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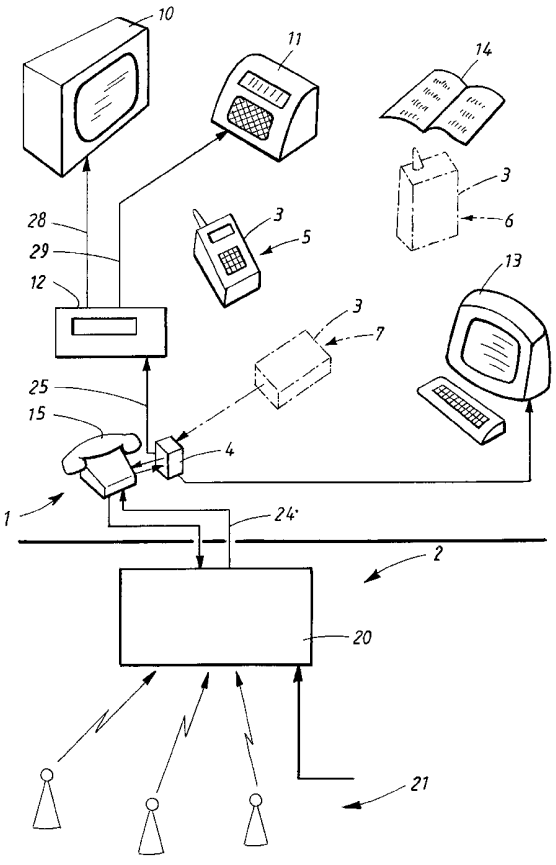
(54) **Title:** PROCEDURE AND SYSTEM FOR INTERCEPTION AND REPRODUCTION OF ELECTRONIC INFORMATION



(57) **Abstract:** Procedure and system for interception and reproduction of electronic information. On one hand, the system comprises a number of user units (1) which each one has a number of receiving and presentation units (10, 11) for audio and video, such as radio receivers and TV receivers, and on the other hand an operator structure (2) with a data base (20) connected to the user units and a number of transmitters (21) for electronically based information such as radio and TV programs, that may be received by the user units. In the operator structure (2), transmitted information is continuously stored together with an identification pattern, which is linked to the identity of the channel, the division of the information/programs into portions with different information contents and a time label. The user units (1) are equipped with a manoeuvring device (3), with which the determined program portion will be indicated to the data base (20) by means of the attached identification unit. Thus the indicated portion in the data base (20) is chosen for delivery to the user unit (1) in question, for presentation or storage. The manoeuvring device (3) is arranged to manually indicate the determined program portion chosen by means of some program schedule or alternatively indicate the ordered program portion by activating the manoeuvring device at a certain point of time during the on-going transmission.

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— *with amended claims*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Procedure and system for interception and reproduction of electronic information

TECHNICAL FIELD

The present invention relates to a procedure and a system for interception and reproduction of electronic information such as registration of portions of broadcasted radio or television programs according to instruction from a system user, and reproduction of the information in question to a predetermined addressee.

BACKGROUND ART

Users of systems that transmit information, for example broadcasting systems and television systems and systems for transmissions via the Internet sometimes have a desire to keep certain portions of the transmitted information in order to take part of those portions again and maybe also to file them on some recording media. In order to fulfil such desires, recording devices such as audio and video recorders are available. However, these means are limited concerning that the user have to plan the recording according to program schedules if such are available, which normally not is the case for the Internet. Everybody does not have access to such devices or wishes to work with these means.

DISCLOSURE OF INVENTION

Within the present invention, a procedure and a system for selective registration of episodes from information transmitted electronically by different providers in a way that is very simple for the user is indicated. Using the procedure, the registered information may then be delivered to the user for re-reception and/or filing. The system is arranged in such a way that transmitted information is retrieved from certain predetermined transmission

channels in a database from a certain identification pattern, that the user of the system possesses a device which may be manoeuvred to register an identification for the program respective portion of program that the user wishes to register, and which device is arranged to communicate the identification on question to the registered database, which in turn delivers the registration covering the indicated program, respective portion of program.

BRIEF DESCRIPTION OF DRAWINGS

In the following, an embodiment of the invention is described with reference to the enclosed drawings, where

Fig. 1 shows a block diagram for the system according to the invention;

Fig. 2 shows a manoeuvring device that is a portion of the system.

MODE FOR CARRYING OUT THE INVENTION

The block diagram in fig. 1 shows the system according to the invention. It may be divided into to main structures, on one hand a structure that the user units that are connected to the system are in, and commonly designated with 1. The other main structure is the one in which the system operator is present, and it is designated with 2.

At respective user unit, the user structure comprises two system components, a manoeuvring device 3, see also fig. 3, and a modem 4 or the equivalent. The manoeuvring device 3 is shown in three user positions, which are indicated 5, 6, 7. As to the rest, the user structure in the user units comprises receiving equipment of a generally known kind, that does not have to be special components in the system. As an example of such components, fig. 1 shows a TV receiver 10, a radio receiver 11, a recording device 12 of some kind, for example a video tape recorder or registering DVD player, a computer 13 and a program folder and also a telephone 15 to which the

modem 4 is connected or, alternatively, some other communication equipment for establishing connection with said system operator. However, the stated equipment is only mentioned as an example, and may be less as well as more extensive.

The operator structure 2 comprises the database as a component, which is designated with 20 and which comprises establishment for registration of transmitted information. As to the rest, the structure comprises information distributors in the form of units 21 which transmit information in such a way that it may be received by the database 20 as well as by the receivers that belong to the user structure: the TV receiver 10, the radio receiver 11 and the computer 13. It is then assumed that the transmitted information not has to be selectively directed towards any predetermined receiver, but may be intercepted by a larger circle. The units 21 are indicated in the figures as a ground transmitter for radio waves, but may just as well be a satellite transmitter or a transmitter for cable reception at the user, and also sources for data communication such as the Internet. The data base 20 is arranged to intercept a larger or a smaller number of the information channels which are generated from the transmitter units 21. The system operator is assumed to account for the running of the data base, while the units 21 may be run by separate operators within the radio/TV, cable and internet structures which may be called channel operators.

Between the data base 20 and all the user units 1, which are connected to the system, there are communication channels, and such a communication channel is designated with 24 at the exemplified structures 1 and 2. In the figure the communication is shown, which shall be two-way communication, using the telephone system as in the embodiment example. Then the specific communication that shall take place between the data base and respective user structures shall run via the modem 4, which here is shown connected to the telephone 15, which in turn is connected to the communication channel 24. However, this is only chosen as an example. The communication may

just as well be wireless and may be completely disconnected from the telephone system. The modem 4 is on the other hand shown further connected to the recording device 12 with a communication line 25. This communication may be effected via cable or in some other way, for example with a short-distance radio connection. The computer 13 may also be connected in a similar way, which is indicated with the communication line 26.

One model of the manoeuvring device 3 is shown in fig. 2. There it is shown that the manoeuvring device has a cover 32 with a side on which a display window 33 is situated, and also a number of keys. The keys are divided into two main keys 34, "numbers", and 35, "clock". There is also a numerical key set 35. On a short side of the case there is a reading pen 38 for bar-codes and a signal window 39, through which a light-signal may be transmitted and received. Further keys may be arranged for special functions or as a keyboard with letter keys. Especially if there is a large number of keys, they may be situated on several of the sides of the manoeuvring device.

The manoeuvring device 3 shall be arranged to activate communication with the data base 20. For the embodiment example, it is assumed that this communication is executed with the help of the modem 4, which on one hand is arranged to receive wireless signals, such as coded signals by means of infrared light, from the manoeuvring device, and on the other hand via a communication channel for forwarding to the data base, which is indicated in the figure via a telephone connection 24. For such an embodiment, the modem shall be supplied with a light-window for two-way communication with the manoeuvring device.

In order to enable this communication, the manoeuvring device and the modem have to be in such a position (see position 7) that the light-signal can be transmitted. An alternative is to let the transmission take place using radio waves thus making the placing of the two units in relation to each other more

unrestricted. It is advisable that the manoeuvring device is made to act as a remote control for manoeuvring the TV receiver (see position 5) and other units within the structure 1. The equipment may then be arranged to interact with several control media, for example infrared light for manoeuvring of units such as the TV receiver and radio waves for contact with the data base via a modem. If the manoeuvring device is placed in a position for communication with the equipment such as the TV receiver, this also brings the advantage that it in the same moment can communicate with the modem. The effect thus gained will be described in more detail in the following.

The purpose of the system is that the user will be able to access recordings registered according to a certain identification pattern from programs and portions of programs transmitted from different transmission channels, for re-transmission via one's own reproduction device such as a TV or radio receiver, or for registration in order to keep the material at the user. Such re-transmission and registration, respectively, shall then be easy for the user to arrange with the help of the system, without the user having to handle any recording devices and not necessarily any own recording media which would need to be filed. This is achieved in the following manner using the described system device:

The data base 20, may also be called the server, works by continuously storing transmissions from the units 21, which have been predetermined to be included in the system. This storage may be performed by memories in the data base itself, but stored material may also be accessible by having the transmission unit 21 to store transmitted information itself, and keeps it available for access from the data base 20. The stored transmission material is kept for a certain predetermined amount of time, of the magnitude a couple of weeks. The server 20 then has to possess a considerable memory capacity, possibly in combination with the memory capacities of connected transmission units. It is then this server that shall be kept available for the user within his structure.

The incentive for the user to access information from the server may be of different kinds: The user may establish that some information, such as a TV or radio program will be transmitted a certain time, while the user wishes to take part of it at another time, alternatively wants it stored for an uncertain, future use, or both, or that the incentive is an immediate observation of that some information is transmitted, of which the user wants to take part for closer investigation.

For the first case, the statement of the coming information can be acquired from published program schedules, which is illustrated by the publication 14, or by program schedules or information handed via for example TV or radio transmissions or using the computer 13, via the Internet. The user thus acquires information of when the information in question is transmitted, and can program data using the manoeuvring device for identification of said information in question, and also the reproduction time if such may be determined and if the transmission will be stored for future use, respectively. The programming may be simplified if respective information portion is provided with the show-view numbering used for TV programs. If the publication in question is supplied with bar-codes, the reading pen 38 may be used. Alternatively, at transmission of a program schedule, a code may be supplied in such a manner that it may be received directly into the manoeuvring device after its activation.

At the modem 4, the order of the indicated information is transmitted to the data base 20. This is then activated to, at the predetermined point of time, reproduce the stored information via the modem 4 via selected device, the TV receiver 10, the radio receiver 11 or the computer 13. If the order concerns a storage for an uncertain amount of time for a later reproduction one ore more times, the information in question is kept stored in the data base during a longer or shorter access time. If the user wishes an own storage of information, this may be ordered, and data for said information are

then transmitted via the modem 4 to the recording device 12 for recording on a media adapted for it. Alternatively, the computer 13 may be used for storage in its operational memory or some computer storage media such as a floppy disc.

If, according to the other case, a momentary interception of a transmitted piece of information shall be done, the manoeuvring device is activated immediately when the user has discovered that the information is transmitted. The manoeuvring device which contains a clock then registers the point of time for the activation, and at which channel the information is transmitted. The latter may be informed using the keys on the manoeuvring device when it has been activated. The length of time for the registration of the information is also stated, as a time before the registered point of time and a period thereafter, or by stating that one wants access to the complete program in which the indicated portion is included. Data for the order, including the registered point of time are then transmitted to the data base via the modem. Storage and reproduction are then executed as described before with regard to the time period of the information that has been indicated to be of interest. The indication of the current transmission channel for such momentary interception of data for a piece of information that will be made available, can be made automatically if the receiver in question is arranged for transmission of a code indicating which transmission channel that it is activated for. Alternatively, such a code may be supplied by the sender of the channel in question in such a way that it may be read with the manoeuvring device.

If these possibilities can not be used, it is conceivable that the data base may be arranged for a search of which information that was transmitted when the manoeuvring device was activated. Then the manoeuvring device must be arranged for storage of an information portion of data that is characteristic for said information portion. These data are transmitted together with data of the point of time to the server. This may then be arranged to compare information data registered by the manoeuvring device with information data

at the registered point of time of the transmission channels that the data base is arranged to keep available by storage.

As apparent from the above, the system user uses the manoeuvring device to order the data base which information portion that shall activate delivery from the data base to the system user in question. This requires that an identification pattern is created in the computer, which corresponds to the identification pattern that is received from respective user. This identification pattern is necessarily based on at least the following information units:

- Identification for the information channel in question. As mentioned here, this identification may be notified via manual coding via the manoeuvring device, thus the user indicates which information channel that is concerned using the keys of the manoeuvring device. This is necessary if the user has retrieved information about the program in question in a program schedule. When using show-view coding, it makes the channel and the time slot for the program in question evident.

  Alternatively, the identification of the channel is produced automatically in different ways: by having a built-in code in the transmitted information, indicating the program source, by letting the receiving device, radio, TV or computer, provide with a channel identification, that may be intercepted with the manoeuvring device for transmission to the data base via the modem.

  As also mentioned, lacking such program information from the program source or the reproducing device of the system user, when activated, the manoeuvring device can be arranged to intercept a limited program portion from which a channel identification is produced in the data base by comparison between transmitted program portions from different channels at the time of activation.

These automatic systems for interception of the channel identification is thus used when the system user orders registration for delivery by activating the manoeuvring device when reception is in progress at the system user.

Shall, however, a pre-programming be made for registration of a coming program, it has to be accomplished at the system user by usage of program schedules, possibly in connection with indication for on-going registration of periodically transmitted programs. Identification can be made for several channels for simultaneous registration, for the system user in question, of several channels overlapping each other concerning transmission time for delivery to the system user at different, later points of time.

- Identification of time periods and points of time. Which time period a registration for delivery shall refer to at the described manual manoeuvring via the keyboard of the manoeuvring device, may often be confirmed using the starting point of time for the program. The program schedule of the channel, which may be stored in the data base, states the duration time of the program in question, thus registering the program during this time starting from the starting point of time. When using the show-view system, it indicates both the starting and the ending point of time.

When activating the manoeuvring device during on-going reception, the point of time for the activation is indicated at the same time as a continuous time labelling is performed in the data base for the transmissions from the channels which shall be used in the system. By combining the point of time label and the corresponding time label for the channel, which has been identified in any of the ways described above, the program portion which shall be registered for delivery can be identified. The system user may then have different desires concerning

the length of time for the registration: From the start of the identified program portion and to its end, from the point of time of the activation of the manoeuvring device and a time period ahead or a determined time period before and after the point of activation, for example. Such orders concerning the length of time for the registration and thus of the start and end of the registration have to be made by the system user in some way, either at each registration occasion, or following some predetermined system.

- When ordering a registration, a piece of information is required from the system user to the data base concerning delivery time and delivery forms. Concerning delivery time, it may be determined as early as at the point of ordering via the keyboard of the manoeuvring device, or delivery may be performed by ordering the data base at the desired point of time with identification of the registration in question. Such an identification may be transmitted via the manoeuvring device by activating any such stored identification. The system user may of course also order repeated delivery of the same program portion. This consequently concerns delivery for transmission at the system user in direct connection with the delivery.

Another alternative is that the user orders delivery for storage in some storage media at the user. Also, in this case, ordering may be focused on communication at a certain point of time or at direct ordering. Thus the user can put his registration device in order for registration on the media carrier that the user wishes to use, for example on a certain, selected audio or video tape, a floppy disc or a CD.

- A further identification that is necessary, is the identity of the orderer, which suitably is stored in the manoeuvring device or the modem for transmission to the data base at the ordering occasion. It shall then be possible to order transfer of the registered information from the data base

to another address then the orderer in question. In this manner, it is possible to, for example, order transmission from a place, by way of example the place of work, for transmission or registration in another place, for example at home.

If storage of the information for any channel takes place at any of the channel operators, the units 21, instead of in the data base 20, in order to be retrieved to the data base when needed, for distribution according to some order from some system user, information stored at the channel operator must be linked to an identification system. How one of these may be constituted is apparent from the above.

The procedure and the system according to the invention should be of considerable interest in connection with TV transmissions. As we have a more and more abundant supply of channels and programs, the viewers tend to restrict their choice of programs to determined fields of interest. Thus certain programs are chosen, either series programs or randomly transmitted programs within certain fields of interest instead of being focused on viewing the programs that have been transmitted at points of time when one has an opportunity to view the broadcast, as it has been up to now. The procedure and the systems offers extensive possibilities to direct the program contents to the points of time when the user wants to view. The same the same thing may be said of radio transmissions. There is then an opportunity to choose several programs that are overlapping in time, for successive delivery at chosen points of time.

The usage seems to be somewhat different regarding computers connected to contact a larger number of information sources. It is then often difficult or impossible to predetermine at which point of time a certain piece of information that is considered to be of interest will be transmitted. Instead, it may be the case that one wishes to keep an eye on a certain information provider, or wishes to save certain information that is intercepted during a

search, but not manages to store in the own computer in the desired extent. For such a case, however, in the manner described, a larger portion may be ordered. While storage of TV and radio transmissions perhaps primarily is of a non-professional interest, suitably programmed covering of information via the Internet or similar is of considerable interest for the trade and industry.

CLAIMS

1. A procedure for interception and reproduction of electronic information within a system, comprising a user structure (1) consisting of a number of user units connected to the system, which each one has a number of receiving and presentation units (10, 11) for audio and video such as radio receivers and TV receivers, and an operator structure (2) connected to the system consisting of at least one data base (20) and a number of units (21) arranged to transmit electronically based information such as radio and TV programs intended to be distributed, enabling it to be received by the user units within the user structure (1), with said respective user units and the data base (20) connected to at least one communication channel (24), c h a r a c t e r i z e d i n that information transmitted from said units (21) is stored continuously in the operator structure (2), said information belonging to certain predetermined information and program channels together with an identification pattern, which is linked to the identity of the channel, the division of the information/programs into portions with different information contents and time labelling for respective transmission course, that each user unit (1) is equipped with at least one manoeuvring device (3), that via using the manoeuvring device (3) and via the communication channel the determined information/program portion will be indicated to the data base (20) from respective user unit (1) by means of the attached identification unit, which is linked, in the data base, to the relevant portion in said identification pattern for the different portions of the stored information/program, thus the by means of the data base indicated portion of the information/program is chosen for delivery to the user unit (1) in question, or other user unit connected to the system for presentation in the receiving unit (10, 11) of the unit in question, or for storage in a recording device (12) at the user unit, where the manoeuvring device (devices) (3) is arranged to manually indicate the determined information/program portion chosen by means of some program schedule or similar for correlating to the corresponding program

schedule stored in the data base and/or alternatively indicate ordered program portion by activating the manoeuvring device at a certain point of time during the on-going transmission of the determined information/program, where the data base chooses the, at the point of time in question, on-going information/program portion for delivery by means of said stored time labelling.

2. Procedure according to claim 1, characterized in that at said activation of the manoeuvring device (3) at a certain point of time during on-going transmission of determined information/program, the data base (20) is programmed to store all of the continuous information/program portion that is in progress when the manoeuvring device in question is activated, in order to perform a delivery.

3. Procedure according to claim 1 or 2, characterized in that at indication of ordered program portion by activation of the manoeuvring device (3) at a certain point of time during on-going transmission, the manoeuvring device is arranged to register and store a limited time portion of a signal that represents the on-going transmission, as by video and/or audio registration of the transmission and that the data base (20) is programmed to, in the information/programs transmitted by means of the operator structure (2), find the limited portion registered by the manoeuvring device, which portion has been transferred to the data base, corresponding to the portion for identification of the information/program episode in which the limited portion is included for storage of the portion in question for delivery to respective user unit.

4. System for interception and reproduction of electronic information according to the procedure as stated in any of the claims 1-3, and comprising a user structure (1) consisting of a number of user units connected to the system, which each one has a number of receiving and presentation units (10, 11) for audio and video such as radio receivers and TV receivers, and an

operator structure (2) connected to the system consisting of at least one data base (20) and a number of units (21) arranged to transmit electronically based information such as radio and TV programs intended to be distributed, enabling it to be received by the user units within the user structure (1), with said respective user units and the data base (20) connected to at least one communication channel (24), characterized in that the operator structure (2) comprises equipment arranged for continuous storage of transmitted information from said units (21), said information belonging to certain predetermined information and program channels together with an identification pattern, which is linked to the identity of the channel, the division of the information/programs into portions with different information contents and time labelling for respective transmission course, that each user unit (1) is equipped with at least one manoeuvring device (3), that is arranged to indicate the determined information/program portion to the data base (20) from respective user unit (1) and via the communication channel (24) by means of the attached identification unit, where the data base (20) is arranged to link said identification unit to the relevant portion in said identification pattern for the different portions of the stored information/program, and that the data base (20) then is arranged to select indicated portion of the information/program for delivery to the user unit (1) in question, or another user unit connected to the system for presentation in the receiving unit (10, 11) of the unit in question, or for storage in a recording device (12) at the user unit, where the manoeuvring device (devices) (3) is arranged to manually indicate the determined information/program portion chosen by means of some program schedule or similar for correlating to the corresponding program schedule stored in the data base and/or alternatively indicate ordered program portion by activating the manoeuvring device at a certain point of time during the on-going transmission of the determined information/program, where the data base chooses the, at the point of time in question, on-going information/program portion for delivery by means of said stored time labelling.

5. System according to claim 3, characterized in that at said activation at a certain point of time during on-going transmission of determined information/program, the manoeuvring device (3) is arranged to, the data base is (20) programmed to store all of the continuous information/program portion that is in progress when the manoeuvring device in question is activated, in order to perform a delivery.

6. System according to claim 4 or 5, characterized in that at indication of ordered program portion by activation of the manoeuvring device (3) at a certain point of time during on-going transmission, the manoeuvring device is arranged to register and store a limited time portion of a signal that represents the on-going transmission, as by video and/or audio registration of the transmission and that the data base (20) is programmed to, in the information/programs transmitted by means of the operator structure (2), find the limited portion registered by the manoeuvring device, which portion has been transferred to the data base, corresponding to the portion for identification of the information/program episode in which the limited portion is included and to store the portion in question for delivery to respective user unit.

AMENDED CLAIMS

[received by the International Bureau on 23 October 2001 (23.10.01);
original claims 1-6 replaced by new claims 1-5 (3 pages)]

1. A procedure for storing and reproduction of electronic information within a system, comprising a user structure (1) consisting of a number of user units connected to the system, which each one has a number of receiving and presentation units (10, 11) for audio and video such as radio receivers and TV receivers and at least a manoeuvring device (3), and an operator structure (2) connected to the system consisting of at least one data base (20) arranged to store electronically based information such as radio and TV programs and identification patterns connected thereto, which are co-ordinated to a dividing of the information in program episodes having coherent information passages and which time identification for the respective episode, and arranged to transmit in accordance with a communication from a respective user's manoeuvring device (3), a thereby indicated episode at an indicated point of time, with said respective user units and the database (20) connected by at least one communication channel (24), characterized in that the information, by the storing of the same, is collected from on-going radio and/or TV program transmission as broadcasting from transmitter units (21), and that the database (20), at said communication from the respective manoeuvring device (3) during on-going transmission from the respective transmitter unit (21), select, at the moment of communication from the manoeuvring device, preferably the complete, on-going episode to be transmitted from the database to the respective user at said indicated point of time.

2. Procedure according to claim 1, characterized in that at said activation of the communication from the manoeuvring device (3) at a certain point of time during on-going transmission, the manoeuvring device is arranged to register and store a limited time portion of a signal that represents the on-going transmission, as by video and/or audio programs registration of the program transmission, and that the data base (20) is programmed to, in the relevant information/program find a limited program

portion corresponding to the portion registered by the manoeuvring device, and which has been transferred to the data base, for identification of the information/program episode in which the limited portion is included for registering the same for delivery to respective user's unit of the episode in question.

3. System for storing and reproduction of electronic information according to the procedure as stated in any of the claims 1-2, and comprising a user structure (1) consisting of a number of user units connected to the system, which each one has a number of receiving and presentation units (10, 11) for audio and video such as radio receivers and TV receivers, and at least one manoeuvring device (3), and comprising an operator structure (2) connected to the system and comprising at least one data base (20) arranged to store electronically based information such as radio and TV programs and identification patterns connected thereto, which are co-ordinated to a dividing of the information in program episodes having coherent information passages and with time identification for the respective episode, and arranged to transmit in accordance with a communication from a respective user's manoeuvring device (3), a thereby indicated episode at an indicated point of time, and a number of units (21) arranged to transmit electronically based information such as radio and TV programs intended to be distributed, enabling it to be received by the user units within the user structure (1), with said respective user units and the data base (20) connected by at least one communication channel (24), c h a r a c t e r i z e d b y that the database (20) is arranged to collect the information by the storing of the same from on-going radio and/or TV program transmission as broadcasting from the transmitter units (21) belonging to the operator structure and that the database (20), at said communication from the respective manoeuvring device (3) during on-going transmission from the respective transmitter unit (21), is programmed to select preferably the complete, at the moment of communication from the manoeuvring device on-going episode and transmit it from the database to the respective user at said indicated point of time.

4. System according to claim 3, characterized by that the manoeuvring device (3) is arranged, at activation of the said communication to the database (20) at a certain point of time during on-going transmission from the transmission units (21), to register and store a limited time portion of a signal that represents the on-going transmission, as by video and/or audio programs registration of the program transmission, and that the data base (20) is programmed to, in the relevant information/programs stored, find a limited program portion corresponding to the portion registered by the manoeuvring device, and which has been transferred to the data base, for identification of the information/program episode in which the limited portion is included for registering the same for delivery to respective user's unit of the episode in question.

5. System according to claim 4, characterized by that, the manoeuvring device (3) is arranged to register a light signal, so that it by activation in front of a TV-screen can register a signal derivating from the TV-transmission to be communicated to the database (20) for said identification.

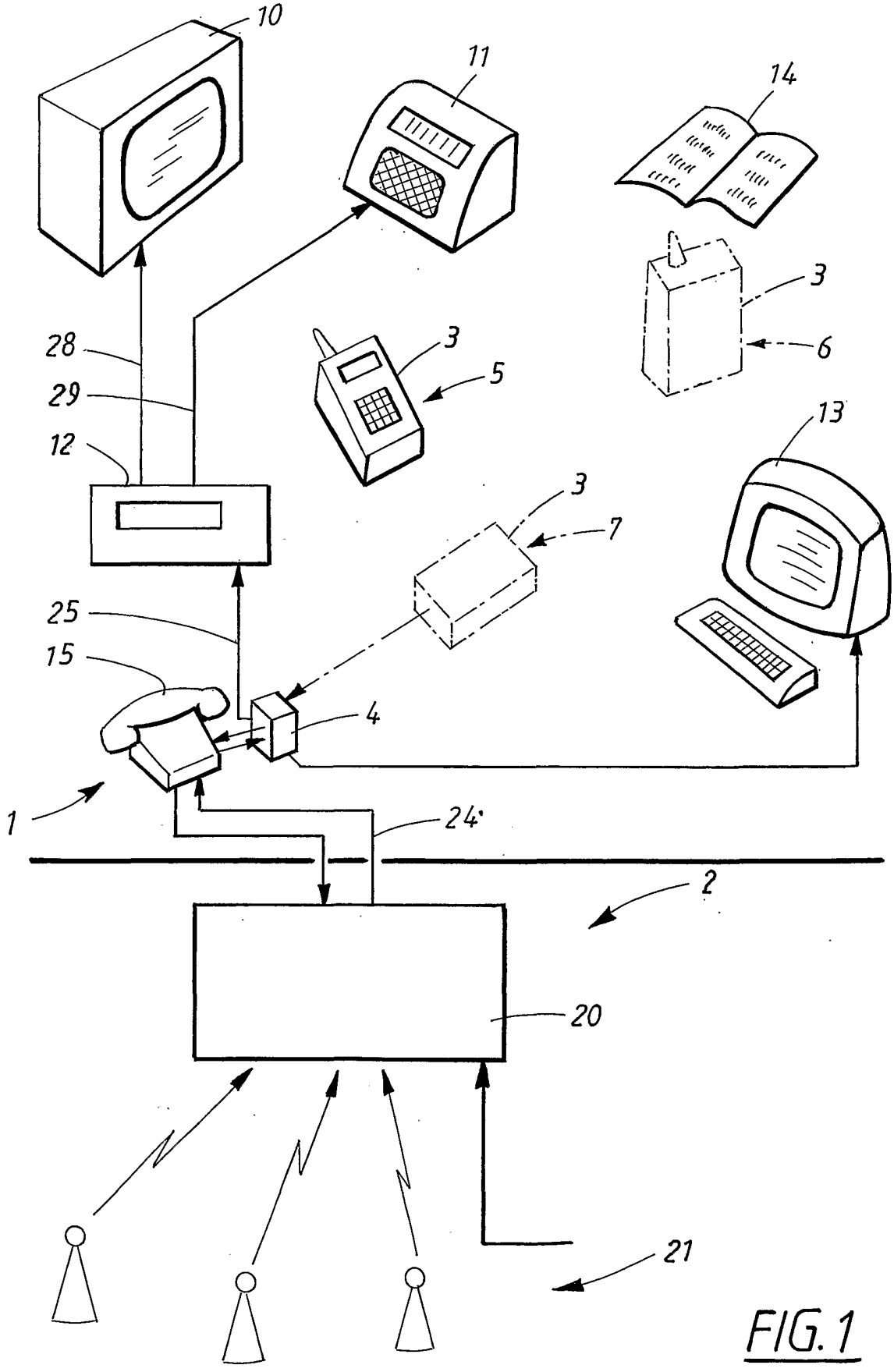

FIG. 1

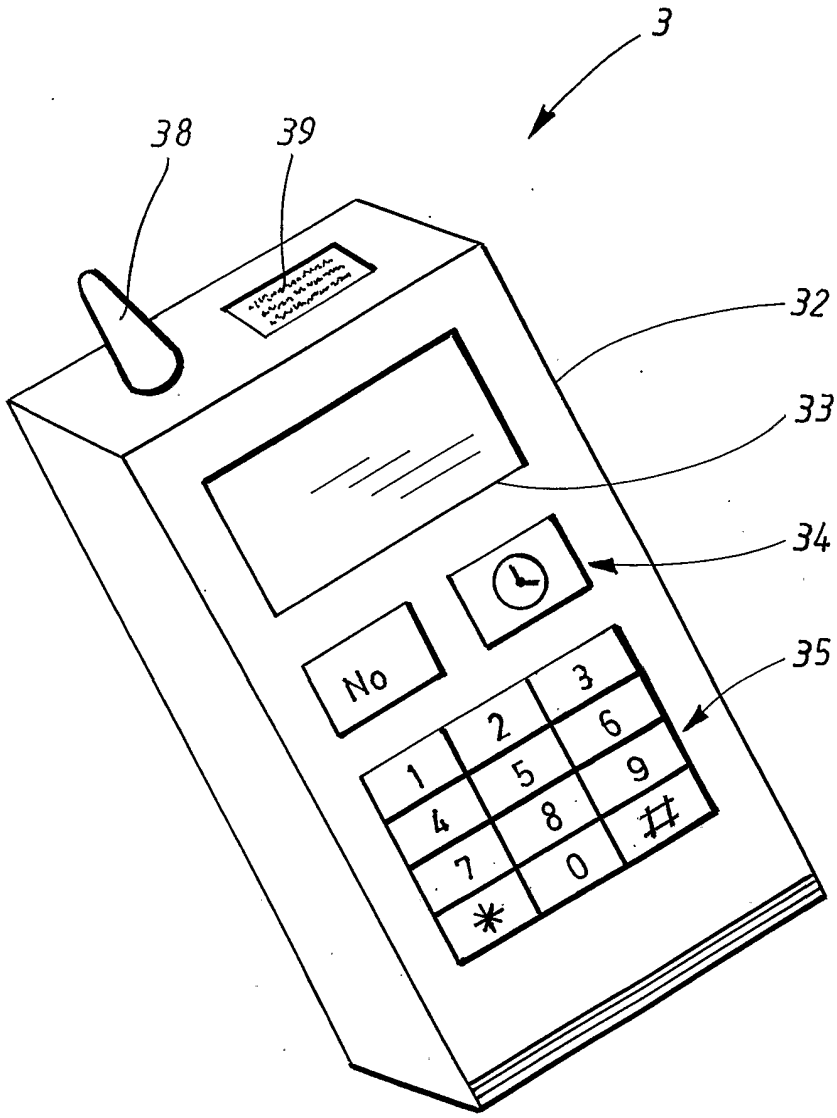

FIG. 2

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G06F 17/60, H04N 7/16
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: G06F, H04N

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)

EPO-INTERNAL, WPI DATA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5659350 A (J.S.HENDRICKS ET AL.), 19 August 1997 (19.08.97), column 3, line 5 - line 16; column 3, line 31 - line 57; column 40, line 46 - line 67, figures 19-20, abstract ---	1-6
X	US 4890320 A (H.V.MONSLOW ET AL.), 26 December 1989 (26.12.89), column 3, line 3 - line 22; column 3, line 38 - line 50, figure 1, claim 1, abstract ---	1-6
A	US 5357276 A (R.O.BANKER ET AL.), 18 October 1994 (18.10.94), column 2, line 41 - line 68, abstract ---	1-6

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
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"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
22 August 2001	27-08-2001
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer Pär Heimdal/LR Telephone No. +46 8 782 25 00

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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A	US 5253275 A (P.YURT ET AL), 12 October 1993 (12.10.93), column 2, line 29 - column 3, line 17, claim 1, abstract -- --------	1-6

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