Title: A SYSTEM RELATED TO A TELECOMMUNICATION NETWORK

Abstract: The invention pertains to a system (10) relating to telecommunications network for enabling a choice or a vote to be made from a plurality of alternative options via a telecommunications network (3), by initiating a call to the telephone number ((B2)) (x, x, y, z, z) that corresponds to the alternative chosen, wherein the system includes a device (15) which is connected to the network (3) via an interface (50) for receiving and registering each call incoming to each of the alternative-pertinent telephone numbers. The device (15, 15a) is adapted to solely receive network-associated control signals (33) and to store an A-number identification (A, A, A) and a B-number identification (x, y, y, z, z) contained in said control signals as an indication of the choice or the vote that has been made (placed) without sending to the telecommunications network (3) signals that would result in the establishment of a speech connection via the telecommunications network (34).
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— as to applicant’s entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CZ, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
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A SYSTEM RELATED TO A TELECOMMUNICATIONS NETWORK

FIELD OF INVENTION

The present invention relates generally to a system pertaining to a telecommunications network, and more particularly to a telecommunications network related system which, through the medium of a telephone network, enables a choice made from a number of alternative choices to be recorded or a vote to be placed.

By "telecommunications network related system" is meant a system that can be connected to the network and then to network outgoing lines or connections.

The word "choice" or "vote" in respect of a voting/polling procedure shall, of course, also include the choice of a plurality of available alternatives/options.

The present invention is based on the assumption that said choice and/or said vote given in respect of a polling process can be put into effect by initiating in the telephone network a telephone call that corresponds to the desired alternative or the vote, while using a clearly defined telephone number allocated to one alternative.

Although the present invention is very versatile, it has primarily been devised for use by viewers of a television program and is intended to instigate the cooperation of the viewers in an opinion poll, wherewith the viewers have the opportunity of voting for one or more clearly defined alternative choices either during or at the end of such a television program, by initiating a call to an alternative-allotted telephone number via the telephone network.

On the other hand, the invention can also be expected to find application in other choices of an alternative from among a plurality of available alternatives, by calling one or more alternative-allotted telephone numbers.

Description of background art

Several variants of methods and systems of the aforesaid nature are known to the art, at least with regard to the applications mentioned above with the use of a telephone network system (the public telephone network).

As a first example of the earlier standpoint of techniques with respect to placing a vote, there can be mentioned a telephone network related system for placing a vote for an alternative from among several alternatives during and/or at
the end of the transmission time of a chosen television program, by calling a telephone number corresponding to the chosen alternative via the telephone network.

This known system is based on presenting on a television screen the telephone numbers that correspond to alternatives, wherewith a viewer or person wishing to place a vote shall utilise the telephone network to this end, by calling the telephone number corresponding to the alternative chosen via his/her own telephone apparatus.

The conditions required for implementing this vote registering procedure in the telephone network are greatly dependent on the structure of the telephone network used.

With regard to older telephone network structures, it is thought suitable to allow a number of devices to be used for each callable and alternative-allotted number which can be connected in a known manner to the telephone network as a callable apparatus or subscriber so as to be able to receive and record via each of said devices each incoming call to one of the alternative-associated telephone numbers.

With regard to digital telephone systems of more recent design, there is actually required only one device, in which there is stored an A-number identity and a B-number identity.

Telephone systems of this kind provide signal transmission between the calling and the called apparatus, via a so-called signal channel.

Known systems of this kind can be divided into two categories, e.g. a first category in which the person placing a vote is informed that the vote has been received and registered, via a connected speech channel, and a second category in which no speech channel is connected and the voter receives no acknowledgement of his/her vote over a speech channel.

Registration of the vote can be considered to take place more slowly in the first category and requires more time than in the second category, which is primarily intended for registering a large number of votes allocated to different alternatives over short periods of time.

With regard to the first category when applied in a digital telephone system, it is known that when signalling via the signal channel is terminated and the called device activates signals representative of so-called B-responses, by “answering”
the call, a speech channel or a speech connection is setup through the telephone network.

When a speech channel has been established between said called device and the calling device, a confirmation message is sent via the established speech channel, therewith confirming to the calling party that the choice given has been received and registered.

The call is terminated subsequent to this confirmation in a manner known *per se* and the speech channel released, therewith the calling party is billed a relatively high fee.

With regard to the prior art in respect of the features associated with the present invention, it should also be mentioned that it is known that the number of calls that can be handled simultaneously by a telephone network is normally limited by the available speech transmission capacity (the number of available speech channels), and that in the case of television programs of the aforesaid kind the available speech transmission capacity will be quickly exhausted, resulting in blocking functions.

The following prior publications can be mentioned as examples of a system belonging to the first category:

*KRONBLUM, Konrad: “Auf dem weg zum intelligenten dienst”*  

This publication relates to a selection system in which SCP (Service Control Points) functions are used, and where the signal exchange can take place over a signal channel.

This document teaches in particular the possibility of utilising signalling information appearing within an intelligent network (IN), so that the destination of each speech channel can be through-connected with respect to the question of a choice or placing of a vote in a way other than that which applies with standard call connections.

*WO-A2-96/32818*  
This publication teaches a choice method based on the same fundamental principles as the method mentioned above.
The method includes a service control function (SCF) which shall be capable of sending a question-structured, vote-related activating signal to a service switching function (SSF), wherein instructions relating to the message to the chooser or voter are delivered in connection with an activation query.

The SSF function counts the number of calls made by the users of the telephone network to predetermine telephone numbers and sends to each individual voter a message relating to the elected choice or vote.

Information relating to the number of calls is now sent to the SCF function.

In order for the voter to be sure that his/her vote has been registered in respect of the given alternative, the number called by said person is added to the information delivered to the voting person from the SSF function, thereby creating a number-specific message to the voter.

Page 6, line 7 and following text, disclose that a service that can be provided by an intelligent network IN is a remote controlled voting process. A subscriber is able to take part in an election and/or make one or more choices, by calling one or more predetermined telephone numbers.

The actual voting process is carried out by a subscriber calling (dialling) a voting-related telephone number, and by registering the subscriber number of the person making the call.

The document also proposes the use of a speech generator that is adapted to deliver a specific message immediately the call is registered.

One drawback with this type of system is that the same message is delivered to all callers and consequently an individual caller cannot be sure that his/her vote has been registered in respect of the correct alternative.

An object of this patent publication is to create conditions for eliminating this drawback by adding in the SSF function information relating to the activated and called number to the information to be sent to the voter. This enables a number-specific message to be sent to each of the voters.

Reference can be made to the following patent publication as an example of the second category.

WO-A2-98/00955

This patent publication relates to the use of a telephone system and to the creation of conditions for carrying out a poll.
One typical polling method has been exemplified as a method in which the viewers of a television program are induced to call a first telephone number "A" to answer a set question in the affirmative, "Yes", or to call a second telephone number "B" to answer the set question in the negative, "No".

By way of the earlier standpoint of techniques, there is described a system which requires a connection to be established to a receiver via speech channels, wherewith said receiver may have the form of a recorded announcement machine.

The patent publication also describes a known and modern telecommunications network constructed with separate signal channels and speech channels.

An early version of Common Channel Interoffice Signalling (CCIS) is essentially comprised of a network for a telephone system in which information delivered by a call connected to the telephone network is transmitted via high-speed data links that are separate in relation to the speech circuits required to transmit speech on a connected speech channel.

This enables it to be determined whether or not a call can be terminated at the receiver through the medium of the signal channel, before needing to utilise trunk capacity to setup a speech channel.

This system provides a telephone enquiry service or voting (polling) service that does not necessarily require the connection of a speech channel between participating callers and a called subscriber in the inquiry system.

The system provides an inquiry service and polling service in the absence of personal contributions and shall be capable of fulfilling requirements relating to high volumes of questions and votes per unit of time.

More specifically, this patent publication teaches a polling method which facilitates the reception, compilation, storage and distribution of the questions asked and the answers received, albeit with the minimum use of speech channels.

More specifically, it is a question of whether a subscriber shall be a person who has requested to take part in the questioning and polling method, and whether the information that can be obtained therefrom between the calling party and the called party constitutes that which originates from the number called in respect of the inquiry in order to activate the polling service.
A calling unit sends to its exchange a query which searches in the database for a polling sequence that corresponds to the inquiry.

As made apparent in Figure 1 of this patent publication, a caller dials a polling number on his telephone apparatus (21) and establishes a connection with an exchange (12) associated with an SSP (Service Switching Point) centre via the line (18).

The exchange (12) now selects a call plan related to the called number.

The exchange (12) activates a data packet to an SCP 42 (Service Control Point) in response to an indicated trigger.

The data packet asks SCP 42, to establish whether or not the number called requires special service.

The SSF (Service Switching Function) function compiles and/or tabulates the signal information relating to the call with respect to alternative-associated B-numbers.

The SSF function thus sends the compiled signalling information to the service control function, SCF, in which said information is saved as an indication of given votes.

The SSF function utilises said information to present to each individual voter an individual message confirming the choice or vote given.

More specifically, SCP 42 instructs the SSP centre exchange (12) to play back a message to the telephone apparatus (21) via the connection (18). This message may have the form “press 1” for “Yes”; “press 2” for “No”.

**Summary of the present invention**

**Technical problems**

When taking into consideration the technical deliberations that a person skilled in this particular art must make in order to provide a solution to one or more technical problems that he/she encounters, it will be seen that on the one hand it is necessary initially to realise the measures and/or the sequence of measures that must be undertaken to this end, and on the other hand to realise which device is/are required in solving one or more of said problems. On this basis, it will be evident that the technical problems listed below are highly relevant to the development of the present invention.
When considering the present state of the art as described above, it will be evident that in the case of a system related to a telecommunications network of the kind defined in the introduction a technical problem resides in the creation of conditions which enable a choice or a vote to be made via the telephone network at a far lower cost than that occasioned by messages sent over an established speech channel.

With regard to recording votes and/or choices, it will be seen that a technical problem resides in the significance of and the advantages afforded by using telephone network related functions and/or telephone network connected devices instead of telephone network internal functions.

It will also be seen that a technical problem resides in realising the significance of and the advantages afforded by the freedom regarding function selection that a device connected to the telephone network can provide, by virtue of allowing requisite function choices to be made without, or essentially without, intervention of demands set by the telephone operator.

Another technical problem resides in the ability to create conditions with the aid of simple means that will enable one or more such devices to be connected to outgoing connections to the telephone network, so that each incoming call to each of the alternative-associated and callable telephone numbers can be received and recorded.

Another technical problem resides in the ability to provide, without needing to change the functionality in the telephone network, conditions that will enable a much larger number of votes to be registered from a significantly larger number of callers per unit of time than the number per unit of time applicable when the available speech transmission capacity constitutes a limiting factor.

In this regard, it will be seen that a technical problem resides in the ability to realise the significance of and the advantages afforded by allowing each vote-related call to utilise in the network-connected device time-wise available signalling capacity over the time required for signalling and for enabling the signalled information to be registered/recorded in said device.

A technical problem is then one of being able to realise the significance of and the advantages afforded by taking measures that will enable said vote/choice and a vote confirmation message, of a kind other than a speech announcement
over a connected speech channel, to be delivered and registered without requiring a connection or an established speech connection through the telephone network.

It will be seen that another technical problem is one of being able to realise the significance of and the advantages afforded by initiating and giving such a choice or vote from a telephone apparatus and in connection with a television program and therewith allowing such a telephone number related vote within the device connected to the telecommunications network to represent a vote given in an opinion poll related to said television program.

Another technical problem resides in the ability to realise the significance of and the advantages afforded by using the inventive system when voting and polling is occasioned by other media, for instance a radio program.

In the case of opinion polls related to televisions programs a technical problem also resides in providing a system in which a choice and/or a vote can be given by calling an alternative-allotted telephone number via a telephone apparatus connected to the telephone network, such as a telephone set situated in the close vicinity of the television apparatus or equivalent apparatus used to present the program.

Another conceivable technical problem resides in the ability to realise the significance of and the advantages associated with storing in said device connected to the telecommunications network as a given vote or choice an A-number identification contained in the control signals on the one hand and a B-number identification contained in said control signals on the other hand.

Another technical problem resides in the ability to realise the significance of and the advantages afforded by adapting said device for the storage in a database an A-number identification on the one hand and a B-number identification on the other hand as a given choice or vote, so as to enable poll calling parties to be clearly defined and identified even when said parties each call one and the same alternative-associated telephone number.

Another technical problem resides in the ability to realise the significance of and the advantages afforded by using a television channel selector unit to deliver said choice or vote, said unit being connected as a subscriber to the telecommunications network and to a television apparatus presenting the television program.
In this regard, a technical problem resides in the ability to realise the significance of and the advantages afforded by allowing said unit to be adapted to initiate and activate a call to each of the telephone numbers corresponding to the alternatives presented, in respect of an initiated vote.

There then resides a technical problem in the ability to realise the significance of and the advantages afforded by allowing a remote control device or some corresponding device to be used to select one of a number of available alternatives through the medium of said unit and to allow said unit to choose a telephone number that corresponds to the alternative chosen.

With a starting point from a vote or choice recording system and a device connected to a telecommunications network, it will be seen that a technical problem resides in the ability to provide an alternative system with solely A-number and B-number identification, where a given choice and/or a given vote can be confirmed to the voter from said device in a manner other than via a speech channel, by virtue of choosing one or more options adapted for this purpose, ranging from no confirmation at all to more positive and easily understood confirmations.

It will also be seen that a technical problem resides in allowing the channel selecting unit to be used for confirmation purposes.

Another technical problem resides in the ability to realise the significance of and the advantages that are afforded by providing the channel select unit with one or more circuits through which the calling voter can be given confirmation that his vote/choice has been recorded, either audibly or visually.

In the case of a system of this kind, a technical problem resides in the ability to realise the significance of and the advantages afforded by allowing confirmation of a received and stored vote to be transmitted via an established information transmission system which is separate from the telecommunications network or is external of said network.

Another technical problem resides in the ability to realise the significance of and the advantages associated with using the telecommunications network in a manner other than by establishing and utilising speech channels for transmitting confirmation to the channel selector unit.

Another technical problem resides in the ability to realise the significance of and the advantages associated with allowing the chosen polling telephone
numbers to be sent simultaneously to a plurality of said units via information transmission, preferably wireless transmission, externally of the telecommunications network.

Another technical problem resides in the ability to realise the significance of and the advantages associated with using an available TV network and/or an available satellite-associated or satellite-utilised network as a means of transmitting confirmation of a received and recorded vote/choice located externally of the telecommunications network.

With regard to a system of the kind described and with the use of an available TV network and/or satellite-associated network, it will be seen that a technical problem resides in allowing the same alternative-allotted telephone numbers to be sent to channel selectors or corresponding units, or to allow the same or different alternative-allotted telephone numbers to be sent to chosen channel selectors or corresponding units for storage in said channel selectors or units.

Another technical problem resides in the ability to realise the significance of and the advantages associated with allowing a unit-allotted and unit-significant identification to be stored in said device connected to the telecommunications network and there be related to a unit-allotted A-number.

Solution

The present invention takes as its starting point a system that can be connected to a telecommunications network or is related to such a network so as to be able to record or register an alternative option chosen from among several alternatives through the medium of said network, by making to the network a call that corresponds to the chosen alternative by ringing a telephone number that has been allocated to said alternative.

With the intention of solving one or more of the technical problems listed above, it is proposed in accordance with the invention that one or more devices shall be connected to outgoing connections belonging to the telecommunications network so as to be able to receive and register via said devices each call incoming to each of the alternative-associated and callable telephone numbers without sending to the network signals representative of the establishment of a speech connection.
With the intention of solving one or more of the aforesaid technical problems, it is proposed in accordance with the invention that the network-connected devices are adapted to receive over said connections network control signals and store as a given choice or vote an A-number identification contained by the control signals on the one hand, and a B-number identification contained in said control signal on the other hand.

By way of proposed embodiments that lie within the scope of the inventive concept said choice/vote is beneficially related to a television program or to some other medium, such as a radio program.

It is proposed in particular that an established choice shall be capable of being interpreted as a vote in an opinion poll.

Thus, when applicable to a television program, the vote is given by initiating a call to an alternative-allotted telephone number via a telephone apparatus, such as a telephone apparatus located in the close vicinity of the television on which the television program is presented.

It is also proposed that a unit adapted as a television channel selector or switch is connected to the telecommunications network and also to the television on which said program is presented, and that said unit is designed to enable a call to be made to each of the alternative-allotted telephone numbers.

It is particularly proposed in this regard that a remote control device is used to choose an alternative and that alternative-allotted telephone numbers corresponding to respective chosen alternatives are selected by unit-associated circuits for initiating the appropriate call.

The channel selector device may conveniently consist of a digital TV decoder.

It is also proposed that the aforesaid devices can be provided with circuits that are instrumental in confirming to the person making said choice or placing said vote that said choice or vote has been registered.

It is particularly proposed that this confirmation can be sent to the person making said choice or placing said vote through the medium of an information transfer from said circuit, over a signalling channel belonging to the telecommunications network.
Alternatively, the voter may be given said confirmation through the medium of an information transfer from said circuit, over a channel which is separate from or external of said network.

It is also proposed that said unit can be connected to the telecommunications network through the medium of a modem.

Telephone numbers selected with respect to choice or vote alternatives can be entered into the unit for storage therein, via an information transfer device that is external of the telecommunications network, such as wireless information transfer.

In this regard, there can be used beneficially a wireless information transmission in the form of a TV network and/or a satellite associated network.

It is also proposed that the same alternative-allotted telephone numbers can be entered in all channel selectors or in chosen channel selectors for storage therein, via the TV network and/or the satellite network.

A significant identification allotted to the unit is stored in said device and is there related to a unit-allotted A-number.

Advantages

Those advantages that can be considered significant with respect to a system that can be connected to a telecommunications network and that includes the features characteristic of the present invention reside primarily in the creation of conditions which enable an alternative to be chosen and/or voted for from a number of alternatives, by calling the network on a telephone number that corresponds to the chosen alternative.

Registration of the choice or vote can be effected solely by causing network-associated control signals to be received in a called device connected to the outgoing connections of the network, and storing in said device an A-number identity contained in the control signals and a B-number identity contained in said control signals as representing the choice or vote given.

This can be effected without the device connected to the telecommunications network sending signals that are representative of the establishment of a speech connection, therewith eliminating entirely each connection of a speech connection between the calling party and the called party, such connections being associated with relatively high costs.
More specifically, the invention enables a much larger number of choices and/or votes to be registered via the telecommunications network per unit of time than the number of choices and/or votes that can be registered per unit of time when the available speech transmission capacity constitutes a limiting factor.

Moreover, said device can be readily adapted to confirm to the calling unit that its choice or vote has been registered, in a manner other than by establishing a speech connection.

The primary characteristic features of an inventive system related to a telecommunications network are set forth in the characterising clauses of the accompanying Claims.

Brief description of the drawings

A system related to a telecommunications network and having features characteristic of the present invention will now be described in more detail with reference to the accompanying drawings, said system being adapted to enable a choice to be made or a vote to be placed from a number of alternatives prior to, during, or after the transmission time of a selected television program, via the telecommunications network.

Figure 1 illustrates a known system related to a telecommunications network.

Figure 2 illustrates a first alternative application of the inventive system, while using a remote-controlled channel selector connected to a television apparatus.

Figure 3 illustrates a second alternative application of the inventive system, while using a television apparatus and a telephone apparatus connected to a telecommunications network.

Figure 4 illustrates schematically a further development of the system according to Figure 2.

Figure 5 illustrates co-ordination between the telecommunications network and the connected device.

Description of known technology

Figure 1 is a schematic illustration of known technology from which the present invention constitutes a further embodiment that lies within the scope of the inventive concept, and where the features significant of the present invention have been generally concretised through the proposed embodiments described below.
Thus, Figure 1 is a greatly simplified illustration of an arrangement related to a telecommunications network, where said arrangement is designed to enable a vote to be placed from a number of alternative options during the transmission time of a selected television program, shown on a television via a telecommunications network 3, by dialling the telephone number corresponding to the alternative chosen (of the type x, y, z) on an available telephone apparatus 4 connected to the network.

A number of devices, collectively referenced 5, are connected to the outgoing connections or output ports 32 associated with the network 3, for receiving and registering each call incoming to each of the telephone numbers relevant to said alternatives.

Thus, the illustrated embodiment of Figure 1 includes a register 5a which is able to receive calls made to a first chosen telephone number B1 over the connection 32a, a register 5b which is able to receive calls made to a second chosen telephone number B2 over the connection 32b, and a register 5c which is able to receive calls made to a third chosen telephone number B3 over the connection 32c, and so on.

Each of the registers 5a, 5b and 5c is connected to equipment 6 which is common to said registers and which is intended to deliver a speech message over an established speech channel 32a, 32b and 32c respectively (said channels including said connections, among other things).

The arrangement 1 illustrated schematically in Figure 1 and functioning to enable a choice or vote to be made in a selected opinion poll will now be described in more detail, while using the telecommunications network 3.

When a person watching a chosen television program desires to vote for a particular alternative choice from among a plurality of alternatives, by calling a telephone number corresponding to his/her choice via the telecommunications network 3, he/she lifts the telephone receiver 4a and upon receipt of a dialling tone dials the telephone number B1, B2 or B3, corresponding to his/her choice wherewith a call signal is sent from the telephone apparatus 4 through the medium of circuits (not shown in detail in Figure 1) belonging to the telephone network.

The user thus initiates via the apparatus 4 a call to the telephone number, say B2, corresponding to the chosen alternative, and is thereby connected by network switching means to the device 5b that corresponds to the call via a so-
called B-response, and a speech channel 31b, 34b and 32b is setup between the calling apparatus 4 and the called device 5b.

Subsequent to having registered the call in the device 5b in a known manner, speech equipment 6 is activated and sends to the calling party 4 over the established speech channel 31, 34b and 32b confirmation to the effect that his/her choice or vote has been registered.

This confirmation normally includes a speech sequence, such as “Your vote has been registered. Please replace the receiver”.

In order to clarify the significant features of the present invention, it can be mentioned that a complex telecommunications network 3 having telephone exchanges of the kind intended here can be readily divided into at least two functional parts or blocks, e.g. a first functional part 33 which provides different signal exchanges, and a second functional part 34 which establishes a speech connection and implements through-coupling of a speech channel immediately a called party B2 answers the ringing signal or the like sent by the telecommunications network, by lifting the telephone receiver or corresponding device.

The first functional part 33 can be simply assumed to generate a coupling tone to the calling apparatus, note the telephone number, subscriber number or the like of the called apparatus, to check that a free speech connection or speech channel exists through the telecommunications network 3 and be coupled between calling and called system subscribers, and to send a ringing signal to the called apparatus together with at least one A-number identification.

In the following text, this first functional part 33 is designated the “control signal” and provides a control-signal related exchange based on A-number identification and B-number identification.

The second functional part 34 is activated immediately the called party answers the call, via a signal designated here as the B-response, and establishes a free speech channel 31b, 34b, 32b between the calling party 4 and the called party 5b for an exchange of information over the thus connected speech channel.

Figure 1 illustrates solely schematically a telecommunications network 3 as an exchange unit 30 having input ports 31 and output ports 32 and including a first functional part co-ordinated in a block 33, and a second functional part co-ordinated in a block 34.
**Description of embodiments at present preferred**

It is pointed out initially that we have chosen to use in the following description of embodiments at present preferred and including significant characteristic features of the invention and illustrated in Figures 2 to 5 of the accompanying drawings special terms and terminology with the primary intention of illustrating the inventive concept more clearly.

However, it will be noted that the expressions chosen here shall not be seen as being limited solely to the actual terms used in the description, but that each term chosen shall be interpreted as also including all technical equivalents that function in the same or in at least essentially the same way so as to achieve the same or essentially the same function and/or technical effect.

Although the invention is exemplified below by reference to an application in which a vote is given in an opinion poll, it will be understood that the inventive principles can be given a more general application, such as making a choice from one or more alternative options when ordering goods and services.

The present invention is based on a choice or vote registering system 10 where, among other things, the result can be achieved by utilising the first functional part 33 within a telecommunications network 3 and refraining from speech equipment 6 coupled via a second functional part 34, and therewith refraining from using an established speech channel for confirming the receipt and registration of the choice or vote.

The present invention thus requires the addition of a number of supplements to said device 5 or said registers 5a, 5b, 5c, said device being referenced 15.

According to the present invention, the first functional part 33 sends a dialling tone to the calling apparatus 4, with which there is initiated, in a known manner, a call to the telephone number, say B2 (structured as x, x, y, y, z, z) corresponding to the choice or vote made/placed by the caller, therewith the device 15 is now called with the telephone number B2, via the first functional part.

The function of the device 15 is adapted to solely receive control signals associated with the telecommunications network in a receiver or a database 15a and to store this control signal as a given vote, by virtue of the control signal containing an A-number identification (A, A, A) and a B-number identification (x, x,
y, y, z, z), which can be terminated and stored in a database 15a belonging to said device.

In respect of a polling system which totally refrains from confirming to the voter the receipt and registration of a choice or vote, it is sufficient to solely register the A-number identification and the B-number identification.

However, when the voter requires such confirmation, this can be complied with over the first functional part 33.

This confirmation can be given in the form of an "engaged signal".

Figure 2 shows that a TV-channel selecting unit 40 shall be connected to a telecommunications network 3 on the one hand and to the television apparatus 2 on the other hand, and shall be adapted for initiating and calling each of the telephone numbers corresponding to individual alternatives.

Figure 2 shows that the unit 40 is pre-programmed for the storage of several telephone numbers, such as at least one significant telephone number for each of the options available.

The unit 40 includes circuits (not shown) which enable each of these telephone numbers to be called by the person wishing to make a choice or to place a vote.

The unit 40 co-acts with the input port 31A of the network 3 over a modem 42 and the device 15 is connected to an output port 32B via an interface 50.

It can also be assumed in this case, by way of example, that the choice or vote placed shall be initiated and registered by means of a calling signal via the telecommunications network 3.

This activation is preferably effected with the aid of a remote control device 41, which is used to select an option. A call is then made to a telephone number B2 corresponding to the option chosen and sent to the network 3 and through-coupled to the device 15.

The unit 40 of the illustrated embodiment includes circuits 40a, which enable registration of the vote or choice to be confirmed to the voter visually.

Such confirmation can be given by activating visual indication associated with said unit and related to the alternatives available.

Different visual indications may be given in this regard.
In the case of a first embodiment, a light-emitting diode 40a can be used to this end, one such diode for each choice/vote made.

In this regard, the figure shows that a light-emitting diode 40a is chosen to indicate a choice representative of the telephone number B2.

A second alternative may be to present on the screen 2' of the television receiver 2 a unit-generated TV picture.

Figure 2 also shows that selected telephone numbers intended for use in the polling process can be delivered to the unit 40 via network-external information transmission, such as wireless information transmission.

However, there is nothing to prevent the unit 40 from being connected to the telecommunications network 3 in a manner which enables the telephone numbers selected for the poll to be delivered to said unit 40 via an established speech channel through the network 3 and the second functional part 34.

Updating of this nature, via network-external information transmission, provides the advantage that a plurality of units 40 (40) belonging to different users are able to receive simultaneously information relating to the telephone numbers concerned and their allocation to respective alternatives or options.

In the case of a system application that includes a plurality of units 40 (40) and a plurality of users and voters, illustrated with reference signs 31A, 31B, 31C, it applies to all users that a first call number B1 shall correspond to a first alternative, a second call number B2 shall correspond to a second alternative, and so on, within a co-ordinated group of subscriber numbers.

It can be mentioned in this respect, however, that a chosen number of units 40 (40) can be allocated one and the same callable telephone number in respect of a first alternative, while a chosen number of other units can be allocated a different callable telephone number in respect of the first alternative, this number being the same for all of said other units.

The embodiment illustrated in Figures 2, 3 and 4 includes the use of a receiver antenna 43 which is intended to indicate the possibilities of programming the unit 40 and/or a receiver antenna 44 via television signals, said receiver antenna being intended to illustrated the possibility of coding the unit 40 with a number of callable telephone numbers via a satellite, each of said numbers relating to an alternative option or choice.
A unit 40 may be allotted a significant identification similar to that illustrated in Figure 2, wherein the device 5 includes a block or a circuit 25 which relates to the A-number allocated to the unit 40.

It is proposed, by way of example, that confirmation via signal channels is effected by initiating from the device 15, via the functional part 33, a signal that is representative of an engaged signal, and that said confirmation will therewith constitute an engaged signal on the caller's telephone unit 4 (40).

Figure 3 illustrates an exemplifying example where said confirmation can be given to the caller 4 over the public telephone network 3.

In this case, the television apparatus 2 and channel selector 40 form a unit and a choice or a vote is made by dialling an alternative-related telephone number B2 shown on the television screen (or on the channel selector), by using a separate telephone apparatus 4 that is connected directly to the telecommunications network 3 via an input port 31B.

Other devices and measures can be provided for giving to the caller 4 and/or the unit 40 a more or less positive confirmation that his choice or vote has been received and registered, without needing to establish a speech connection via the network 3 to this end.

Figure 4 is a schematic illustration of a development of the system shown in Figure 2, where the television apparatus 2 is connected via a line 2a to the unit 40, which in turn is connected to a modem 42 that is able to carry control signals, via a line or input port, from the unit 40 to the network 3 or from the network 3 to the unit 40 via the modem 42, to establish a signal channel for the requisite signal exchange.

The system 10 according to Figure 4 can be considered to comprise a first subsystem "S1" consisting of the television apparatus 2, the unit 40, the modem 42, the receiver antennas 43, 44, the remote control 41 (alternatively the telephone apparatus 4) and to further comprise a second subsystem "S2" consisting of a nearby telephone exchange unit 35 connected to the network 3 with its first functional part 33 for signalling purposes, and with its second functional part 34 for speech transmission purposes, and to comprises further a third subsystem "S3" for receiving given choices and/or votes and storing said choices/votes in a database 15a and sending confirmation to the caller in the device 15, and to comprise still further a fourth subsystem "S4" by means of which
confirmation of the choice and/or vote received can be transferred from the device 15 to the unit 40 and an alternative-associated telephone number can be transferred to the unit 40.

Each of the units 40 can be programmed via a data network 52 for sending requisite information to the unit 40 via a television channel 54. Alternatively, satellite transmission can be effected via a channel 56 for the same purpose.

There is nothing to prevent the channel selector 40 from consisting of a digital TV decoder.

Confirmation can be given to the caller in accordance with a number of different alternatives without needing to setup a speech channel through the network 3 to this end.

In addition to sending information to the voter 40 from a network-associated circuit over a network-associated signalling channel 33, the information can be sent to the telephone apparatus 4 or corresponding apparatus 40 (40) through the medium of an engaged signal or some other tone signal while using a network external channel (54, 56) to this end.

It is also proposed that the alternative-associated telephone numbers are sent to all channel selectors or to chosen channel selectors in accordance with available demographic data/information.

It will be evident from the embodiment described above that there have been created within the telecommunications network 3 with the aid of simple means conditions which enable registration, via the device 5, of a much larger number of choices/votes made from a much larger number of callers per unit of time than the corresponding number that can be made per unit of time when the speech transmission capacity constitutes a limiting factor.

Figure 5 illustrates co-ordination between the telecommunications network 3 and the connected device 15 in accordance with the invention.

The figure shows a telephone exchange unit 30 having input ports 31 and output ports 32, where the output ports co-act with a further telephone exchange unit 30'.

Each of these exchange units 31, 32 and 30' and the exchange equipment or device 15 co-acts with an SSP (Service Switching Point) function referenced SSP31, SSP32, SSP30' and SSP15.
These SSP functions co-act, in turn, with an STP (Signal Transfer Point) function, wherewith SSP31 is connected to STP31, SSP32 is connected to STP31, SSP30' is connected to STP30' and STP15 is connected to SSP15.

All STP functions are co-ordinated with an SCP (Service Control Point) function referenced SCP60.

Polling in accordance with the inventive proposals can take place in the following fashion.

A subscriber 4 activates circuits in the exchange 30 to obtain a coupling tone, and then activates a vote-related telephone number of the type "x, x, y, y, z, z", where "x, x, y, y" constitute the group number whereas "z, z" constitute an indication of the choice or vote made.

Co-ordination between SSP31, STP31, STP32 to SCP60 is effected via control signal channels, such as to enable a connection to be established through the exchange units 32, 30' via the telephone number (x, x, y, y, z, z), among other things.

When such is the case, the SCP60 sends to SSP15 an A-number identification "A, A, A" and a B-number identification (x, x, y, y, z, z) through the medium of STP30' and STP15 via the interface 50.

The control signals containing A-number identification and B-number identification are received here and stored in the database 15a, wherewith a return signal sent to SCP60 indicates that it is not possible to receive the call, wherewith the call is released via SCP60.

The SSP function SSP15 is therewith able to generate a signal which represents a function "not functioning" or the like subsequent to having registered the A-number (4, 42) and the B-number "x, x, y, y, z, z" concerned and stored said numbers in a table in the database 15a.

Figure 5 shows four stored choices/votes from four different callers, of which two (first A, A, A and fourth A, A, D) vote for a first alternative choice (z, z) while two others (second A, A, B and third A, A, C) vote for a second alternative choice (z, x).

It will be understood that the invention is not restricted to the aforesaid and illustrated exemplifying embodiments thereof and that modifications can be made within the scope of the inventive concept as illustrated in the accompanying Claims.
It will be noted in particular that each illustrated unit can be combined with each other illustrated unit within the framework of enabling a desired technical function to be achieved.
CLAIMS

1. A system that can be connected to a telecommunications network (3) via which the system is able to register or record a chosen alternative option or to declare a vote chosen from a plurality of options, by initiating a call (B2) to the network (3) on a telephone number (x, x, y, y, z, z) allotted to the chosen alternative option, characterised in that one or more devices (15, 15a) is/are connected to the output connections (32b) of the telecommunications network (3) to enable each incoming call to each of the alternative-pertinent and call able telephone numbers to be received and registered via said one or more devices (15, 15a) in the absence of sending to the telecommunications network signals that are representative of the establishment of a speech connection; and in that said device or devices (15, 15a) connected to said telecommunications network is/are adapted for the receipt of control signals associated with said telecommunications network and the storage of A-number identification (A, A, A) contained in the control signals and the storage of B-number identification (x, x, y, y, z, z) contained in the control signals as an indication of the choice or vote made.

2. A system according to Claim 1, characterised in that said choice is related to a television program.

3. A system according to Claim 1, characterised in that said choice is related to a radio program.

4. A system according to Claim 1 or 2, characterised in that said choice represents a vote placed in an opinion poll.

5. A system according to any one of the preceding Claims, characterised in that a choice is made or a vote is placed by initiating a call to an alternative-allocated telephone number via a telephone apparatus, such as a telephone apparatus situated close to the television apparatus presenting the television program or a telephone apparatus situated close to a radio receiver presenting said radio program.
6. A system according to Claim 1, 2 or 4, characterised in that a television-channel selector unit is connected to the telecommunications network and to the television apparatus presenting said television program and is adapted to initiate a call to each of the alternative-allotted telephone numbers.

7. A system according to Claim 6, characterised in that an alternative or option is selected via a remote control device or corresponding means, and in that a corresponding alternative-allotted telephone number is activated by unit-associated circuits for initiating a call.

8. A system according to Claim 6 or 7, characterised in that said channel selector is a digital TV decoder.

9. A system according to Claim 1, characterised in that said device or devices is/are provided with circuits for sending to the caller confirmation to the effect that said choice or said vote has been registered.

10. A system according to Claim 9, characterised in that said confirmation is effected via an information transfer from said circuit, such as over a network signalling channel.

11. A system according to Claim 9, characterised in that said confirmation is effected via an information transfer from said circuit to the voter over a channel external of the telecommunications network.

12. A system according to Claim 1 or 6, characterised in that said unit is connected to the telecommunications network via a modem.

13. A system according to Claim 6, characterised in that selected telephone numbers pertinent to respective choice options are entered for storage in said unit via a network-external information transfer.

14. A system according to Claim 13, characterised in that a television network is used for said information transfer.
15. A system according to Claim 13, **characterised** in that a satellite-associated network is used for said information transfer.

16. A system according to Claim 14 or 15, **characterised** in that the same alternative-allotted telephone numbers are entered for storage in all or in selected channel selectors.

17. A system according to Claim 16, **characterised** in that the alternative-allotted telephone numbers are distributed in accordance with available demographic data/information.

18. A system according to any one of the preceding Claims, **characterised** in that a unit identification is stored in said device or devices and is there related to a unit-allotted A-number.

19. A system according to Claim 1 or 16, **characterised** in that a selected number of group co-ordinated units are allotted the same callable number for corresponding alternatives or options.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

**IPC7:** H04M 3/42, H04Q 3/00  
According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

**IPC7:** H04M, H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE, DK, FI, NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**WPI DATA, EPO-INTERNAL**

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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<td>WO 9931899 A1 (ALCATEL USA SOURCING, L.P.), 24 June 1999 (24.06.99), abstract</td>
<td>1-19</td>
</tr>
<tr>
<td>A</td>
<td>WO 9800955 A2 (BELL SOUTH CORPORATION), 8 January 1998 (08.01.98), page 5, line 15 - page 8, line 6; page 16, line 35 - page 17, line 5, abstract</td>
<td>1-19</td>
</tr>
<tr>
<td>A</td>
<td>WO 9941894 A1 (ERICSSON AUSTRALIA PTY. LTD.), 19 August 1999 (19.08.99), abstract</td>
<td>1-19</td>
</tr>
<tr>
<td>A</td>
<td>WO 0070820 A1 (ERICSSON AUSTRALIA PTY. LTD.), 23 November 2000 (23.11.00), abstract</td>
<td>1-19</td>
</tr>
</tbody>
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Further documents are listed in the continuation of Box C. See patent family annex.

Date of the actual completion of the international search: 9 July 2002

Date of mailing of the international search report: 11-07-2002

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</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US 5675635 A (BENJAMIN MARK VOS ET AL), 7 October 1997 (07.10.97), abstract</td>
<td>1-19</td>
</tr>
<tr>
<td>A</td>
<td>US 6016337 A (MIKA PYKÄLISTÖ), 18 January 2000 (18.01.00), abstract</td>
<td>1-19</td>
</tr>
</tbody>
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Form PCT/ISA/210 (continuation of second sheet) (July 1998)
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<th>Publication date</th>
<th>Patent family member(s)</th>
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<tr>
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<td>AU 1932399 A</td>
<td>05/07/99</td>
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<td>08/01/98</td>
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<td>07/10/99</td>
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<td>CA 2258616 A</td>
<td>08/01/98</td>
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<td>21/04/99</td>
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<td>US 5838774 A</td>
<td>17/11/98</td>
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<tr>
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<td>07/10/97</td>
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<tr>
<td>US 6016337 A</td>
<td>18/01/00</td>
<td>AU 707365 B</td>
<td>08/07/99</td>
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<td>AU 5337096 A</td>
<td>30/10/96</td>
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<td>BR 9604925 A</td>
<td>09/06/98</td>
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<td>CN 1181863 A</td>
<td>13/05/98</td>
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<td>EP 0820681 A</td>
<td>28/01/98</td>
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<td>FI 100496 B</td>
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