# INFORMATION FILTERING DEVICE AND METHOD

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

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 one can receive and where one can choose to watch free of charge or to pay a program, also called 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 not exhaustive. However, these electronic program guides oblige the user to zap through the channels, multichannel TV, and throughout the day to make one's choice. Their use is thus fastidious for the user who already knows to a great extent what he is looking for.

Enterprises such as IMDB (Internet Movie Dated Base) 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 are available on the internet site http://www.imdb.com. However, they do not inform the television viewer who wants to view a film on the available offer at a given moment, for the hours which follow, on his television set.

There remains thus 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.

The purpose of this invention is reached by an information management method designed for screening TV program schedules on a Pay-TV receiver, comprising a text video decoder, control inputs and a memory of user parameters, a method consisting in recognizing the code of the program to be displayed, comparing this code with the parameters of the user and in displaying or suppressing the data of this program according to the content of the parameters of the user.

Each program includes a code in which its important characteristics are described such as the channel on which it will be shown, the subscription type to which it is

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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 define the profile of the user based on his previous purchases.

Consequently, the more the user will use his system, the more the navigator will be able to propose him the 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 first example there are only the programs to which he has an access possibility. The channels or multichannel 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 form, 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 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 offers according to the favourite 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.

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In a particular mode related to this first form, the navigator proposes, in 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

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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 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 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 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.

In a particular realization form 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

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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 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 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 transmission going on, being watched by the television viewer. This form is more suitable to the users tending to "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 form, 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 transmission on 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 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

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same 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 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 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 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.

The invention will be better understood with the help of the following detailed description which refers to the annexed drawing which is given as an example not restrictive, in which the single figure represents the system according to the invention.

In the annexed figure, the flow of data DATA includes audio, video and control information. In these control data are added the 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 loaded in this filter. The configuration of this filter is defined by the control unit

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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.

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 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 emitting side, prepares the FT index table of the programs corresponding to selected criteria, according to the preferences of the users in the respective region.

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 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.

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

In the example which interests us, 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).

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Another use of this type of table is the proposal of a particular offer. The operator can thus prepare a certain 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 comprising a video decoder for television program schedules, control inputs such as the remote control of the user, a memory of user parameters and a text modulation output, this receiver comprising a text filtering module authorizing or suppressing the text towards the output modulator according to the parameters of the user. 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.

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## CLAIMS

1. Text information sorting method destined to the display of program television schedules transmitted by a control center to a plurality of Pay-TV receivers comprising a text video decoder, control inputs and a memory of user parameters, characterized in that it consists in:

- composing at least one index table (FT) by the control center according to a predefined sorting criteria,

- receiving and memorizing said table (FT) in the memory (MFT) of the text video decoder,

- if the desired criteria corresponds with that wanted by the user, applying the parameters of the index table (FT) to a first level text filtering unit,

- receiving the information coming from the filter and using it to display a program schedules.

2. Method according to claim 1, characterized in that it consists of a table for the linguistic criteria, a table for the category criteria and/or a table for the criteria of the promotional offer.

3. Method according to claim 1 or 2, characterized in that it consists in constituting the index table (FT) with the program(s) that satisfy the selection criteria by a time span identifier and a rank identifier in this time span.

4. Method according to the claims 1 to 3, characterized in that it consists in authorizing primarily the display of programs for which the start is upcoming.

5. Pay-TV receiver for receiving transmissions from a control center, comprising a text video decoder for television program schedules, control inputs, a main memory (MFT) and a text modulation output, characterized in that it includes a first level text filtering module, set according to the content of an index table (FT) composed and transmitted by the control center and memorized in the main memory (MFT).

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6. Pay-TV receiver according to claim 5, characterized in that it includes a user profile memory consisting in a compilation of the programs previously bought and in that the text filtering module authorizes or suppresses the text displayed in function of the user profile.

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