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(71) Applicant(s)
Nagravision S.A.

(72) Inventor(s)
Patrick Bertholet

(74) Agent/Attorney
F B Rice and Co,605 Darling Street,BALMAIN NSW 2041

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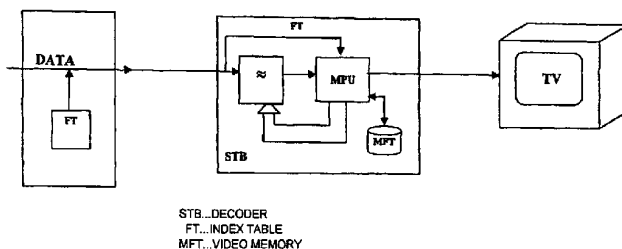
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(75) Inventeur/Déposant (pour US seulement): BERTHO-
(21) Numéro de la demande internationale: LET, Patrick [CH/CH]; Avenue de Collonge 9, CH-1004
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CH-1033 Cheseaux-sur-Lausanne (CH).

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(54) Title: METHOD AND DEVICE FOR FILTERING INFORMATION

(54) Titre: METHODE ET DISPOSITIF DE FILTRAGE D'INFORMATION



(57) Abstract: When the television programme covering several television channels is displayed, the user is confused by the multitude of programmes proposed. In order to solve this problem, the inventive method involves sorting textual data designed for displaying television programme schedules transmitted by a management centre to a plurality of pay television receiver sets. Said method consists in designing an index table (FT) by the management centre according to a predetermined sorting criterion, receiving and storing said index table (FT) in the decoder video memory (MFT), and if the desired criterion corresponds with that desired by the user, in applying parameters of the index table (FT) to a textual filtering unit at a first level, and finally in receiving the data derived from the filter and using them for displaying a programme schedule.

(57) Abrégé: Lors de l'affichage du programme télévisuel recouvrant plusieurs chaînes télévisuelles, l'utilisateur se perd dans la foison de l'offre proposée. Afin de résoudre ce problème, la méthode selon l'invention concerne le tri d'informations textuelles destinées à l'affichage de grilles de programmes télévisuels transmises par un centre de gestion à une pluralité de récepteur de télévision à péage. Cette méthode consiste à composer une table d'index (FT) par le centre de gestion selon un critère de tri prédéfini, recevoir et mémoriser ladite table d'index (FT) dans la mémoire (MFT) du décodeur vidéo, et si le critère souhaité correspond avec celui désiré par l'utilisateur, appliquer les paramètres de la table d'index (FT) à une unité de filtrage de texte de premier niveau, finalement à recevoir les informations sortant du filtre et les utiliser pour l'affichage d'une grille de programme.



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En ce qui concerne les codes à deux lettres et autres abréviations, se référer aux "Notes explicatives relatives aux codes et abréviations" figurant au début de chaque numéro ordinaire de la Gazette du PCT.

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Information Filtering device and method

Technical Field

This invention refers to the field of pay-TV, and in particular concerns a filtering
5 method of the data to be transmitted for displaying.

Background to the Invention

In the field of Pay-TV, electronic program guides are known which propose to a
user the possibility to display all the programs proposed for all pay or free channels, that
10 one can receive and where one can choose to watch free of charge or to pay a program,
also called an event. Such an event can be a competition or sporting event, an animal
documentary, an episode of a TV series, a newscast, a thriller, this list being evidently
non-exhaustive. However, these electronic program guides oblige the user to zap
through the channels, multi-channel TV, and throughout the day to make one's choice.
15 Their use is thus fastidious for the user who already knows to a great extent what he is
looking for.

Enterprises such as the IMDB (Internet Movie Database) provide information to
the public (such as the names of the actors, the placard, the signature tune...) for a great
number of films proposed on the screen. Characteristics of the offer of such enterprises
20 are available on the Internet site <http://www.imdb.com>. However, they do not inform
the television viewer who wants to view a film available on offer at a given moment, for
the hours, which follow, on his television set.

The document US 579785 describes a method to organize data in the program
grid in order to facilitate the sorting among a big quantity of information. The solution
25 proposed in this document is the learning of the preferences and habits for a given user.

This document describes a decoder receiving and processing a large number of
data with the help of a complex program loaded in a memory of the decoder. The user
chooses TV programs with his remote controller from a grid displayed on the television
screen. The selection of the TV programs can be personalized and is automatically
30 modified according to the habits of the user.

The main drawback of the described method is that the decoder needs a large
number of functions to sort and to codify the TV programs destined to the display of the
program television grid, due to the big quantity of information transmitted by the control
center. Moreover, the usually limited resources of the decoder do not allow reaching a
35 sufficient processing speed.

Thus, there remains a problem not resolved in a satisfactory way up to now for the television viewer who desires, with the help of his remote-control, to find his way in the many programs proposed, and in particular to make his choice in these data.

5 Summary of the Invention

- The present invention provides a method for filtering information from a data stream, the data stream comprising audio, video and control data transmitted by a control center to a plurality of pay-TV receivers based on the sorting of text information destined to the display of a program television grid, the pay-TV receivers
- 10 comprising a text video decoder, control inputs and a working memory, the program television grid being defined from a first set of text information issued from the control data describing an event and comprising its index, the content description, the access rights and the language, the method comprising the steps of:
- creating by the control center of at least a second set of information defining an
- 15 index table according to a predefined sorting criteria,
- adding the second set of information defining the index table to the control data of the data stream,
- transmitting the index table to the pay-TV receivers,
- receiving and storing the index table in the working memory of the text video
- 20 decoder,
- if the sorting criteria corresponds with one wanted by the user, applying the parameters of the index table to a first level text filtering unit,
- receiving information from the first level text filtering unit and using the information to display a program television grid.
- 25 The present invention also provides a pay-TV receiver for receiving transmissions from a control center, comprising control inputs and a working memory, the control center transmitting a first set of data describing an event and comprising its index, the content description, the access rights and the language so as to define a program television grid through a program grid video decoder, the pay-TV receiver
- 30 comprising
- a first level text filtering module programmed in function of a user profile, the text filtering module performing a selection according to the content of an index table comprising, for a given criteria, an index list defining the program information fulfilling the criteria and destined to the display of a program television grid, the index
- 35 table being created and transmitted by the control center and stored in the working memory.

Furthermore, this receiver contains a memory for events previously viewed and which determines the user profile so as to filter the information according to this user profile.

Each event includes a code in which its important characteristics are described
5 such as the channel on which it will be shown, the subscription type to which it is connected, the recommended minimum age and the date and hour of the transmission.

With parameters of the user is meant the whole of parameters, which allow to define a user such as the subscription type to which he subscribed, the minimum age category/ies of the programs that he wishes to see, as well as parameters which allow to
10 define the profile of the user based on his previous purchases.

Consequently, if the user uses the system more, the navigator will be able to propose him more programs in advance.

The information presented by the navigator is filtered so that the user saves an important amount of time compared to the example of an electronic program guide. In a
15 first example there are only the programs to which he has an access possibility. The channels or multi-channel TV to which he has not subscribed do not appear on the display and do not disturb his choice process. Similarly, the navigator takes into account the concern about saving money of the user who would for example like to take advantage of special offers valid in the subsequent TV hours.

In a first embodiment of the invention, the navigator operates in full screen mode, being disconnected from a program being viewed by the user. In this embodiment, the user is mainly occupied in choosing the program that he will prefer within an offer presented by the intermediate of the navigator. An important information for the user concerns programs that start later, that is to say a film of a duration for example of an
20 hour and a half, starts every quarter of an hour according to a passage cycle, each passage cycle being separated from the other passage cycles (in a number of five in this example) by a multiple of 15 minutes. According to the time available, the duration of the proposed films, their price, and the immediacy of the start of the next cycle, the user can make his choice and sit down comfortably to have a nice evening.

On the base of the user parameters, the navigator selects the different special
30 offers according to the favorite sector of the user. In fact, if sports programs have not been used frequently, the odds are that the user will be receptive to a transmission offer of a football match.

In a particular mode related to the first embodiment, the navigator proposes, in
35 the form of a menu, elements such as a list of the programs starting shortly, a list complete with the films available to voluntary purchase, a list of special offers at

reduced price at the moment of the consultation, a list of the films already bought by the user, a parents' control, the possibility to read system information as well as the choice of the language in which these elements are proposed.

The list of the programs starting soon is currently called "beginning soon". The information presented includes especially the time remaining until the beginning of the program, generally indicated in minutes.

The complete list of films proposed for voluntary purchase is generally called "All the movies". It includes above all films, that is to say programs whose interest persists after a certain time, unlike the newscasts or the courses of the stock exchange for example which age badly, in the sense that after some days their interest is minimal. This list is retouched and in general does not include the films whose vision is forbidden to the user for certain reasons. These reasons can have their origin in national laws of certain countries, in which the transmission of a sporting event is forbidden in a defined area around the stadium where it is taking place, this in order not to unduly divert the potential clients of the organizers of this event in this stadium.

The list "all the movies" can be presented either by films (by movies mode), in which case the list is a list of occurrences of a film transmitted on different channels and in the subsequent days, or by days (by days mode), in the manner of a classic television program guide on paper support in which only certain programs or films would be selected.

In order to tempt the user by flashing him the possibility to view for example a film much praised and recently released in the cinemas, but for a special price, the navigator according to the invention proposes in the menu a list of the special offers, currently called "Big deals", accompanied by their special price, and eventually of the duration of the offer.

The scope of the list of the films already bought, currently called "purchased movies", is to inform the user on his latest purchases, so as to allow him to follow the state of his account and eventually to curb an eventual television mania. In the case of a family TV set, it can be useful to the parents for controlling the television viewing of their children.

The scope of the parents' control proposed by the navigator according to the invention is to allow the parents to refine the choice of the films proposed for voluntary purchase, according to their rating, eventually by means of an access code. Rating means a qualification of the proposed films by official or semi-public institutions that have the scope to protect youth against certain types of films. In this context, parents who want can for example limit the offer to 12+, that is to say authorize only the

presentation and the purchase of films or programs authorized for persons over the age of twelve. If the parents have among their children an adolescent who they allow to view certain films, the rest of the brothers and sisters being considered as too young, they can trust this eldest one by allowing him to view a film of his choice when the younger ones
 5 are in bed, entrusting him the access code. They can also allow a certain liberty to this adolescent in choosing films within a budget, by means of a specific access code for this adolescent. The knowledge of the code allows in fact to trace back easily the total cost of the purchases carried out by means of this code.

The parents' control can also, in a particular embodiment of the invention, be
 10 realized by a programmed filtering by the parents themselves. This is useful for example when the parents do not want to follow the rating recommendation of the above mentioned institutions, for example for a certain film on which they have made a judgement by themselves.

The possibility to read system information is useful for restarting the system in
 15 the case of an accident. A simple reading of this information allows to inform an attendant to the maintenance of the system on the identifying of the subscriber, and this from a distance.

The choice of the language is particularly useful when the television market is multi-ethnic or multilingual.

20 In another embodiment of the invention, the navigator allows the user to define the type of reminder. The reminder is to be interpreted in the sense of the English "reminder". A first type of reminder is a reminder some seconds before the start of the foreseen transmission of the film, the user having then still the choice not to view the film that he bought some time before. One of the functions of the navigator according to
 25 the invention can then cancel the debit of the account if the program has in fact not been viewed, in the case where the user changes his mind.

Another type of reminder consists of forcing the use of the screen in advance. This type can be chosen by the user when he is certain, at the moment of the purchase, that the program bought will have priority on any other that he might be watching when
 30 it starts.

These characteristics allow the user to program a television evening, this program or this draft of program being freely interrupted in the case of the unexpected proposition of a new release, for example just on in town.

In a second embodiment of the invention, the navigator operates during a
 35 transmission going on, being watched by the television viewer. This embodiment is more suitable to the users with a tendency for "zapping", that is to say to the users always

hunting for a transmission that is more interesting than the one they are watching. In this embodiment, called "Present/Following", the information presented by the navigator occupies only a part of the screen of the television set, for example the lower part. It especially concerns the transmission going on the channel watched, the next
 5 transmission on the same channel, chronological data such as the time remaining till the end of the program and the total duration of the transmission, as well as the programs going on the other channels, paying or not. For these programs, the information given may concern the above-mentioned chronological data, the name or the mark of the channel, as well as a description of the favorite program preferably chosen in the
 10 language of the transmission. This description can mention all the characteristics of the program capable of thrilling the user. For example, if the transmission is a documentary on a production machine, the nature of this production may be mentioned.

In a particular embodiment of the invention, the program can present a supplementary interest for the user if specific data are shown on the screen at the same
 15 time as the representation of the action. So, in a sport speed competition, the present speed of the competitor filmed is calculated on the venue of the competition and is thus technically available for a message. This message can be activated only if the user has chosen the corresponding version "with data" of that sports transmission, by means of a different price perceived by the supplier of program package in the case of a payment
 20 offer. In this case, the synthetic information can comprise an indication as what can be bought with the version "with data". This can be done by masking, by deliberate scrambling, a part not central of the screen where these interesting supplementary data would be shown. As one will have understood, this invention allows to favor the voluntary purchase of television programs.

It is known that in the case of a overabundant offer of television programs, the
 25 video decoder cannot treat all the information on the description of each program if one desires to introduce elaborated criteria of sorting. The capacities of video transmissions allow to transmit more than one hundred channels simultaneously. For each channel, the programs shown on the electronic program guide can represent about fifty entries for a
 30 period of 12 hours. The ideal sorting should be carried out through more than 5000 information messages on the programs. In practice, the present decoders are not equipped for sorting in a convenient time such a mass of information and this is why the video decoder disposes of a filter to carry out a first selection of this information.

35 Brief Description of the Drawing

The invention will be better understood with the help of the following detailed

description, which refers to the annexed drawing given as a not restrictive example, in which Figure 1 represents the system according to the invention.

Detailed Description of the Invention

5 Referring to Figure 1, the flow of data DATA includes audio, video and control data. Added to the control data are FT data comprising the table of index, which allow a fast access to the sorting information.

In reception, the STB decoder includes a first level which acts as a "hardware" filter, that is to say it allows to pass only the messages corresponding to the profile
10 loaded in this filter. The configuration of this filter is defined by the control unit MPU of the decoder STB. The information containing the FT index table can pass the filter to be directly memorized for that purpose in an MFT memory.

The central MPU unit processes the different parameters of the electronic guide, which are sent to the TV set.

15 What is currently used as filter criteria is simply the descriptor of the channel. In fact, on an offer of 130 programs, only twenty will be of interest to the user because of the language. One will accordingly program one's filter in function of the channels whose it can understand the content.

This has nevertheless the drawback of depriving one of programs which would
20 be transmitted on a channel, mainly in Finnish for example, but in the multilingual mode, amongst which is the language of the user.

This is why, according to the invention, the system, on the transmission side, prepares the FT index table of the programs corresponding to selected criteria, according to the preferences of the users in the respective region.

25 These criteria concern for example the language, a category much asked for (sports for example) or a special offer.

For each chosen criterion, one disposes of a table identifying in a unique way the transmission concerned during the time concerned.

This table is transmitted with the audio/video data and stored by the decoder in
30 the MFT memory.

When the user wants to introduce the sorting criterion as defined by the control center, the data of the table of this criterion is transmitted to the hardware filter, which will allow to pass only those transmitted messages which fulfil the condition.

Due to this structure, the access to the programs that fulfil this condition is
35 immediate and without supplementary charge for the central unit of the decoder.

In the example, the system at the transmission side, disposes of sufficient capacities to compose such a table taking account of parameters such as the language, be it the main language or secondary (multilingual mode). Another use of this type of table is the proposal of a particular offer. The operator can thus prepare a certain
5 number of programs, which are of a particular quality and recommended by a group of experts. This type of selection can be bound to a promotional purchase offer.

The invention also concerns a Pay-TV receiver for receiving transmissions from a control center, comprising a control inputs, a working memory (MFT), this center transmitting a first set of data describing an event and comprising its index, the content
10 description, the access rights, the language so as to define a television program grid through a program grid video decoder, characterized in that it includes a first level text filtering module programmed in function of a user profile, said filtering module performs a selection according to the content of an index table (FT) comprising, for a given criteria, an index list defining the program information fulfilling the criteria and destined
15 to the display in the grid, this table being created and transmitted by the control center and memorized in the main memory (MFT).

Furthermore, this receiver contains a memory for events previously viewed and which determines the user profile so as to filter the information according to this user profile.
20

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method for filtering information from a data stream, the data stream comprising audio, video and control data transmitted by a control center to a plurality of pay-TV receivers based on the sorting of text information destined to the display of a program television grid, the pay-TV receivers comprising a text video decoder, control inputs and a working memory, the program television grid being defined from a first set of text information issued from the control data describing an event and comprising its index, the content description, the access rights and the language, the method comprising the steps of:
 - 10 creating by the control center of at least a second set of information defining an index table according to a predefined sorting criteria,
 - adding the second set of information defining the index table to the control data of the data stream,
 - transmitting the index table to the pay-TV receivers,
 - 15 receiving and storing the index table in the working memory of the text video decoder,
 - if the sorting criteria corresponds with one wanted by the user, applying the parameters of the index table to a first level text filtering unit,
 - receiving information from the first level text filtering unit and using the
 - 20 information to display a program television grid.
2. The method according to claim 1, further comprising the step of creating a table for each sorting criteria, the sorting criteria including a linguistic criteria, a category criteria and/or a criteria of a promotional offer.
3. The method according to claim 1 or 2, further comprising the step of
- 25 constituting the index table with program(s) that satisfy the sorting criteria by a time span identifier and a rank identifier in the time span.
4. The method according to any one of claims 1 to 3, further comprising the step of authorizing the display of programs about to commence.
5. The method according to any one of claims 1 to 4 wherein the pay-TV receivers
- 30 each further comprise a user profile memory which include a compilation of the programs previously brought, the method further including the step of the text filtering module authorising or suppressing the text displayed in function of the user profile.
6. A pay-TV receiver for receiving transmissions from a control center, comprising control inputs and a working memory, the control center transmitting a first set of data
- 35 describing an event and comprising its index, the content description, the access rights

and the language so as to define a program television grid through a program grid video decoder, the pay-TV receiver comprising

- a first level text filtering module programmed in function of a user profile, the text filtering module performing a selection according to the content of an index table
- 5 comprising, for a given criteria, an index list defining the program information fulfilling the criteria and destined to the display of a program television grid, the index table being created and transmitted by the control center and stored in the working memory.
7. The pay-TV receiver according to claim 6, further comprising a user profile
- 10 memory including a compilation of the programs previously bought, wherein the text filtering module authorizes or suppresses the text displayed in function of the user profile.
8. A method for filtering information from a data stream substantially as described herein with reference to Figure 1.
- 15 9. A pay-TV receiver substantially as described herein with reference to Figure 1.

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Nagravision S.A.

Patent Attorneys for the Applicant:

F.B. RICE & CO.



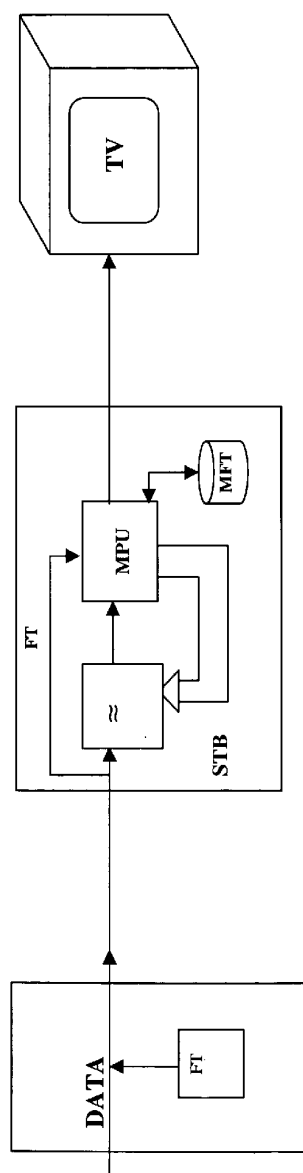


Fig 1.