radio stations are available at that specific position resp. in that specific area. As a result, the radio wave transmitter does not need to transmit in a whole frequency band, such as a whole FM band, but in stead thereof may be operated so as to transmit a radio signal at the specific carrier frequencies at which radio stations are active at that specific position.

In an embodiment, the control module further comprises a position data input for entry of a position data from a position measurement system, the position measurement system to measure a position of the radio wave transmitter and/or the vehicle to which it is attached, the control module being arranged to take account of the position data when determining the at least one carrier frequency. By making use of position data, such as derived from a GPS position measurement system or other position measurement system, a larger region may be covered which allows the radio wave transmitter, or the emergency vehicle comprising it, to move throughout the region, the position data from the position measurement system thereby providing information on the actual position, and the control module to take account of the position when determining the at least one carrier frequency, so as to take account of differences in the frequency spectrum at different positions in the region.

In a preferred embodiment, the radio broadcasting data comprises at least one of antenna position, antenna height, and transmission power of radio broadcasting

transmitters, and wherein the control module is arranged to determine a radio broadcasting spectrum at the position identified by the position data, from the radio broadcasting data, and to control the transmitter module in accordance with the determined radio broadcasting spectrum. From data such as antenna position, antenna height and transmission power of
5 one or more radio broadcasting transmitters, a radio spectrum at a certain position may be determined. The transmitter module may then transmit the signal in accordance with the determined spectrum so as to specifically transmit the alarm signals at the frequencies of radio stations that provide, according to the calculation, a usable signal strength at the determined position. As a result, using only a limited amount of data, namely characteristics
10 of radio transmitters that transmit into an area of interest.

A data message may be generated and transmitted with the radio signal for one or each of the carrier frequencies. The data message may for example comprise an RDS message thereby transmitting e.g. a text message to be displayed on a display of the radio wave receiver, a code for stopping a play-back (such as a CD play-back or a play-back of a
15 computer music file), or an RDS message to put the radio wave receiver in an emergency mode in which normal music or audio reproduction is interrupted. The data may also comprise a TMC message thereby allowing to provide a message to e.g. a navigation system which may apply the TMC message to provide a warning on a display of the navigation system and/or to provide the user with router direction so as to direct it away from
20 the intended route of the emergency vehicle. In case of multiple carrier frequencies simultaneously, the same or different data messages may be transmitted via each carrier frequency.

In case a plurality of radio stations are available at a certain position, each transmitting at a different carrier frequency, the radio wave transmitter may transmit a signal
25 at each of those frequencies simultaneously, however, depending on the hardware of the radio wave transmitter, it may also be possible that a sequential transmission of the carrier frequencies or of subsets of the carrier frequencies are provided, which may for example be advantageous in a situation where more transmissions at different carrier frequencies are required than the amount of carrier frequencies that can be transmitted at a same time by
30 the radio wave transmitter.

On each of the carrier frequencies, a warning tone signal can be transmitted (e.g. modulated onto the carrier) so as to alarm a driver of the vehicle in question.

In an embodiment, the radio wave transmitter may comprise a tachometer input for receiving tachometer data providing information about a speed of the vehicle to which the
35 radio wave transmitter is attached, the control module of the radio wave transmitter thereby being arranged to control an output power of the transmitter module in accordance with the received tachometer data so as to adapt the output power to the speed of the vehicle: if the

vehicle is driving at a higher speed, drivers in a larger range are to be alarmed, hence requiring a higher transmission power. The radio signal transmitted by the radio wave transmitter will, within an area, e.g. an area surrounding the emergency vehicle to which the radio wave transmitter is mounted, transmit the radio signal at a carrier frequency which may correspond to a frequency of a public radio station and at a power level with which the public radio station transmission will be overridden within that area, thereby effectively "pushing away" the public radio station in the area. A listener to the radio station, including drivers of vehicles, will, in stead of receiving the public radio station, be warned by the alarm signal transmitted by the radio wave transmitter.

10 The invention further comprises an emergency vehicle comprising the radio wave transmitter according to the invention.

Still further, the invention comprises a method for transmitting alarm signals to radio wave receivers in accordance with claim 11. With the method, similar advantages and effects may be achieved as with the radio wave transmitter. Furthermore, similar preferred
15 embodiments as described above with reference to the radio wave transmitter according to the invention, are also applicable to the method according to the invention, thereby achieving same or similar effects.

Further preferred embodiments, advantages and features of the invention will become clear from the appended drawings, in which non-limiting embodiments of the
20 invention are depicted, wherein:

Fig.1 depicts a highly schematic block diagram of a radio wave transmitter according to the invention;

Fig. 2 depicts a highly schematic block diagram of control module of the radio wave transmitter according to fig. 1;

25 Fig. 3 depicts a table based on which an embodiment of a memory contents in a accordance with embodiments of the invention will be explained and

Fig. 4 depicts radio broadcasting transmitters in a region based on which an aspect of the invention will be explained.

30 Fig. 1 depicts a block diagram of a radio wave transmitter comprising a position measurement module PM as a GPS receiver, a control module such as a microprocessor based control, a transmitter module TM comprising a radio wave transmitter, and an antenna AN for transmitting the radio signal as generated by the transmitter module into an area. The position measurement system PM provides at an output thereof position data in the form of
35 any suitable signal, such as a digital data signal, which is transmitted by any suitable means, such as a data bus, a direct data connection, wireless transmission, serial or parallel electric data connection to the control module CM. The control module CM comprises any suitable

control device, such as a microprocessor, microcontroller, programmable integrated circuit, programmable logic circuit (PLC), etc and a memory, referred to in fig. 2 as control device CD and memory MM. The control module is connected to the transmitter via any suitable connection including analogue, digital, etc the transmitter in response to a control signal

5 from the control module generating a radio signal at the carrier frequencies in question to be transmitted via the antenna AN. Depicted in fig. 2, the control module CM comprises a memory MM, the memory for storage of radio broadcasting data e.g. related to a region. Making use of the data in the memory, the control module is able to determine at which frequencies radio stations will be active in the region in question. Thereby, in stead of

10 transmitting radio signals at any frequency or at arbitrary frequencies or at alternating frequencies in the radio band, the radio wave transmitter may according to an aspect of the invention, transmit the alarm signals in an area specifically at the frequencies at which, in that area, radio stations are transmitting, hence the frequencies at which radio wave receivers will be turned in that area. As a result, time loss due to transmission at many,

15 alternating frequencies, resulting in possible delays until the frequency at which a particular radio wave receiver in the area is tuned, has been reached, avoiding possible access disturbance to sensitive equipment in the emergency vehicle (medical measurement and monitoring equipment), and furthermore allowing to simplify the design and construction of the radio wave transmitter, as hardware that would enable the transmission at possibly even

20 hundreds of radio carrier frequencies at a same time, which would be required in solutions according to the state of the art, may significantly be reduced as the transmitter would, according to an aspect of the invention, only require to transmit a signal with carrier frequencies corresponding to the frequencies of radio stations that can be received in the particular area. In particular, in case an emergency vehicle equipped with the radio wave

25 transmitter would only be employed in a certain, restricted geographical zone, such as a part of a city, throughout which geographical zone the same radio stations are receivable and at the same frequencies, a measurement of the position of the vehicle may be omitted, thereby making it possible to omit an entry of the position data. In that case, a one time programming of those frequencies, or related data into the memory MM of the control

30 module CM may be sufficient. In case of application of the radio wave transmitter in a more wide geographic zone, over which differences in the radio spectrum may be observed, measurement of the position, and taking into account the position when determining the carrier frequencies for transmission, may be advantageous. Thereby, the local situation in the particular area where the vehicle is present, may be taken into account. In practical

35 situations, the transmitter will transmit the radio signal with a transmission power that is sufficient to overrule the radio station at those frequencies in an area of several tenths to several hundreds of meters around, preferably in front of the emergency vehicle. Thereto, a

transmission power of in general 100 milliWatt per carrier will be sufficient, however strongly depending on the local field strength of the radio station in question. The position of the may be measured periodically or constantly so that, when the vehicle moves, the required carrier frequencies and the corresponding transmission powers may be determined periodically, so as to adapt them to the radio spectrum in situ. The carrier frequencies and corresponding transmission powers may thus change dynamically as the position changes. In order to determine the carrier frequencies at a certain position, several techniques may be used. A first example will be described with reference to fig. 3.

Fig. 3 depicts a table in which channels in the radio frequency spectrum are set out against a plurality of different regions, each region being referred to by a letter A, B, C, D etc. The channels at which a radio transmission of a radio station may take place are referred to by respective numbers 1, 2, 3, etc. As can be seen in fig. 3 in this example in the geographical zone referred to by A, transmission of radio stations takes place at channels 1, 4 and 8, while in the geographical zone B, transmission takes place at channels 2 and 4, etc. Having such data available in the memory MM, the measurement of the position will allow the control module to define in which zone the vehicle is at present, thereby allowing to look up the corresponding radio stations in a table in accordance with fig. 3. The control module may now control the transmission module to transmit at carrier frequencies corresponding to the channels retrieved from the table.

Alternatively to, or supplementary to the technique described with reference to fig. 3, a technique will now be described with reference to fig. 4. Fig. 4 schematically depicts a map of a region in which radio broadcasting transmitters RB1, RB2, RB3 and RB4 are located. Each of the radio broadcasting transmitters transmits radio stations each at a carrier frequency and each having a particular transmission power. Typically, different carrier frequencies are applied by different radio broadcasting transmitters RB1, RB2, RB3, RB4, however, it may also be the case that the same or partly the same carrier frequencies are applied. In the memory MM of the control module CM, the positions, antenna height and transmission power of the radio broadcasting transmitters are stored, possibly in combination with other data such as names of the radio stations, RDS data such as pi-codes, etc, which enable the control module to calculate a to be expected spectrum at each position within reach of one or more of the radio broadcasting transmitters RB1 - RB4. Radio broadcasting transmitter RB1 transmits some radio stations which are receivable in a range indicated by A, while also some stations are transmitted at a higher transmission power and being able to be received in the range A1. The radio stations transmitted by radio broadcasting transmitter RB2 are receivable in range B and the radio stations transmitted by radio broadcasting transmitter RB3 and RB4 are receivable in the ranges C and D respectively. As an example, at the position P in fig. 4, radio stations are received from radio

broadcasting transmitter RB3 and RB4, while also some stations are received from radio broadcasting transmitter RB1. This is because the position P is in the ranges C, D and A1. The control module may now determine the corresponding frequencies that are available at the position P, and the corresponding signal power at each of those frequencies, from data
5 such as the transmission power, antenna height and distance towards the respective radio broadcasting transmitters, and control the transmitter module to transmit at those frequencies. In an embodiment a transmission power at each of those frequencies is adapted to a signal strength of the radio broadcasting at the particular position P as obtained from the calculation.

10 In each of the above embodiments, a message, such as an RDS message or TMC message may be generated by e.g. a message generator MG of the control module CM, and transmitted at the carrier frequencies for reception by the radio wave receivers. Furthermore, a warning tone such as a siren may be generated and transmitted to alert drivers of vehicles. Still further, speech recorded via a microphone may be transmitted to the drivers
15 by modulating it onto one or more of the carrier frequencies. A transmission power of the radio wave transmitter may be set in accordance with a speed of the emergency vehicle, speed information being obtained from e.g. a tachometer of the vehicle. Alternatively, a speed information may be derived from a rate of change of position data obtained from the position measurement system.

20

CONCLUSIES

1. Radiogolfzender voor het zenden van alarmsignalen aan radiogolfontvangers in een gebied, omvattende:

een zendmodule die ingericht is voor het zenden van een radiosignaal op tenminste een draaggolffrequentie,

- 5 een besturingsmodule voor het besturen van de zendmodule, waarbij de besturingsmodule een geheugen omvat voor het opslaan van radio omroepdata die gerelateerd is aan het gebied, waarbij de besturingsmodule ingericht is voor het bepalen van de tenminste ene draaggolffrequentie uit de radio omroepdata zoals opgeslagen in het geheugen en voor het besturen van de zendmodule voor het zenden van het radiosignaal op
10 de tenminste ene draaggolffrequentie.

2. Radiogolfzender volgens conclusie 1, waarbij de besturingsmodule verder omvat:

- een positiedata ingang voor het invoeren van een positiedata van een positie meetsysteem, het positie meetsysteem voor het meten van een positie van de radiogolfzender, waarbij de
15 besturingsmodule ingericht is om rekening te houden met de positiedata wanneer de tenminste ene draaggolffrequentie wordt bepaald.

3. Radiogolfzender volgens conclusie 2, waarbij de radio omroepdata tenminste één omvat van antennepositie, antennehoogte, en zendvermogen van radio omroepzenders, en waarbij de besturingsmodule is ingericht voor het bepalen van een radio omroepspectrum op
20 de positie die door de positiedata wordt geïdentificeerd, uit de radio omroepdata, en voor het besturen van de zendmodule in overeenstemming met het bepaalde zendspectrum.

4. Radiogolfzender volgens een van de voorgaande conclusies, waarbij de besturingseenheid verder een berichtgenerator omvat voor het genereren van een databericht, waarbij de berichtgenerator is verbonden met de zendmodule voor het
25 ontvangen van het databericht, waarbij de zendmodule ingericht is voor het zenden van het databericht met het radiosignaal voor elk van de draaggolffrequenties.

5. Radiogolfzender volgens een van de voorgaande conclusies, waarbij de besturingsmodule ingericht is voor het herhaaldelijk veranderen van een draaggolffrequentie wanneer het zenden van het databericht is voltooid, en voor het herhalen van de verzending
30 voor de veranderde draaggolffrequentie.

6. Radiogolfzender volgens een van de voorgaande conclusies, waarbij de zender is ingericht voor het zenden van een waarschuwingstoonsignaal op een draaggolffrequentie.

7. Radiogolfzender volgens een van de voorgaande conclusies, waarbij het databericht een RDS bericht omvat.

8. Radiogolftransmitter volgens een van de voorgaande conclusies, waarbij het databericht een TMC bericht omvat.

5 9. Radiogolfzender volgens een van de voorgaande conclusies, omvattende een snelheidsmeter input voor het ontvangen van snelheidsmeterdata, waarbij de besturingsmodule ingericht is voor het besturen van het uitgangsvermogen van de zendermodule in overeenstemming met de ontvangen snelheidsmeterdata.

10. Nooddienstvoertuig omvattende de radiogolfzender volgens een van de voorgaande conclusie.

10 11. Werkwijze voor het zenden van alarmsignalen aan radiogolfontvangers in een gebied, omvattende:
het bepalen van tenminste één draaggolffrequentie uit radio omroepdata die is opgeslagen in een geheugen, en
het verzenden in het gebied van een radiosignaal op de tenminste ene draaggolffrequentie.

15 12. Werkwijze volgens conclusie 11, verder omvattende:
het door middel van een positie meetsysteem meten van een positie waar het alarmsignaal moet worden verzonden, het rekening houden met de gemeten positie bij het bepalen van de tenminste ene draaggolffrequentie, waarbij de radio omroepdata die in het geheugen is opgeslagen positie gerelateerde informatie omvat.

20 13. Werkwijze volgens conclusie 12, verder omvattende:
het bepalen van een lokaal radio omroepspectrum op de gemeten positie, waarbij de radio omroep data daartoe tenminste één omvat van antennepositie, antennehoogte, en zendvermogen van radio omroepradiozenders, en waarbij het zenden van het radiosignaal plaatsvindt op draaggolffrequenties die voorkomen in het bepaalde radio omroepspectrum.

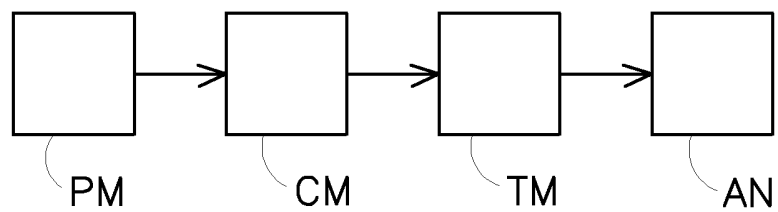


Fig 1

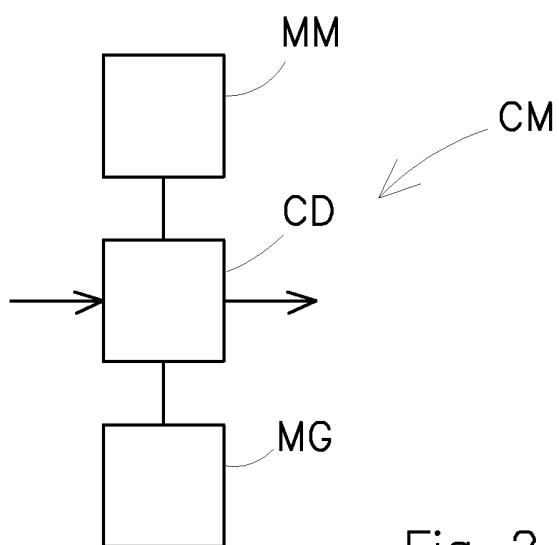


Fig 2

	1	2	3	4	5	6	7	8	9
A	x			x				x	
B		x		x					
C			x		x		x		
D	x				x		x		

Fig 3

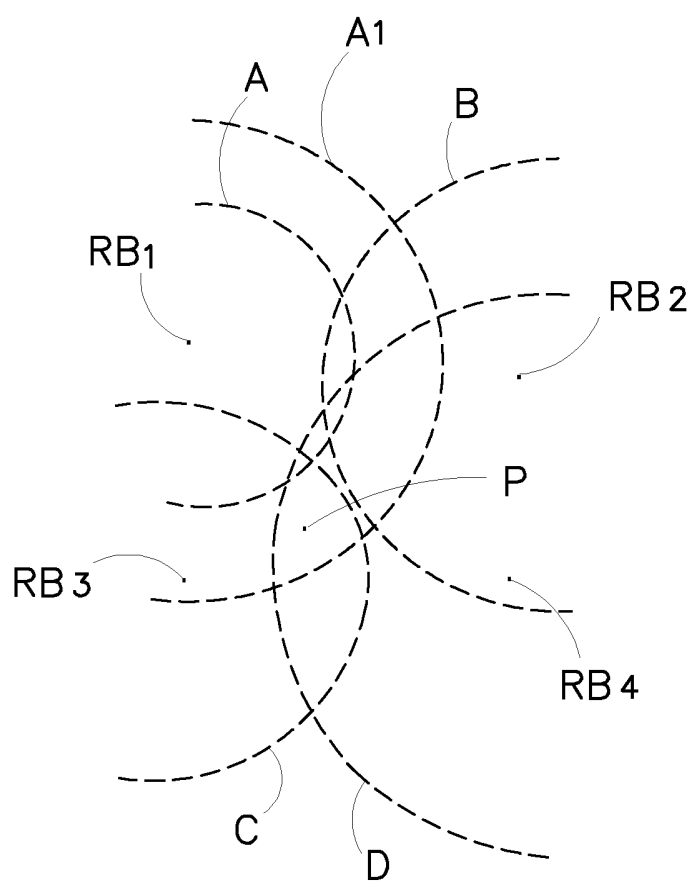


Fig 4

SAMENWERKINGSVERDRAG (PCT)

RAPPORT BETREFFENDE NIEUWHEIDSONDERZOEK VAN INTERNATIONAAL TYPE

IDENTIFICATIE VAN DE NATIONALE AANVRAGE	KENMERK VAN DE AANVRAGER OF VAN DE GEMACHTIGDE
	P30113NL00/HSE
Nederlands aanvraag nr.	Indieningsdatum
2004016	24-12-2009
	Ingeroepen voorrangsdatum
Aanvrager (Naam)	
Flister B.V.	
Datum van het verzoek voor een onderzoek van internationaal type	Door de Instantie voor Internationaal Onderzoek aan het verzoek voor een onderzoek van internationaal type toegekend nr.
08-05-2010	SN 54098
I. CLASSIFICATIE VAN HET ONDERWERP (bij toepassing van verschillende classificaties, alle classificatiesymbolen opgeven)	
Volgens de internationale classificatie (IPC)	
H04H20/59 H04H60/41 G08G1/09	
II. ONDERZOCHE GEBIEDEN VAN DE TECHNIEK	
Onderzochte minimumdocumentatie	
Classificatiesysteem	Classificatiesymbolen
IPC8	H04H G08G
Onderzochte andere documentatie dan de minimum documentatie, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen	
III. ☐	GEEN ONDERZOEK MOGELIJK VOOR BEPAALDE CONCLUSIES (opmerkingen op aanvullingsblad)
IV. ☐	GEBREK AAN EENHEID VAN UITVINDING (opmerkingen op aanvullingsblad)

**ONDERZOEKSRAPPORT BETREFFENDE HET
RESULTAAT VAN HET ONDERZOEK NAAR DE STAND
VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE**

Nummer van het verzoek om een onderzoek naar
de stand van de techniek
NL 2004016

A. CLASSIFICATIE VAN HET ONDERWERP

INV. H04H20/59 H04H60/41 G08G1/09
ADD.

Volgens de Internationale Classificatie van octrooien (IPC) of zowel volgens de nationale classificatie als volgens de IPC.

B. ONDERZOCHE GEBIEDEN VAN DE TECHNIEK

Onderzochte minimum documentatie (classificatie gevolgd door classificatiesymbolen)
H04H G08G

Onderzochte andere documentatie dan de minimum documentatie, voor dergelijke documenten, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen

Tijdens het onderzoek geraadpleegde elektronische gegevensbestanden (naam van de gegevensbestanden en, waar uitvoerbaar, gebruikte trefwoorden)

EPO-Internal

C. VAN BELANG GEACHTE DOCUMENTEN

Categorie °	Geciteerde documenten, eventueel met aanduiding van speciaal van belang zijnde passages	Van belang voor conclusie nr.
X	WO 02/103653 A1 (EMERGENCY WARNING SYSTEMS PTY [AU]; TRINGALI SALVATORE [AU]; MANSON KE) 27 december 2002 (2002-12-27) * bladzijde 2, regels 8-10 * * bladzijde 4, regels 10-11, 34-36 * * bladzijde 5, regels 6-10, 26-37 * * bladzijde 6, regels 4-12 * * bladzijde 8, regels 1-3, 21-24 * * bladzijde 9, regels 11-16 * -----	1-13
X	WO 02/17269 A1 (PETARDS CIVIL SYSTEMS LTD [GB]; HUTCHINSON JAMES BROOKS [GB]; MARKS BE) 28 februari 2002 (2002-02-28) * bladzijde 1, regels 22-24 * * bladzijde 3, regels 31-33 * * bladzijde 4, regels 21-32 * * bladzijde 5, regels 9-15, 29-33 * -----	1, 4, 5, 7, 8, 10, 11

☐ Verdere documenten worden vermeld in het vervolg van vak C.

☒ Leden van dezelfde octrooifamilie zijn vermeld in een bijlage

° Speciale categorieën van aangehaalde documenten

A niet tot de categorie X of Y behorende literatuur die de stand van de techniek beschrijft

D in de octrooiaanvraag vermeld

E eerdere octrooi(aanvraag), gepubliceerd op of na de indieningsdatum, waarin dezelfde uitvinding wordt beschreven

L om andere redenen vermelde literatuur

O niet-schriftelijke stand van de techniek

P tussen de voorrangsdatum en de indieningsdatum gepubliceerde literatuur

T na de indieningsdatum of de voorrangsdatum gepubliceerde literatuur die niet bezwarend is voor de octrooiaanvraag, maar wordt vermeld ter verheldering van de theorie of het principe dat ten grondslag ligt aan de uitvinding

X de conclusie wordt als niet nieuw of niet inventief beschouwd ten opzichte van deze literatuur

Y de conclusie wordt als niet inventief beschouwd ten opzichte van de combinatie van deze literatuur met andere geciteerde literatuur van dezelfde categorie, waarbij de combinatie voor de vakman voor de hand liggend wordt geacht

Z lid van dezelfde octrooifamilie of overeenkomstige octrooi publicatie

Datum waarop het onderzoek naar de stand van de techniek van internationaal type werd voltooid

17 juni 2010

Verzenddatum van het rapport van het onderzoek naar de stand van de techniek van internationaal type

Naam en adres van de instantie

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
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Fax: (+31-70) 340-3016

De bevoegde ambtenaar

Torcal Serrano, C

**ONDERZOEKSRAPPORT BETREFFENDE HET
RESULTAAT VAN HET ONDERZOEK NAAR DE STAND
VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE**

Informatie over leden van dezelfde octrooifamilie

Nummer van het verzoek om een onderzoek naar
de stand van de techniek

NL 2004016

In het rapport genoemd octrooigescrift	Datum van publicatie	Overeenkomend(e) geschrift(en)	Datum van publicatie
WO 02103653	A1	27-12-2002	AT 321325 T 15-04-2006
		AU 2002312647 B2	16-12-2004
		DE 60210075 T2	05-10-2006
		DK 1410361 T3	31-07-2006
		EP 1410361 A1	21-04-2004
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		JP 2004507004 T	04-03-2004
		US 2003164775 A1	04-09-2003



OCTROOICENTRUM NEDERLAND

WRITTEN OPINION

File No. SN54098	Filing date (day/month/year) 24.12.2009	Priority date (day/month/year)	Application No. NL2004016
International Patent Classification (IPC) INV. H04H20/59 H04H60/41 G08G1/09			
Applicant Flister B.V.			

This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the application
- ☐ Box No. VIII Certain observations on the application

	Examiner Torcal Serrano, C
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WRITTEN OPINION

Application number

NL2004016

Box No. I Basis of this opinion

1. This opinion has been established on the basis of the latest set of claims filed before the start of the search.
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing:
 - ☐ contained in the application as filed.
 - ☐ filed together with the application in electronic form.
 - ☐ furnished subsequently for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty	Yes: Claims	3, 8, 13
	No: Claims	1, 2, 4-7, 9-12
Inventive step	Yes: Claims	
	No: Claims	1-13
Industrial applicability	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

- D1 WO 02/103653 A1 (EMERGENCY WARNING SYSTEMS PTY [AU]; TRINGALI SALVATORE [AU]; MANSON KE) 27 december 2002 (2002-12-27)
- D2 WO 02/17269 A1 (PETARDS CIVIL SYSTEMS LTD [GB]; HUTCHINSON JAMES BROOKS [GB]; MARKS BE) 28 februari 2002 (2002-02-28)

1. The present application does not meet the criteria of patentability, because the subject-matter of independent claims 1 and 11 is not new.

1.1 Document D1 discloses (the references in parentheses applying to this document), according to all features of claim 1:

A radio wave transmitter for transmitting alarm signals to radio wave receivers in an area (p. 2, l. 8-10), comprising:

- a transmitter module, arranged for transmitting a radio signal at at least one carrier frequency (p. 4, l. 34-36),
- a control module for controlling the transmitter module (p. 5, l. 6-10),

wherein the control module comprises a memory for storage of radio broadcasting data related to the area (p. 5, l. 29-37), the control module being arranged to determine the at least one carrier frequency from the radio broadcasting data as stored in the memory and to control the transmitter module so as to transmit the radio signal at the least one carrier frequency (p. 6, l. 4-12).

1.2 Document D2 also discloses all features of claim 1 (p. 1, l. 22-24; p. 3, l. 31-33; p. 5, l. 29-31; p. 5, l. 31-33; p. 4, l. 25-32).

1.3 The same applies, mutatis mutandis, to the subject-matter of the corresponding independent claim 11, which therefore is also considered not new.

2. Dependent claims 2-10 and 12-13 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of novelty and/or inventive step, see D1-D2.

2.1 Document D1 discloses the additional features of claims 2 and 12 (p. 9, l. 11-16: the power levels in each radio channel can be correlated with the current position of the emergency vehicle in order to use the appropriate output power in each radio channel), of claim 5 (p. 6, l. 4-6), of claim 6 (p. 5, l. 26-27), of claim 9 (p. 8, l. 1-3 and 21-24) and of claim 10 (p.4, l. 10-11).

2.2 Document D2 discloses the additional features of claim 4 (p. 5, l. 9-15), of claim 5 (p. 4, l. 21-29), of claim 7 (p. 5, l. 9-11) and of claim 10 (p. 1, l. 21-23).

2.3 Claims 3 and 13 are not inventive. Document D1 discloses the storage of the radio broadcasting spectrum (p. 9, l. 11-13). The storage of data to determine the radio broadcasting spectrum as claimed is an alternative with no unexpected technical effect.

2.4 Claim 8 is not inventive. The transmission of TMC messages to deliver traffic and travel information to drivers comes within the customary practice of the skilled person.