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(71) Applicant(s)
BCI-Rundfunkberatung GmbH Co. Handels KG

(72) Inventor(s)
Zeitelhack Alexander, Zimmer Gert

(74) Agent/Attorney
PHILLIPS ORMONDE FITZPATRICK



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<p>(54) Title: METHOD AND ARRANGEMENT FOR THE TRANSMITTER-RELATED DETECTION OF LISTENER-RELATED DATA</p>		
<p>(54) Bezeichnung: VERFAHREN SOWIE ANLAGE ZUR SENDERBEZOGENEN ERFASSUNG VON ZUHÖRERBEZOGENEN DATEN</p>		
<p>(57) Abstract</p>		
<p>The invention concerns a method and arrangement for the transmitter-related detection of listener-related data concerning a particular listener (2) of the transmitter (1) among a plurality of listeners (2). Coded transmission messages are emitted via a transmitter (1), in particular a radio transmitter, to the listeners (2). Via a data link (3), the transmitter (1) interrogates individual listeners (2) on the respective operating state of a listener-related data-input station (4) with reference to the coded transmission messages and a listener-related memory (6) is assigned given values as a function of the interrogation result.</p>		
<p>(57) Zusammenfassung</p>		
<p>Die Erfindung betrifft ein Verfahren sowie eine Anlage zur senderbezogenen Erfassung von zuhörerbezogenen Daten eines konkreten Zuhörers (2) des Senders (1) innerhalb einer Vielzahl von Zuhörern (2), wobei über einen Sender (1), insbesondere einen Radiosender, verschlüsselte Sendebotschaften an die Zuhörer (2) ausgesendet werden, der Sender (1) über eine Datenverbindung (3) beim einzelnen Zuhörer (2) den jeweiligen Betriebszustand einer zuhörerbezogenen Dateneingabestation (4) unter Bezug auf die verschlüsselten Sendebotschaften abfragt und ein zuhörerbezogener Speicher (6) abhängig vom Abfrageergebnis bestimmte Werte zugewiesen bekommt.</p>		

Firma BCI-Rundfunkberatung
GmbH & Co. Handels KG
[Radio Consultancy Company]

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DESCRIPTION

The present invention is based on a method and an associated system for the transmitter-specific registration of listener-end data of a specific listener of a transmitter among a number of listeners.

In the field of (particular) sales promotion of products through advertising there is a great deal of interest in registering and evaluating the reactions of the target group by an advertisement (that is to say the listeners of a specific radio programme, for example). Usually, random surveys are carried out and a limited group of people are questioned about specific subjects related to the advertisements. In this context, it is of particular interest whether the person questioned finds an advertisement appealing and persuasive and whether this results, under certain circumstances, in a purchasing transaction.

After a series of random surveys of a relatively small and limited group of people has been evaluated, statistical methods can be used to arrive at conclusions regarding the appeal and effectiveness of advertisements for customers and consumers as a whole and, if appropriate, the advertisement for promoting the sales of the respective product can be adapted to the wishes and requirements, which have become clear during the survey, of the target group.

The described conventional method for questioning viewers is subject to a considerable degree of unreliability and lack of prognostic clarity owing to the use of statistical methods. The reaction of the listener and potential consumer can only be documented, and cannot be influenced. In addition, it is not



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possible to influence or maintain the attention of the listener during the transmission of the advertisement.

5 US 4 926 255 discloses a method and a system in which a television subscriber can enter a reaction to a television station by means of a keypad. The response which has been entered is then compared with a stored, "correct" response by means of a comparison circuit located at the subscriber's premises. Given appropriate correspondence, this is respectively stored at the
10 subscriber's premises or printed out on a corresponding certificate.

The invention is based on the object of providing a method and a system with which the behaviour of the specific listener can be registered
15 and documented over the short term and, especially, also over the long term, and at the same time the number of listeners and the listening frequency can be increased.

The object is achieved in terms of the method
20 by means of the characterizing features of Patent Claim 1. Advantageous embodiments of the method are implemented by means of Subclaims 2 - 8. With regard to the system, the object is achieved by means of the characterizing part of Patent Claim 9 with advantageous
25 embodiments in Claims 10 and 11.

In contrast to the prior art, in the invention the direct comparison of the data which is entered with the desired values and the interrogation of the listener-end credit account - both by means of the
30 transmitter - the actual state of the listener's reaction can be registered accurately both over short and relatively long periods of time.

With the method according to the invention, firstly a transmitter is provided which broadcasts,
35 encrypted transmission messages in addition to the transmitted station, to a group of listeners. The transmitter may be a radio transmitter or a television transmitter.



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The encryption of the transmission messages consists, for example, in broadcasting codewords or sound patterns which are in clear contrast to the rest of the station's schedule.

5 The transmitter is then connected via a data link to a series of listener-end data entry units (for example PCs), which can be used to register the operating states of these data entry units.

10 By means of entry commands, the respective listener can change the operating states of his data entry unit. These changes are registered by a data processing network which is connected both to the listener's data entry unit and to the transmitter.

15 The listener-end data entry unit can be connected to a group of further listeners of any desired size and can exchange data by means of such a data processing unit.

20 If the encrypted transmission messages which the transmitter broadcasts (possibly at quite specific times) and which are received by the listener then consists [sic] in the broadcasting of specific codewords which are entered into the listener-end data entry unit immediately after the broadcast, the listener-end data entry unit is switched into another
25 operating state by the listener entering the appropriate codeword at the appropriate time.

30 If it is then determines [sic] that the data entered by the listener corresponds to the codeword broadcast by the transmitter, the operating state which has been brought about on the basis of the entry commands which have been entered is classified as "correct". The data processing network determines that the listener has detected the encrypted transmission message and has initiated corresponding entry commands
35 with a resulting change in the operating state of the listener-end data entry unit.

In this way, the method according to the invention is capable of registering and documenting the

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reception by the listener of an encrypted transmission message by means of the respective operating states of the listener-end data entry unit which have been brought about by the listener.

5 If the listener has reacted "correctly", and has accepted and processed the transmitted encrypted message and converted it into corresponding entry commands at the listener-end data entry unit, the desired objective is achieved and the transmission
10 message has been actively perceived by the listener.

By means of the method according to the invention, the individual listener can then be "rewarded" by means of "credits" to an information unit (for example by time units in the form of "listener
15 minutes") in the memory which has been set up in the listener-end data entry unit. It is therefore possible to set up a "credit account" which is credited as a function of the operating states of the listener-specific data entry unit. The listener can be
20 "rewarded" for listening actively over a long period of time if he is given, for example, such a "credit account balance" (for example in the form of collected "listening minutes") or is allowed to take part in a lottery, for example.

25 Of course, the "credit account balance" of the memory of the listener-end data entry unit can also be interrogated by means of the data processing network, simply to provide an overview of the period which the listener spends on a particular transmission message,
30 and this serves as an important aid for the registration of the listener's reaction with respect to specific transmission messages.

In contrast to the prior art, direct on-line access to the individual listener is thus possible.
35 Complex surveys of individuals using imprecise statistical methods and subject to prognostic uncertainty can thus be avoided.



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The extent to which the respective encrypted transmission messages are well received can be discerned directly from the operating states of the listener-end data entry units, and this level of
5 reception can thus be improved and optimized by changing the encrypted transmission messages and registering the operating states of the data entry units again.

Depending on the operating states of the
10 respective data entry units, the data processing network [lacuna] is arranged between the listener-end data entry unit and the transmitter, can bring about a further connection of the respective listener-end data entry unit to listeners who are also connected to a
15 data network.

In order to implement the method according to the invention it is necessary for the respective listener to activate the data entry unit assigned to him. This can be done by entering keywords or by
20 inserting an encoded identification card. Only then is the respective listener-end data entry unit connected to the central data processing network and thus also connected to the transmitter. Identification cards which are integrated into commercially available credit
25 cards or Euro-cheque cards are also suitable for activation using identification cards.

In addition, such an identification card may be provided with a storage medium into which, for example, data of the memory which is integrated into the
30 listener-end data entry unit are input, thus enabling, for example, the "credit account balance" to be recorded directly on the listener's identification card.

Interrogation of such an identification card,
35 provided with a storage medium, into [sic] an external data unit permits the memory information of the identification card to be evaluated independently of the location of the listener-end data entry unit.

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The system according to the invention provides not only a transmitter but also a data processing network which is connected to listener-end data entry units for interrogating the operating states, and also
5 has, and is capable of making, connections to further listeners of an (external) data network. The operating states of the listener-end data entry units are changed by means of the entry commands which are entered into the listener-end data entry unit by the listener as a
10 function of the encrypted transmission information, it being possible to register these changes by interrogation using the data processing network.

The data entry unit can then be designed, on the one hand, as a fixed data entry station (for
15 example PC) or, on the other hand, as a mobile entry unit, which is realized, for example, in miniaturized form and can continuously be carried around by the listener.

Particularly interesting embodiments emerge if
20 such mobile entry units are carried by the listener on his person and entry commands can be input at any desired location at which a transmission message is received (for example in waiting rooms or in a taxi).

A mobile entry element which has thus been
25 "fed" with entry commands can then be connected, for example, to a listener-end, fixed data entry station for interrogation of the data, and operating states can be interrogated using the data processing network.

A further embodiment consists in the mobile
30 entry element having direct radio contact with the data processing network, and the entry commands of the mobile entry element and the resulting operating states being interrogated directly by the data processing network.

35 The method and system are explained in more detail with reference to exemplary embodiments in the figures of the drawing, in which:



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Fig. 1 shows a system with fixed data entry unit,
and

Fig. 2 shows a system with mobile entry elements.

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Fig. 1 shows a transmitter 1 which is connected to a data processing network 5 via a data link 3. The data processing network 5 is connected to a fixed, listener-end data entry unit 4 and to a series of further listeners $T_1 - T_N$ [sic]. Further listener-end data entry units 4' and 4" can be connected, either in an activated state or (as illustrated in Fig. 1) in a deactivated state, to the data processing network 5 and successively connected into the circuit and/or simultaneously interrogated by means of via [sic] the data processing network 5.

The listener 2 perceives a transmission message 7 of the transmitter and in response uses entry commands to place the data entry unit 4, which has been assigned to him, in different operating states which are interrogated by the data processing network 5.

If the entry commands entered by the listener 2 correspond to encrypted information in the transmission message 7, the data processing network 5 detects this state of correspondence and feeds, into a memory 6 which is integrated into the data entry unit 4, an item of information which symbolizes, for example, the "credit account balance" of the listener 2. Depending on the reaction of the listener 2 to the transmission message 7, the listener 2 can place the data entry unit 4 more often into operating states which are detected as being "correct", as a result of which the listener 2 is "rewarded" by crediting the information unit account in the memory 6.

35 The data processing network 5 also serves to make a direct connection in order to exchange data with the listeners $T_1 - T_N$ [sic].



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While Fig. 1 shows fixed data entry stations 4, 4' and 4" (for example PCs), which are connected to the data processing network 5 via a cable link, in the exemplary embodiment according to Fig. 2 mobile entry units 8, 8' and 8" are illustrated, which units 8, 8' and 8" are connected to the data processing network 5 by broadcasting radio messages 9 and can also be interrogated and administered by the latter (in principle similarly to a fixed data entry unit 4).

Such mobile entry elements 8, 8' and 8" can be carried by the listener 2 on his person without difficulty.



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[Lacuna]

1. Method for transmitter-end registration of the reaction of a specific listener to a transmission message which is transmitted by a radio transmitter or television transmitter in addition to the transmitted station, having the following method steps:

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- 35
- a) the transmission message is reproduced audibly or visually by a radio or television set together with the transmitted station;
 - b) in response to the transmission message, the listener (2) enters data into a listener-end data entry unit;
 - c) the radio transmitter or television transmitter (1) interrogates the data entry unit via a data link;
 - d) the data entered by the listener (2) are checked for correspondence to prescribed desired values which are assigned to the transmission message;
 - e) when the entered data correspond to the desired values, the radio transmitter or television transmitter (1) stores, in a listener-end memory (6), response data which constitute a reward to the listener (2);
 - f) the stored response data are collected in the form of a credit account;
 - g) the content of the credit account is, when necessary, interrogated by the transmitter (1) via the data link in order to register the listener's reaction;



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h) a central data processing network (5) which connects the transmitter (1) to a plurality of listeners $T_1 - T_n$ and the listeners $T_1 - T_n$ to one another is provided as data link.

5

2. Method according to Claim 1, characterized in that the listener-end data entry unit is placed in different operating states by means of entry information from the listener.

10

3. Method according to one of the preceding claims, characterized in that the operating states of the listener-end data entry unit are detected and grouped as "correct" or "incorrect" by a programme of the data processing network (5) as a function of the correspondence or non-correspondence with the transmission message of the transmitter (1) to the listener (2).

15

4.

Method according to Claim 3, characterized in that, when a "correct" operating state is detected, a time unit is entered into the memory (6) of the listener-end data entry unit, and in that the time units which have been collected in the memory (6) are classified by the data processing network (5) as listener-end "credit".

20

5.

Method according to one of Claims 3 or 4, characterized in that the connection between the listener-end data entry unit and a listener (2) is made, or prohibited, as a function of the number of time units in the memory (6).

30

6.

Method according to one of the preceding claims, characterized in that the connection between the listener-end data entry unit and the transmitter (1) or at least one listener (2) is made by the listener (2) activating the listener-end data entry unit by means of an identification card.

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7.

Method according to Claim 6, characterized in that the activation of the listener-end data entry unit



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is carried out by means of an identification card integrated into a credit card.

8. Method according to one of Claims 6 or 7, characterized in that the data of the memory (6) of the listener-end data entry unit are input into a storage medium of the identification card, and in that the data which have been input into the storage medium of the identification card can be interrogated at an external data unit.

9. System for transmitter-specific registration of listener-end data according to the method according to one of Claims 1 - 8, characterized by the following features:

- a transmitter (1), in particular radio transmitter, for broadcasting encrypted transmission messages together with the transmitted station to listener-end radio or television sets

- a central data processing network (5) which is connected to the transmitter (1);

- at least one listener-end data entry unit which is connected to the data processing network (5) and is interrogated by said data entry unit [sic] and

- a plurality of listeners $T_1 - T_n$ which are connected to the data processing network (5) and between which and listener-end data entry unit [sic] connections can be switched directly by means of the data processing network (5).

10. System according to Claim 9, characterized in that the listener-end data entry unit is designed as a fixed data entry unit (4).

11. System according to Claim 10, characterized in that the listener-end data entry unit is designed as a

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mobile data entry unit (8) and has a wire-free connection to the data processing network (5).



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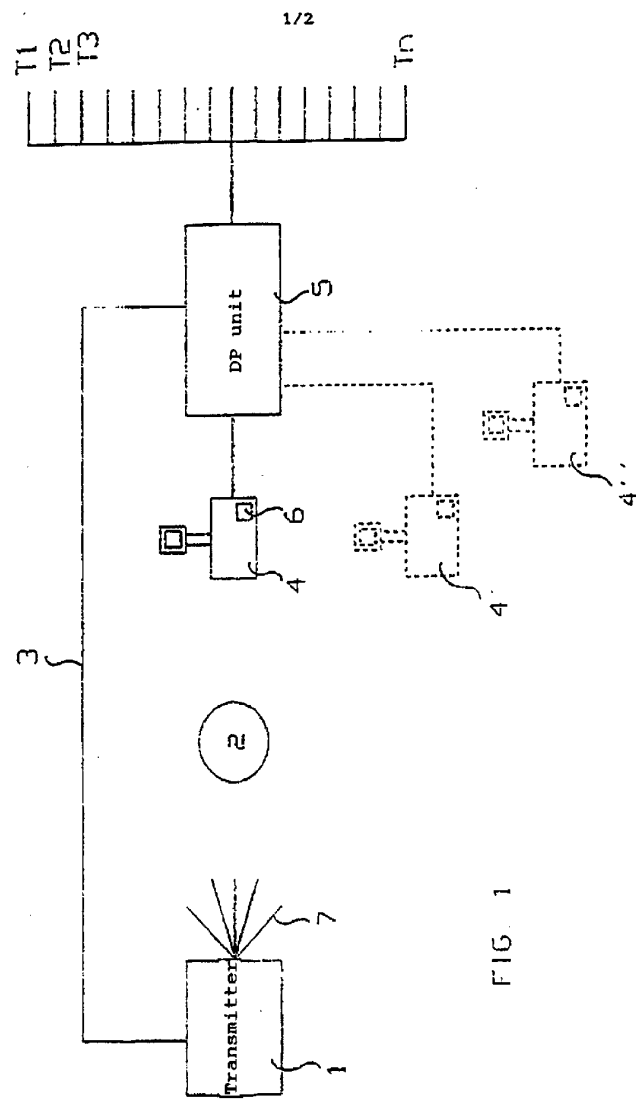


FIG. 1

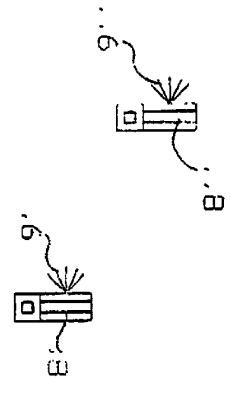
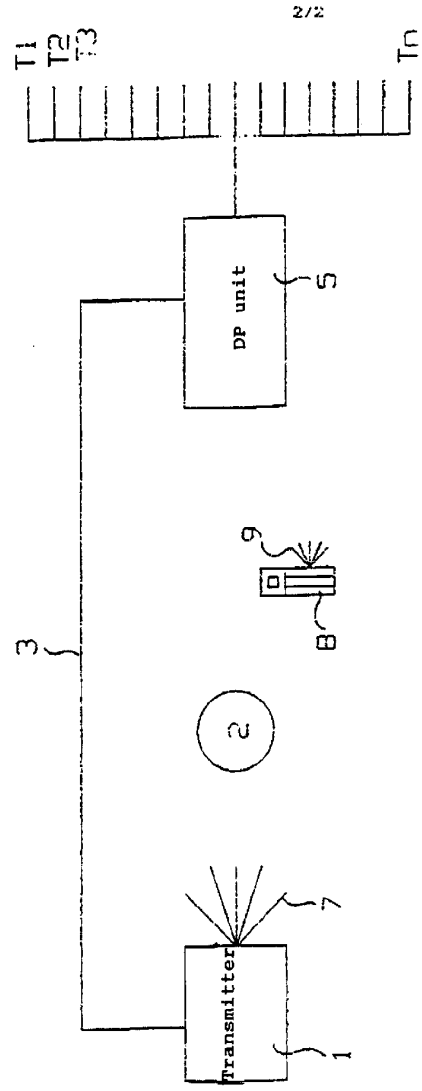


FIG 2