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- (71) **Applicant:** SARONIKOS TRADING AND SERVICES, UNIPessoal LDA [PT/PT]; Edifício Marina Club, Avenida Arriaga, no. 73, 1 andar, sala 105, P-9004 533 Funchal, Madeira (PT).
- (72) **Inventor:** EZEQUIEL, Ruiz Rodriguez; Calle Aquilino de la Guardia no. 8, IGRA Building, 7 Panama (PA).
- (74) **Agents:** EISENFÜHR SPEISER PATENTANWÄLTE RECHTSANWÄLTE PARTGMBB et al.; Postfach 10 60 78, 28060 Bremen (DE).
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(54) **Title:** METHOD FOR SELECTING AND DISPLAYING TELEVISION PROGRAMS TRANSMITTED THROUGH AN INTERNET NETWORK, AND RELATED APPARATUS AND SYSTEM

(57) **Abstract:** A method is described for selecting and displaying, on or through a television signal receiver apparatus (1) capable of connecting to Internet (10) and of pointing to URL's (21), television programs (19) transmitted through an Internet network (10), said method comprises the step of associating at least one URL (21), or Uniform Resource Locator, corresponding to streaming audio/video of a specific television program (19), with the same television program (19) of an EPG (17), or Electronic Program Guide, received by said apparatus (1) via television broadcast, and wherein said association requires that said URL (21) be stored into a memory-type processing circuit (8) of the apparatus (1) to create a link between said specific television program (19) received through said Internet network (10) and the same specific television program (19) of said EPG (17) received by said television receiver apparatus (1) via television broadcast.

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**METHOD FOR SELECTING AND DISPLAYING TELEVISION PROGRAMS TRANSMITTED THROUGH AN INTERNET NETWORK, AND RELATED APPARATUS AND SYSTEM**

**DESCRIPTION**

The present invention relates to a method for selecting and displaying, on or through a television signal receiver apparatus capable of connecting to Internet, television programs transmitted through an Internet network, as well as to the related apparatus and system.

5 In the following description, it will be apparent that a television signal receiver apparatus is meant to be a television set with a screen, or a satellite or cable or terrestrial set-top box capable of receiving and displaying television programs, in the latter cases by using an external screen of a monitor or a television set. Likewise, a television broadcast is meant to be any broadcasting of television signals via air or  
10 cable, e.g. in accordance with the following standards: DVB-T, DVB-C and DVB-S .

It is known that television networks are now duplicating their programs being broadcast via air (e.g. terrestrial or satellite transmissions) or via cable in order to make them available to potential users also through the Internet network.

This latter viewing option is virtually dedicated to computer owners because, in order  
15 to view television programs in the so-called streaming mode, it is necessary to use a browser to point to the site of the television network transmitting the desired program and then navigate within said site until the desired program is found. This task is time-consuming and complex, and certainly it is not within the grasp of people who are not familiar with computers and Internet.

20 Nowadays, almost every television network has its own Internet site where programs can be watched in streaming mode; in Germany, for example, the ARD television network has an Internet site of its own ("<http://www.ard.de>"), just like the ZDF network ("<http://www.zdf.de>").

Therefore, if a user wants to know which television programs, whether current or  
25 future ones, are being or will be transmitted on the ARD television network, or is searching for a particular program, he/she will have to visit the associated Internet site

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and navigate therein; if nothing of interest is found, he/she will have to exit the ARD site and go, for example, to the ZDF site, where the entire process will have to be carried out again. Should then the user want to see what is available on the RTL network, he/she will have to repeat the process again. Such a large number of operations can be very annoying for the user.

This time-consuming and complex procedure for searching for a television program transmitted in streaming mode over the Internet network is not "user-friendly" at all, especially when compared to the normal reception of television programs (broadcast via air or cable) by means of a television set or a set-top box.

10 In fact, through an EPG ("Electronic Program Guide") received by the television receiver along with air or cable television programs, it is possible to explore all the television programs broadcast by a plurality of television networks with just a few moves of a cursor.

15 Many EPG forms are known in the art, some of which are broadcast by television networks, while others are created in the television receiver apparatus itself, based on information, such as program name, program duration and the like, contained in the television signal being received.

20 It is apparent from the above that a conventional EPG relating to television programs broadcast by a plurality of television networks is very easy to use when compared with the complexity of having to navigate through a plurality of Internet sites of as many television networks. It is also apparent that the prior art does not allow to easily watch a desired program again via the Internet channel by directly starting from an EPG sent to a television receiver apparatus via air (e.g. by digital terrestrial or satellite broadcasting) or via cable.

25 Furthermore, the user feels very uncomfortable when, for example, the air or cable broadcasting is not working (as far as air broadcasting is concerned, it is known that, with the advent of the digital terrestrial technology, a television channel often cannot be received due to minimal interferences or bad atmospheric conditions that totally black out the television signal) and he/she wants to watch the program through  
30 Internet, but finds out that, to his/her great disappointment, retrieving that specific program can be a very difficult task.

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In these cases it is useful to search on the Internet network for the desired program, but search times must be minimized, especially if the user wants to watch the a program in a moment of time, when such program is no longer be broadcast.

It is therefore one object of the present invention to provide a method, an apparatus  
5 and a system for selecting and displaying television programs broadcast through Internet in a “user-friendly” manner.

It is another object of the present invention to provide a method, an apparatus and a system for selecting and displaying television programs broadcast through an Internet network, which allow a user to easily switch the reception of a television program  
10 from the air or cable channel to Internet reception.

It is a further object of the present invention to provide a method, an apparatus and a system for selecting and displaying television programs transmitted through an Internet network, which allow a user to easily and quickly search the Internet network for a television program.

15 These and other objects of the invention are achieved through a method, an apparatus and a system for selecting and displaying, on or through a television signal receiver apparatus capable of connecting to Internet, television programs transmitted through the Internet network, as claimed in the appended claims, which are an integral part of the present description.

20 In brief, a method is described for selecting and displaying television programs transmitted through an Internet network, said method comprising the step of associating at least one URL (Uniform Resource Locator), corresponding to streaming audio/video of a specific television program, with the same television program of an EPG (Electronic Program Guide), received by said apparatus, wherein said association  
25 requires that said URL be stored into a memory of the apparatus to create a link between said specific television program (19) received through the Internet network and the same television program (19) of said EPG received by said television receiver apparatus (1).

Further features of the invention are set out in the appended claims, which are  
30 intended to be an integral part of the present description.

The above objects will become more apparent from the following detailed description

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of a method and a system for selecting and displaying television programs transmitted through the Internet network according to the present invention, with particular reference to the annexed drawings, wherein:

- 5 - Figure 1 shows a scenario divided into blocks related to a television signal receiver apparatus according to the present invention;
- Figures 2a and 2b show two examples of EPG's according to the present invention;
- Figure 3 shows one example of an EPG data structure stored in a memory of the television signal receiver apparatus according to the present invention.

With reference to Fig. 1, there is shown a preferred embodiment of the invention of a television receiver apparatus 1, in particular a television set, but it may also be a set-top box, comprising a tuning and demodulating unit 2 that receives a normal television signal through an input 3, which may be a terrestrial or satellite antenna (but may also be the coaxial input connector of a cable television network). The tuning and demodulating unit 2 is connected to a video circuit 4 that decodes a television video signal, e.g. with Mpeg2 or Mpeg4 coding, which, under the control of a central processor 5, in particular containing one or more microprocessors, supplies the television video signal to a switching circuit 6 ("switch"), which is then sent to a screen 7 for reproduction, the latter being external to the television signal receiver apparatus 1 if the apparatus 1 is a set-top box.

20 From the television video signal decoded by the video circuit 4, an Electronic Program Guide (EPG) is extracted which is then sent to a memory-type processing circuit 8, in particular containing a non-volatile read/write memory. Under the control of the central processor 5 (which also controls the operation of the switching circuit 6), the memory-type processing circuit 8 stores the data of the EPG programs received along with the television signals irradiated via air or cable.

The EPG data transmitted within the television signals received at the input 3 of the apparatus 1 are updated over time but, according to the invention, those relating to programs no longer broadcast are also kept in the memory-type processing circuit 8 for a certain period of time, e.g. a week (seven days). Said period of time may be set by the user through a menu of the apparatus 1, or it may be preset by the manufacturer of the apparatus 1 based on the physical size, expressed in bytes, of the memory 8.

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The apparatus 1 further comprises at least one network interface 9, e.g. Wi-Fi, Ethernet or the like, which allows the apparatus 1 to connect to an Internet network 10. This functionality is made possible by a “browser” application comprised in the apparatus 1, which is implemented at application level through the central processor 5 and exploits the memory-type processing circuit 8 for storing the Internet navigation data (this functionality is currently available, for example, in the so-called “Smart TV” television sets).

Furthermore, the apparatus 1 comprises a receiver 12, also connected to the tuning and demodulating unit 2, which receives the control signals from a remote control device 13 operated by a user and supplies them to the central processor 5 (via a connection not shown in the drawing for simplicity) for the execution of functions of the apparatus 1, including program tuning.

When an audio/video signal is received in streaming mode from the Internet network 10, said audio/video signal is processed by the central processor 5 and decoded by a web decoder 14, in particular containing a microprocessor, which generates a video signal suitable for being displayed on a screen and then redirects the audio/video signal obtained from the streaming towards the switching circuit 6, from which it arrives at the screen 7. The information useful for video decoding of the streaming signals (e.g. the “codecs” that allow to decode formats such as DivX, Xvid, MPEG-4, H.263, H.264, MPEG1, MPEG2, AVC, FLV1, FLV4 and the like) reside in software applications (e.g. so-called “plug-ins”) stored in the memory-type processing circuit 8 and used by the web decoder 14.

A similar process is carried out for the audio signals, i.e. both the one associated with the television signal irradiated via air or cable and the one received in streaming mode; for simplicity, however, it will not be described in detail.

Still with reference to Fig. 1, a block scenario 100 is shown wherein a plurality of television network transmitters 15 (“TV 1”, “TV 2”, “TV 3”.....“TV N”) duplicate the air or cable irradiated programs to make them available to potential users of the apparatus 1 also through the Internet network 10, and the apparatus 1 is connected to the Internet network 10 through the network interface 9.

With reference to Figs. 2a and 2b, in a first embodiment of the invention the contents

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of an EPG 17 broadcast by a plurality of television networks 15 are not those known in the prior art; instead, for each television program 19 the typical EPG data are complemented with an Internet address (URL) 21, or multiple addresses 21, where that television program 19 will be available for a given number of days, e.g. a week (seven  
5 days). Here are some examples of such URL's 21 in Germany:

- <http://www.zdf.de/ZDFmediathek#/beitrag/video/1706158/Blaulich>;
- <http://www.zdf.de/ZDFmediathek#/beitrag/video/1019074/Boeses-Erwachen>;
- <http://www.ardmediathek.de/das-erste/panorama/tod-in-der-fabrik-der-preis-fuer-illigekleidung?documentId=12717100>.

10 In this manner, when the user, for whatever reason, wants to watch a television program 19 on his/her apparatus 1 through the Internet network 10, e.g. because air or cable reception is not good, or because the desired program 19 has already been broadcast and is therefore only available through the media libraries of television networks 15 (which typically make it available to users for another week), it will be  
15 sufficient in this case to display the advanced EPG 17 stored in the memory-type processing circuit 8, which shows the currently available television programs 19 as well as old ones stored for a predetermined period of time according to the first in - first out principle. When a key is pressed on the remote control device 13 (or a key on the apparatus 1 itself) for selecting the "Internet reception" mode after having selected  
20 a specific program 19 from the advanced EPG 17, the central processor 5 will command the network interface 9 to point, through a browser, to the URL 21 associated with the television program selected from the advanced EPG 17 and, once the command to start the streaming audio/video has been sent to the site of the chosen television network. The signal received through the network interface 9 will be  
25 transferred to the web decoder 14, which will then treat it in such a way as to make it suitable for being sent, through the switching circuit 6, to the screen 7. It must be pointed out that the user does not need to know which URL must be pointed to in order to view the desired program through the Internet network, since the advanced EPG 17 includes the data of the URL 21 concerned (for each program), and there is no  
30 need to show it to the user, in order to avoid hindering the vision of the advanced EPG 17 itself. The user only needs to be able to select the desired television program 19,

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since the apparatus will then associate it with the corresponding URL 21 and point to the correct address.

When the user wants to stop watching a television program 19 received through the Internet network 10, or if the program has ended, upon receiving a command issued by the user the apparatus 1 will return into the typical program viewing mode of a known television set.

It is clear that, thanks to this artifice of creating a link between each television program 19 being broadcast and a corresponding URL 21 of the site of the television network (where it can be watched in streaming mode), selecting a current or missed (because already broadcast) program 19 becomes much easier than in the prior art.

Moreover, the URL's 21 may also refer to Internet pages not belonging to the site of the television network 15 broadcasting that specific television program 19. In fact, the EPG data relating to the URL's 21 may concern links to external servers used for storing the contents of the television networks 15.

With reference to Fig. 2b, related to an additional embodiment, if the EPG data contain a plurality of URL's 21, then the EPG 17 will open a superimposed screen 18 (commonly referred to as "pop-up" screen) listing the URL's 21. This pop-up screen 18 opens next to the cell of the program 19 and comprises a visual pointer that points to said cell. The pop-up screen 18 opens in response to a user input through a key of the remote control device 13 or after a certain period of time (e.g. 2 seconds) has elapsed since a user has positioned the cursor on the cell of a television program 19 in the advanced EPG 17.

From this pop-up screen 18, by means of a cursor controlled through the remote control device 13, the user of the apparatus 1 can choose the URL 21 from which to obtain the desired program in streaming mode, and possibly change it in order to obtain better video quality.

It is clear that in the solution example described so far it is necessary that the television networks broadcast via air or cable, along with the irradiated signal, also an advanced EPG like the one shown in Figures 2a and 2b. This involves no big changes in a prior-art EPG structure, but allows a user to gain access to the Internet network in a simpler and more flexible way compared to the prior art.

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In a second embodiment of the invention, the EPG data transmitted by the plurality of television networks 15 do not contain the URL's 21 of the television programs 19, but only television network names, channel numbers, program names, program times, synopses, and the like. As aforesaid, such EPG data are stored into the memory-type processing circuit 8 by the central processor 5 for a preset period of time, e.g. a week.

A user can therefore navigate within the EPG, with the help of a visual indication, in particular a cursor controlled through the remote control device 13 (in order to highlight a program cell 19), so as to select a desired television program 19 and possibly launch a browser through an input (e.g. a dedicated key) from the remote control device 13 for the purpose of searching the Internet network 10 for the selected television program 19. In particular, when the user wants to launch the browser, he/she presses a key on the remote control device 13 and, upon such action, the central processor 5 reads the name of the program 19 contained in the program cell highlighted by the cursor in the EPG 17. As a result, the central processor 5 opens the browser, requesting an Internet page of a search engine, and places the name of the program 19, the date and the address of the Internet site of the network to be pointed to (e.g. if the program is broadcast by the ZDF television network, then the site will be: <http://www.zdf.de/ZDFmediathek#>, or: <http://www.ardmediathek.de> if the program is broadcast by ARD) into the search field on that page. This behavior allows a user to make immediate searches through the Internet network 10 for the television program 19. The search may be made by filtering the results in the search engines, e.g. by adding the limitation of selecting "Video-only" contents to the above-mentioned parameters.

Therefore, a user searches for an Internet address 21, in particular a URL 21, which allows him/her to view that specific television program 19 in streaming mode.

Once the user has found the URL 21, corresponding to streaming audio/video of the desired program 19, he/she has the possibility of associating that URL 21 with the name of the searched television program 19 contained in the stored EPG data. This association is made by the central processor 5, which stores the URL 21 into the memory-type processing circuit 8 to create a link between the URL 21 and the name of the program 19 in the stored EPG data, thus originating an advanced EPG 17.

With reference to Fig. 3, there is shown one example of EPG data stored in the memory-type processing circuit 8. According to a possible variant concerning the search for the Internet addresses 21, the search is not carried out manually by the user, but automatically by the apparatus 1. In this mode, while a user is not viewing the EPG 17, in particular while watching a television program or when the apparatus 1 is in stand-by, the central processor 5 reads from the memory-type processing circuit 8 the names of the programs 19 previously stored when tuning the channels and receiving the EPG data (including the stored data relating to the last seven programming days). For each program name 19 present in the memory-type processing circuit 8, excluding those already associated with a previously saved URL 21, the central processor 5 automatically searches (this step is referred to as “background search”) for all programs not yet linked to a URL 21, for the corresponding television program 19 transmitted in streaming mode on the Internet network 10. This search is made by using the browser and by setting, for example, the same parameters as those already mentioned for the previous case relating to a manual search, including the search filter specifying “Video-only” URL’s 21. The central processor 5 thus reads the first Internet address 21 obtained from the search results, in particular the URL 21, and stores said URL 21 into the memory-type processing circuit 8 to create a link to the name of the corresponding television program 19 in the stored EPG data, thus originating an advanced EPG 17.

In all cases, it must be noted that it is advantageous to store into the memory-type processing circuit 8 also the name of the network 23 broadcasting the television program 19 and the date. In fact, if the search for the URL 21 is made by using the name of the program 19, the name of the corresponding network 23 and the date, the browser search results will be more accurate; in particular, they will be more specifically related to the Internet site of the television network 15 that provides that specific program 19.

The search through the Internet sites then goes on, one by one, until the EPG received via television broadcast is changed into an advanced EPG 17 that contains, for each program 19, a link to a URL 21 associating the same program 19 available through the Internet network 10.

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At this point, the advanced EPG 17 allows to display and use the URL's 21 associated with the television programs 19 (see Fig. 2); most importantly, a user can select a program 19 and open the corresponding URL 21 directly from the advanced EPG 17, in order to watch that program 19 in streaming mode through the Internet network 10, even without seeing the URL address 21 on the screen 7, because a link will have already been created in the memory-type processing circuit 8 between the program 19 available via television broadcast and the same program available through the Internet network 10.

It must be pointed out that the method according to the invention can be implemented through a computer product which can be loaded into a memory of the apparatus 1 and which comprises portions of software code adapted to implement the method by using existing hardware.

A first advantage of the method, apparatus and system according to the present invention is that a user is given the possibility of watching television programs through the Internet network in a "user-friendly" manner.

A second advantage of the method, apparatus and system according to the invention is that a user can easily switch the reception of a television program from the air or cable channel to the Internet channel.

A third advantage of the method, apparatus and system according to the present invention is that a user can watch a television program on the Internet network by directly starting from the EPG received by the apparatus via (air or cable) television broadcast, thus selecting the desired program in a way wholly similar to known EPG's, which only allow selecting programs received via television broadcast.

Another advantage of the method, apparatus and system according to the present invention is that a user is allowed to easily and quickly search for a television program through the Internet network.

A further advantage of the method, apparatus and system according to the present invention is that a user can still watch a favorite program even in the absence of the television signal broadcast via air or cable.

The method, apparatus and system for selecting and displaying, on or through a television signal receiver apparatus capable of connecting to Internet, television

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programs transmitted through an Internet network may be subject to many possible variations without departing from the novelty spirit of the inventive idea; it is also clear that in the practical implementation of the invention the illustrated details may have different shapes or be replaced with other technically equivalent elements.

5 For example, the method, apparatus and system for selecting and displaying, on or through a television signal receiver apparatus capable of connecting to Internet, television programs transmitted through an Internet network may provide for switching from the air or cable broadcast to the Internet transmission automatically or when one or more parameters characterizing the quality of the television signal (e.g.  
10 field intensity, signal-to-noise ratio, error rate) are below a preset threshold. This operation may be carried out by the central processor 5, which controls the automatic switching to the Internet network 10, by knowing the URL 21 from the advanced EPG 17 contained in the memory-type processing circuit 8. In this case, the user is not even required to manually control the television/Internet switching by pressing keys of the  
15 remote control device 13.

It can therefore be easily understood that the present invention is not limited to a method, an apparatus and a system for selecting and displaying television programs broadcast through Internet, but may be subject to many modifications, improvements or replacements of equivalent parts and elements without departing from the novelty  
20 spirit of the inventive idea, as clearly specified in the following claims.

**CLAIMS**

1. A method for selecting and displaying, on or through a television signal receiver apparatus (1) capable of connecting to Internet (10) and of pointing to URL's (21), television programs (19) transmitted through the Internet network (10), said method comprising the step of associating at least one URL (21), corresponding to streaming  
5 audio/video of a specific television program (19), with the same television program (19) contained in an EPG (17) received by said apparatus (1) via television broadcast, and wherein said association requires that said URL (21) be stored into a memory-type processing circuit (8) of the apparatus (1) to create a link between said specific television program (19) received through said Internet network (10) and the same  
10 specific television program (19) of said EPG (17) received by said apparatus (1) via television broadcast.
2. A method according to claim 1, characterized in that it comprises a step for allowing said specific television program (19) to be selected and displayed via television broadcast or through the Internet network (10).
- 15 3. A method according to claim 2, characterized in that said selection between television broadcast and Internet transmission is obtained by means of a command issued by a user of said apparatus (1) through a dedicated key of a control device (13).
4. A method according to claim 2, wherein said streaming audio/video of said television program (19) is automatically displayed when a parameter characterizing  
20 the quality of the television signal received via television broadcast is below a preset threshold.
5. A method according to claim 1, characterized in that it comprises a step of displaying, on a screen (7) associated with or included in said apparatus (1), a screen of said EPG (17) listing a plurality of television programs from which said specific  
25 television program (19) can be selected.
6. A method according to claim 5, characterized in that said screen of said EPG (17) only displays the contents of the programs received via television broadcast, without showing their links to said URL's (21), which are used by said apparatus (1) to select a specific program (19) for Internet reception.
- 30 7. A method according to claim 1, characterized in that said EPG (17) received via

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television broadcast is processed by storing into said memory-type processing circuit (8) not only the data relating to said EPG (17) received instant by instant via television broadcast, but also said EPG data (17) received for a certain period of time in the past.

8. A method according to claim 1, characterized in that said URL (21) is transmitted in a television signal, along with the EPG data, by a television network via television broadcast, and is received by an input (3) of said apparatus (1).

9. A method according to claim 1, wherein said storing of said URL (21) is carried out under the control of a central processor (5) of said apparatus (1).

10. A method according to one or more of the preceding claims 1 to 7, characterized in that said apparatus (1) comprises a browser, and wherein said URL (21) is searched for through the Internet network (10) upon a command issued by a user, by entering in a search engine the data of the desired program (19) which have been obtained from said EPG (17) received via television broadcast.

11. A method according to claim 10, wherein said URL (21) is stored into said memory-type processing circuit (8) upon a command issued by a user, in particular upon a command issued by means of said control device (13).

12. A method according to one or more of the preceding claims 1 to 7, characterized in that it comprises the following steps:

- said URL (21) is automatically searched for by entering in a search engine the data of a first program (19) which have been obtained from said EPG (17) received via television broadcast;

- this step is repeated for each program name (19) received via television broadcast and present in the memory-type processing circuit (8), excluding said program names (19) which have already been associated with a previously stored URL (21).

13. A television signal receiver apparatus (1) adapted to select and display, on a screen (7) internal or external to the apparatus (1), television programs (19) transmitted through the Internet network (10), comprising:

- at least one input (3) for receiving television signals;

- a tuning and demodulating unit (2) for tuning and demodulating said television signal;

- a video circuit (4) for video decoding of said television signal;

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- a switching circuit (6) for supplying to said screen (7) signals of television programs (19) received via television broadcast or through an Internet network (10);

- at least one network interface (9) for connecting to said Internet network (10) and pointing to URL's (21);

5 - at least one memory-type processing circuit (8) adapted to process and store EPG programming data, which are received along with said television signals irradiated via television broadcast;

- a central processor (5) adapted to control the operation of the above-mentioned elements;

10 characterized in that:

said apparatus (1) is adapted to associate at least one URL (21), corresponding to streaming audio/video of a specific television program (19), with the same specific television program (19) contained in an EPG (17) received by said apparatus (1) via television broadcast, and wherein said association requires that said URL (21) be  
15 stored into said memory-type processing circuit (8) of said apparatus (1) to create a link between said specific television program (19) received through said Internet network (10) and the same specific television program (19) of said EPG (17) received by said apparatus (1) via television broadcast.

14. An apparatus (1) according to claim 13, characterized in that it comprises control  
20 means (5,12,13) which control said switching circuit (6) in order to supply to said screen (7) signals of television programs (19) received via television broadcast or through said Internet network (10).

15. An apparatus (1) according to claim 13, characterized in that it comprises a circuit  
25 for checking one or more parameters characterizing the quality of said television signal received via television broadcast, so that said screen will be supplied, through said switching circuit (6), with streaming audio/video received through said Internet network (10) in the event that one or more of said parameters is below a preset threshold.

16. An apparatus (1) according to claim 13, characterized in that said EPG (17)  
30 received via television broadcast is processed by storing into said memory-type processing circuit (8) not only the data relating to said EPG (17) received instant by

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instant via television broadcast, but also said EPG data received for a certain period of time in the past.

17. An apparatus (1) according to claim 13, characterized in that said at least one URL (21) is stored into said memory-type processing circuit (8) by said central processor (5) of said apparatus (1).

18. An apparatus (1) according to one or more of the preceding claims 13 to 17, wherein said apparatus (1) further comprises a web decoder (14) adapted to decode said streaming audio/video of said specific television program (19) received through said Internet network (10) by means of said network interface (9).

19. An apparatus (1) according to one or more of the preceding claims 13 to 18, characterized in that said central processor (5) obtains said URL (21) relating to said specific television program (19) by extracting it from said EPG (17) received via television broadcast.

20. An apparatus (1) according to one or more of the preceding claims 13 to 18, wherein said apparatus (1) further comprises an Internet browser circuit adapted to allow a user to search the Internet network (10) for said specific television program (19) by entering in a search engine the data of said specific television program (19) received via television broadcast, so as to identify the URL (21) relating to the same specific television program (19).

21. An apparatus (1) according to the preceding claim, characterized in that the search for said URL (21) is carried out automatically under the control of said central processor (5) while using said apparatus (1), by searching the URL (21) corresponding to each specific television program (19) until all programs contained in said EPG (17) received via television broadcast have been associated with at least one URL (21) to be pointed to when one wants to watch said specific television program (19) through said Internet network (10).

22. A system (100) according to one or more of the preceding claims, for selecting and displaying, on or through a television signal receiver apparatus (1) capable of connecting to the Internet network (10) and of pointing to URL's (21), television programs (19) transmitted through Internet (10), characterized in that it is adapted to receive EPG data comprising at least one URL (21) relating to a specific television

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program (19), said system (100) comprising at least one television network (15) broadcasting EPG data.

23. A computer product which can be loaded into a memory (8) of said apparatus (1), comprising portions of software code adapted to implement the method according to
- 5 one or more of claims 1 to 12.

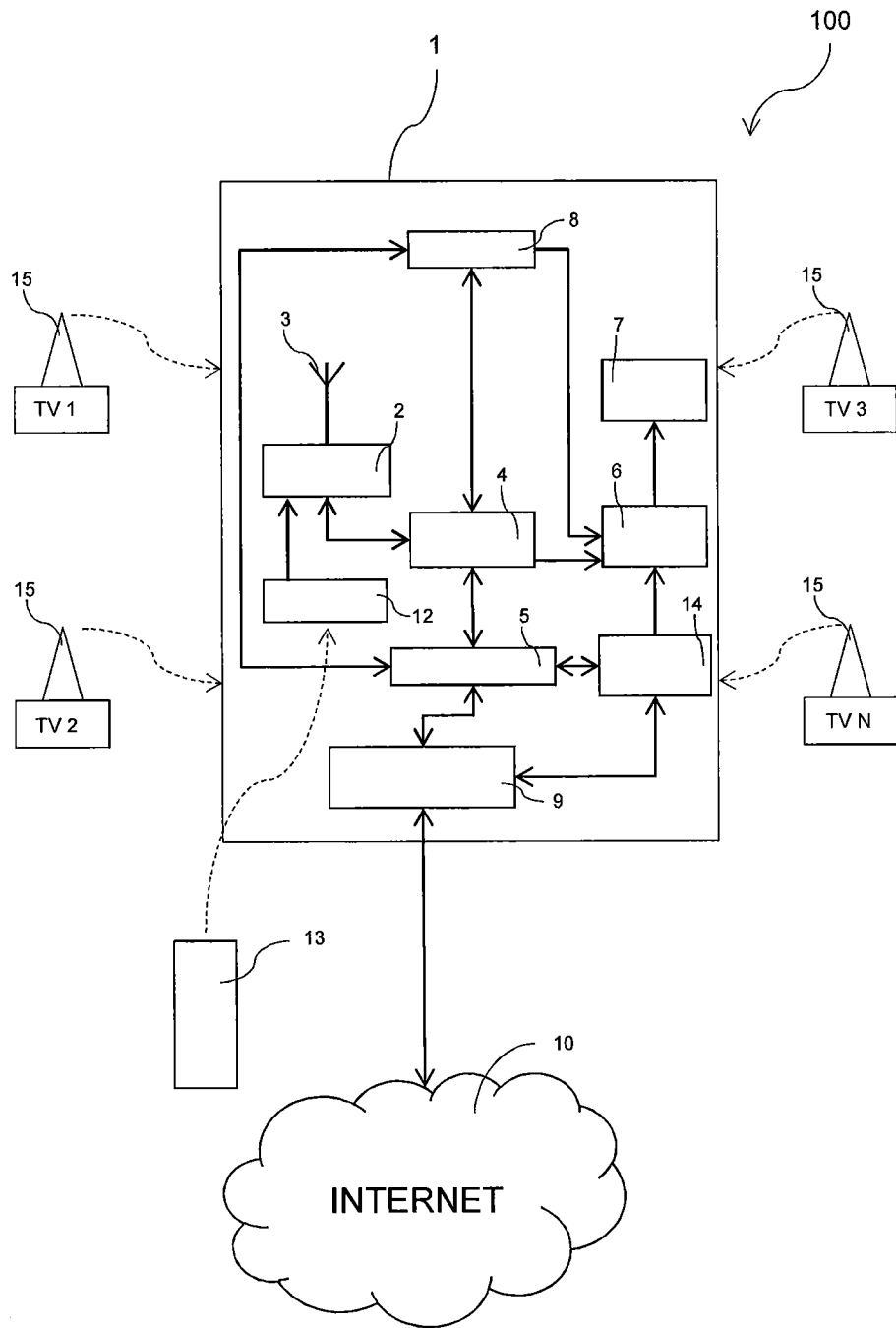


Fig. 1

17

EPG

	19 09.00	21 09.30	10.00	10.30
Network #1	Progr. #1 <a href="http://www...">http://www...</a>	Progr. #2	Progr. #3	Progr. #4
Network #2	Progr. #5	Progr. #6	Progr. #7	Progr. #8
Network #3	Progr. #9	Progr. #10	Progr. #11	Progr. #12
Network #4	Progr. #13	Progr. #14	Progr. #15	Progr. #16

December 18 Tuesday, 2012 – 10.05

Fig. 2a

17

EPG

	09.00	09.30	10.00	10.30
Network #1	Progr. #1	URL of Progr. #1 1. <a href="http://www.....">http://www.....</a> 2. <a href="http://www.....">http://www.....</a> ...	Progr. #3	Progr. #4
Network #2	Progr. #5	N. <a href="http://www.....">http://www.....</a>	Progr. #7	Progr. #8
Network #3	Progr. #9	Progr. #10	Progr. #11	Progr. #12
Network #4	Progr. #13	Progr. #14	Progr. #15	Progr. #16

18

December 18 Tuesday, 2012 – 10.05

19

21

Fig. 2b

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23 Network	19 Program	Start Time	End Time	21 URL
ZDF	Morgen Magazine	13.30	14.00	<a href="http://www.zdf.de/ZDFmediathek#/beitrag/einzeldokument/1802458/Morgenmagazin-vom-27-Dezember-2012">http://www.zdf.de/ZDFmediathek#/beitrag/einzeldokument/1802458/Morgenmagazin-vom-27-Dezember-2012</a>
ZDF	Superbauten 2	23.10	01.00	<a href="http://www.zdf.de/ZDFmediathek#/beitrag/video/1788702/Superbauten-2:-S%C3%A4ulen-f%C3%BCr-die-Ewigkeit">http://www.zdf.de/ZDFmediathek#/beitrag/video/1788702/Superbauten-2:-S%C3%A4ulen-f%C3%BCr-die-Ewigkeit</a>
ARD	Stimmen zum Spiel Hannover - Leverkusen	12.00	12.10	<a href="http://www.ardmediathek.de/wdrfernsehen/bundesliga-am-sonntag/stimmen-zum-spiel-hannover-leverkusen-3-2?documentId=12742208">http://www.ardmediathek.de/wdrfernsehen/bundesliga-am-sonntag/stimmen-zum-spiel-hannover-leverkusen-3-2?documentId=12742208</a>

Fig. 3

INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2013/053718

A. CLASSIFICATION OF SUBJECT MATTER  
INV. H04H20/20 H04H20/93  
ADD.  
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)  
H04H  
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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	EP 2 015 482 A2 (LG ELECTRONICS INC [KR]) 14 January 2009 (2009-01-14)	1-3, 5-10, 12-14, 16-23
Y	paragraphs [0015], [0019], [0021] - [0023], [0034] - [0038], [0043] - [0044], [0055], [0069] figure 1	4,11,15
X	EP 2 114 070 A2 (SONY CORP [JP]) 4 November 2009 (2009-11-04)	1,2,5, 7-9,13, 14,16, 17,19, 22,23
Y	paragraphs [0025], [0028], [0043] - [0047], [0049], [0052] - [0053] figures 1-5 ----- -/--	4,11,15

Further documents are listed in the continuation of Box C.

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  19 March 2013	Date of mailing of the international search report  28/03/2013
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Iovescu, Vladimir

## INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2013/053718

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y	----- EP 1 841 104 A1 (BRITISH TELECOMM [GB]) 3 October 2007 (2007-10-03)	11
A	paragraph [0033] figure 7 -----	10,20

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Information on patent family members

International application No

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