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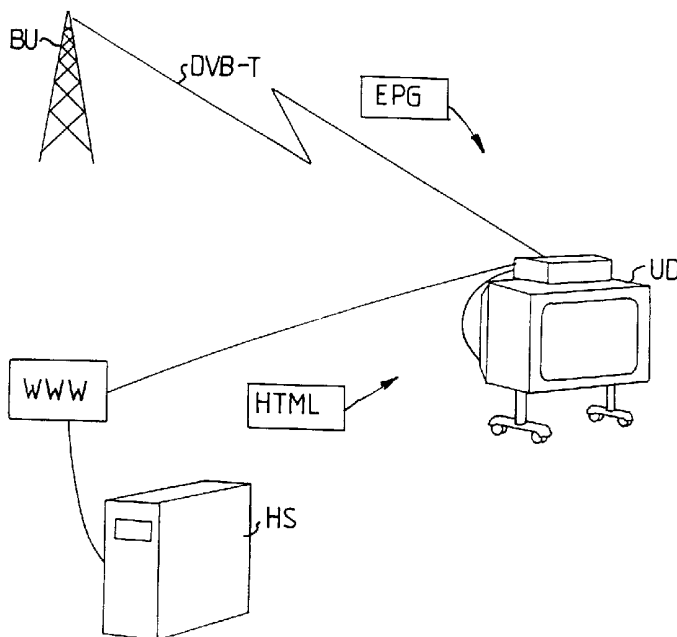
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A METHOD AND SYSTEM FOR TV PROGRAM INFORMATION



(57) Abstract: The invention provides a combined TV reception and computer system, comprising at least one user device (UD), adapted a broadcasting signal (DVB-T) transmitted in a digital television broadcasting network, the broadcasting signal (DVB-T) comprising an electronic program guide (EPG), containing TV program information. The invention provides a method for providing information about TV-programs comprising the steps of retrieving search terms from script tags of, or from text in a homepage (HTML), retrieved through a computer network, e.g. the internet or an intranet, searching the electronic program guide (EPG), using the retrieved search terms, and generating and displaying a result set of search results of TV programs.



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A METHOD AND SYSTEM FOR TV PROGRAM INFORMATION

FIELD OF THE INVENTION

The present invention refers to a method for providing information about
5 TV-programs, and a combined TV reception and computer system, according to the
preamble of claim 1 and 3, respectively.

ART BACKGROUND

A user having a TV, or a personal computer, adapted to receive digital video broadcasting
10 signals for the display of TV-programs, can in some cases access the internet via a web
browser using the TV or PC, and have both TV and internet applications displayed on the
screen at the same time.

EP 0 848 554 A3 discloses a method, according to which a window overlaying a TV-
15 program display provides for a user to demand and receive additional information from
internet sources on the TV-program showed. However, the method according to EP 0 848
554 A3 does not give the user any support in selecting TV-programs.

US 6 005 565 A discloses a method in which a TV-program, an internet on-line window,
20 and an electronic program guide are displayed, and a user establishes search terms for an
internet search, the result of which is integrated with the program guide.

OBJECT OF THE INVENTION

It is an object of the present invention to provide additional support to a user in selecting
25 TV-programs.

SUMMARY OF THE INVENTION

The object of the invention is met by a method for providing information about TV-
programs, and a combined TV reception and computer system, having to the
30 characterizing features of claim 1 and 3, respectively.

Displaying search results of TV programs, the results being obtained from searching an electronic program guide, using search terms retrieved from script tags of, or text in, a homepage, gives a user information on TV-programs treating similar subjects as an internet homepage, visited by the user, without the user having to participate in finding
5 relevant search terms for the TV-program search.

Preferably, the user device is provided with a search term retrieval software, and the search terms are retrieved using this search term retrieval software. This provides for the electronic program guide search to be carried out using search terms, retrieved from a
10 wide variety of information types accessible through the internet.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described in greater detail, with the aid of the accompanying drawings, in which

- 15 - fig. 1 illustrates schematically a combined TV broadcasting and computer system, in which the invention is used,
- fig. 2 is a flow diagram showing steps in a method according to one embodiment of the invention, and
- fig. 3 shows a schematic example of a result, displayed to a user, of one embodiment
20 of the present invention.

DETAILED DESCRIPTION

Fig. 1 is an schematic illustration of a system comprising a user device UD for reception of digital video broadcasting signals DVB-T transmitted from a broadcasting unit BU in a
25 digital television broadcasting network.

The user device UD comprises a traditional type of TV-set and a so called digital TV box, connected to the TV-set. The TV box is adapted to convert the digital TV signals to analogue signals for the TV-set, as is known in the art. The digital TV box has
30 computational capacity and is provided with a telephone modem and a browser software to access the internet and display web sites on the TV-set. It can be controlled by a user

via a remote control unit. As is known in the art, the user device UD could also be a personal computer provided with suitable hardware to display digitally broadcasted TV programs. The user device UD could also be a combination of a TV box, a personal computer and an analogue TV-set, or a Personal Digital Assistant, adapted to receive
5 digital TV signals through a GPRS (General Packet Radio Service) system or a UMTS (Universal Mobile Telecommunications System) network. If it is adapted for mobile communications it could also be arranged for use in a vehicle environment.

10 A user can access an electronic program guide EPG which is provided via the digital video broadcasting signals DVB-T and contains information about available TV channels and TV programs schedules, as well as other information services.

Referring to fig. 2 and 3, a method according to one embodiment of the invention will now be described. The user accesses a homepage HTML, stored in a homepage server
15 HS, via the internet. As can be seen in fig. 3, the user device can display the homepage HTML, and a TV-program, simultaneously, in separate windows on the same screen.

The user device is provided with a software for retrieving subject words in the homepage HTML. The subject words could be contained in the text content of the homepage
20 HTML, and /or the script tags of the homepage HTML. A natural language recognition algorithm of the type described in US 5 598 557 A could be used to find the subject words.

Subsequently, the user device UD utilizes the subject words extracted from the homepage
25 HTML to search the electronic program guide for TV programs having subjects being the same or similar to the one treated in the homepage HTML. In the electronic program guide subject words could be stored in connection to information about each TV program, and/or the TV programs could be arranged into categories.

30 A search result SR is created, and displayed to the user on the user device. As can be seen in fig. 3, the user device can display the search result SR in a separate window beside the

windows for the homepage HTML, and the TV-program. The TV-program displayed on the screen does not necessarily have to treat the same subject as homepage HTML and the search result SR. However, the search result SR will contain information about TV programs treating the same subject or similar subjects as the homepage HTML.

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The search result SR containing the relevant TV programs could be displayed in a list in which the sequence could be chronological with regards to broadcasting times, or arranged according to the relevance of the TV programs, as established during the search. If the sequence in the list is chronological, an indication at each entry in the list could be provided, showing the relevance of the entry in relation to the homepage. The indication could be in the form of a number in a predetermined interval, whereby one end of the interval corresponds to a high relevance, and vice versa. The indication could also take the form of a colored area, at which the color itself, e.g., green, yellow, etc., denotes the relevance of the entry, i.e. the TV-program.

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The steps of retrieving search terms from script tags of, or from text in, the homepage HTML, searching the electronic program guide EPG, and generating and displaying a result set of search results of TV programs, can be carried out by at least one computer program. This computer program can be loaded into the user device from a computer program code carrying device, such as a compact disc. The computer program code could also be transmitted via the digital video broadcasting signal, or through the computer network, e.g. the internet or an intranet.

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CLAIMS

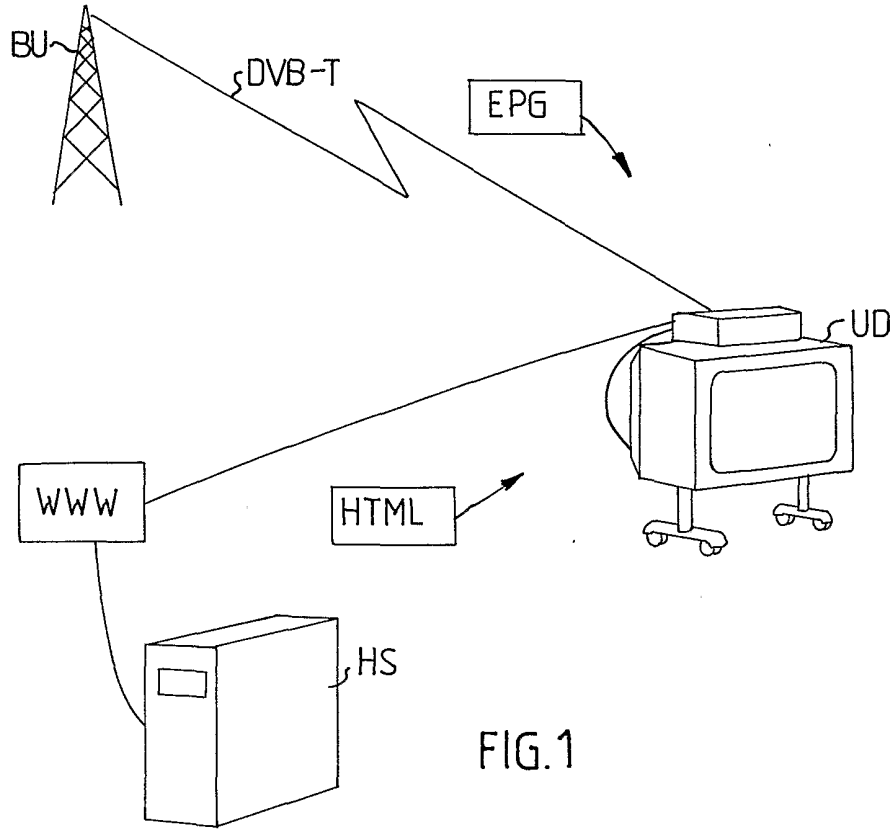
1. In a combined TV reception and computer system comprising at least one user device (UD), adapted to receive a digital video broadcasting signal (DVB-T) transmitted from a broadcasting unit (BU) in a digital television broadcasting network, the digital video broadcasting signal (DVB-T) comprising an electronic program guide (EPG), containing TV program information, the user device (UD) being provided with a browser software (BS), and being connectable to at least one homepage server (HS), e.g. a web server, via a computer network, e.g. the internet or an intranet, a method for providing information about TV-programs, comprising the steps of
- sending a request to the homepage server (HS) to access a homepage (HTML), stored on the homepage server (HS) and retrievable through the computer network, using the browser software (BS), and
 - receiving the authorising language code of the homepage (HTML), **characterized by** the steps of
 - retrieving search terms from script tags of the homepage (HTML) or from text in the homepage (HTML),
 - searching the electronic program guide (EPG), using the retrieved search terms, and
 - generating and displaying a result set of search results of TV programs.
2. A method according to claim 1, wherein the user device (UD) is provided with a search term retrieval software, and the step of retrieving search terms comprises retrieving search terms using the search term retrieval software.
3. A combined TV reception and computer system comprising at least one user device (UD), adapted to receive a digital video broadcasting signal (DVB-T) transmitted from a broadcasting unit (BU) in a digital television broadcasting network, the digital video broadcasting signal (DVB-T) comprising an electronic program guide (EPG), containing TV program information, the user device (UD) being provided with a browser software (BS), and being connectable to at least one homepage server (HS), e.g. a web server, via a computer network, e.g. the internet or an intranet, and being adapted to send a request

to the homepage server (HS) to access a homepage (HTML), stored on the homepage server (HS), and retrievable through the computer network and receive the authorising language code of the homepage (HTML), **characterized by**

- means to retrieve search terms from script tags of the homepage (HTML) or from text
5 in the homepage (HTML),
 - means to search the electronic program guide (EPG), using the retrieved search terms,
and
 - means to generate and display a result set of search results of TV programs.
- 10 4. A system according to claim 3, whereby the means to retrieve search terms from script tags of the homepage (HTML) or from text in the homepage (HTML) is a search term retrieval software.
- 15 5. A computer program comprising code means adapted to perform, when said program is run on a data-processing system,
- the step of retrieving search terms from script tags of, or from text in, a homepage (HTML), stored on a homepage server (HS), e.g. a web server, and retrieved through a computer network, e.g. the internet or an intranet,
 - the step of searching an electronic program guide (EPG), containing TV program
20 information, using the retrieved search terms, the electronic program guide (EPG) being included in a digital video broadcasting signal (DVB-T), transmitted from a broadcasting unit (BU) in a digital television broadcasting network, and
 - the step of generating and displaying a result set of search results of TV programs.
- 25 6. A computer data signal embodied in a carrier wave comprising computer program code means adapted to perform, when said program is run on a data-processing system,
- the step of retrieving search terms from script tags of, or from text in, a homepage (HTML), stored on a homepage server (HS), e.g. a web server, and retrieved through a computer network, e.g. the internet or an intranet,
 - the step of searching an electronic program guide (EPG), containing TV program
30 information, using the retrieved search terms, the electronic program guide (EPG)

- being included in a digital video broadcasting signal (DVB-T), transmitted from a broadcasting unit (BU) in a digital television broadcasting network, and
- the step of generating and displaying a result set of search results of TV programs.

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2/2

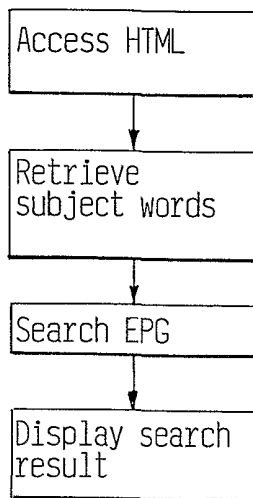



FIG.2

<p>TV₃</p> 	<p>SR₃</p> <p>March 4, 8.30 PM, Ch.9 A life by the piano- Eng. docum. on the life of Beethoven.</p> <p>March 16, 3.00 PM, Ch.21 Ludwig, where are you?—American movie about.....</p> <p>March 20, 9.00 PM, Ch. 17 Guess the composer- Game show.....</p>
<p>WELCOME TO THE HOMEPAGE OF THE BEETHOVEN APPRECIATION ASSOCIATION</p> <p>Register _____</p> <p>Links _____</p> <p>Contact Us _____</p> <p>_____</p> <p>_____</p> <p>_____</p>	

HTML₃

FIG.3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 01/02887

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04N 5/00, H04N 5/445, H04N 7/173

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: 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)

WPI DATA, EPO-INTERNAL, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6002394 A (SCHEIN,S.M. ET AL), 14 December 1999 (14.12.99), column 1, line 19 - line 26; column 6, line 13 - line 21; column 7, line 16 - line 23, column 15, line 41 - line 42 --	1-6
X	US 6005565 A (LEGALL,L.C. ET AL), 21 December 1999 (21.12.99), column 2, line 60 - column 3, line 27 -- -----	1-6

 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

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/SE 01/02887

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6002394 A	14/12/99	US 6263501 B	17/07/01
		AU 7387196 A	28/04/97
		BR 9611064 A	13/07/99
		CA 2232003 A	10/04/97
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		US 6075575 A	13/06/00
		US 6323911 B	27/11/01
		US 2002019981 A	14/02/02
		WO 9713368 A	10/04/97

US 6005565 A	21/12/99	AU 6579298 A	20/10/98
		WO 9843183 A	01/10/98
