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(54) **TELEVISION SCRIPTING LANGUAGE**

(75) Inventors: **Chi Fai Ho**, Palo Alto, CA (US); **Shin Cheung Simon Chiu**, Palo Alto, CA (US)

(73) Assignee: **TP Lab, Inc.**, Palo Alto, CA (US)

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G06F 13/00 (2006.01)
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(52) **U.S. Cl.**
USPC **725/38**; 725/46

(58) **Field of Classification Search** 725/38, 725/46
See application file for complete search history.

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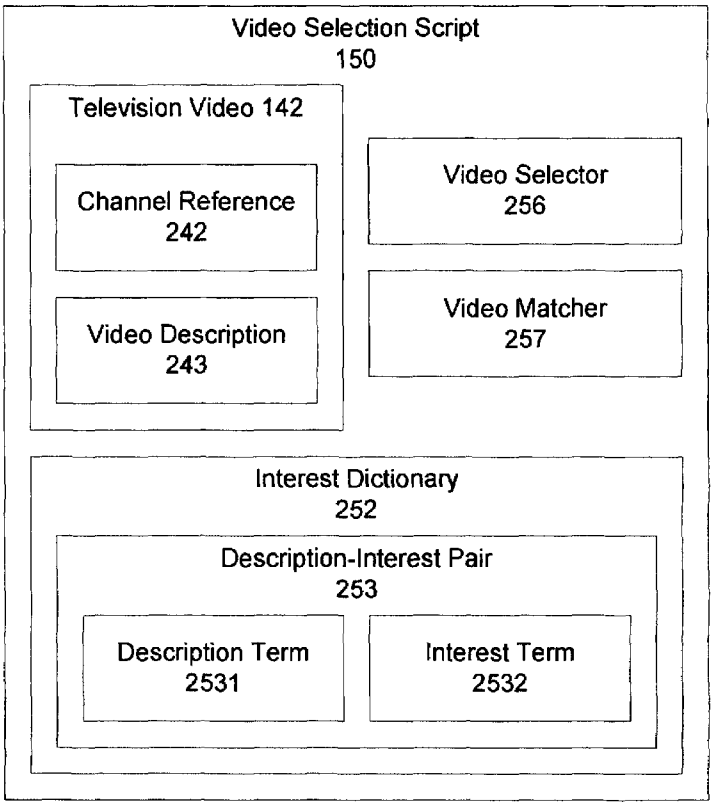
Primary Examiner — Robert Hance
(74) *Attorney, Agent, or Firm* — North Shore Patents, P.C.; Michele Liu Baillie

(57) **ABSTRACT**

Provided is a method and system for television channel selection, including a television controller operatively connected to an electronic memory and configured to process a video selection script. The television controller is also operatively connected to the television and to a television network comprising a plurality of channels. Also provided is a script authoring tool for authoring a video selection script in a Web-based scripting language by a viewer. The television controller is further configured to select a channel to display on the television based on the video selection script and to dynamically update the video selection script based on the occurrence of an event.

28 Claims, 5 Drawing Sheets



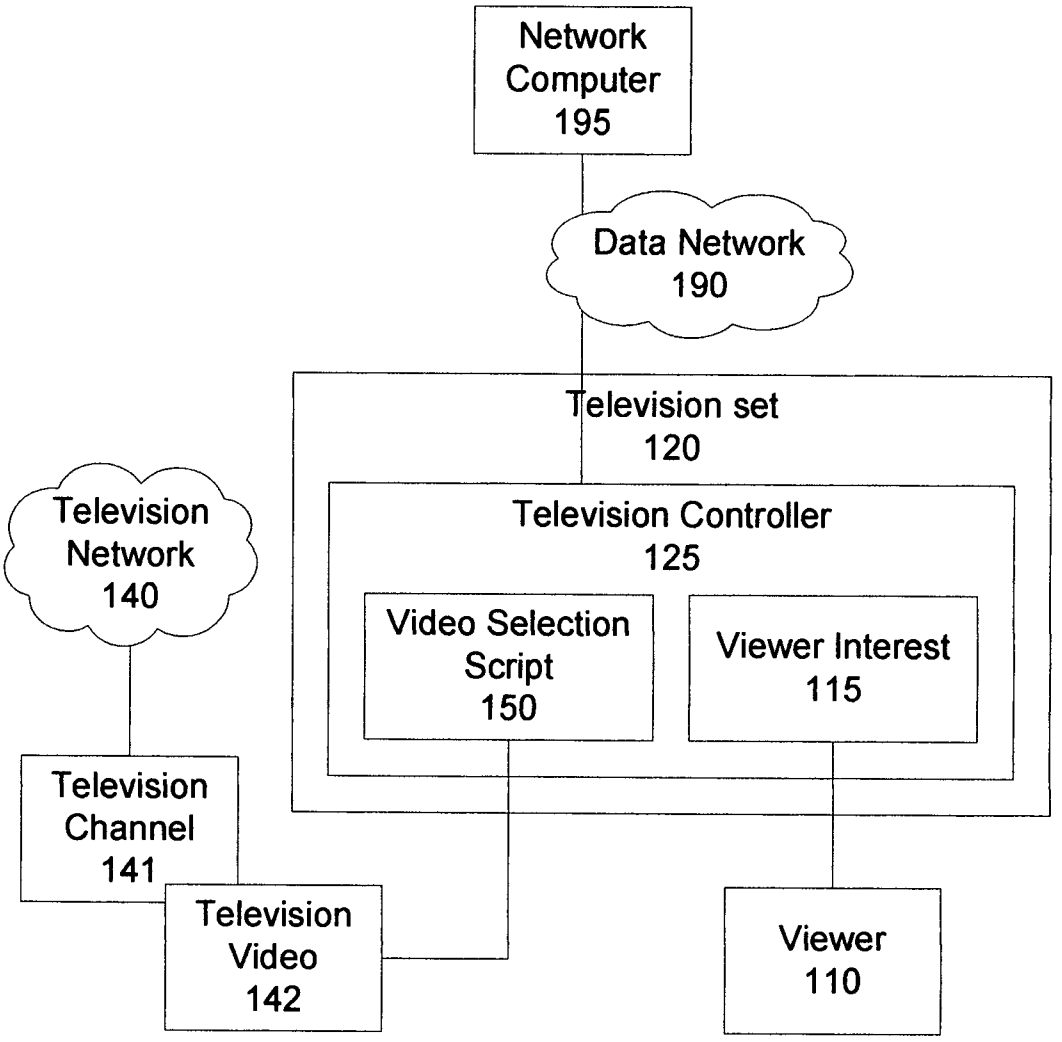

Network Computer 195
Data Network 190
Television set 120
Television Controller 125
Video Selection Script 150
Viewer Interest 115
Television Network 140
Television Channel 141
Television Video 142
Viewer 110

Figure 1

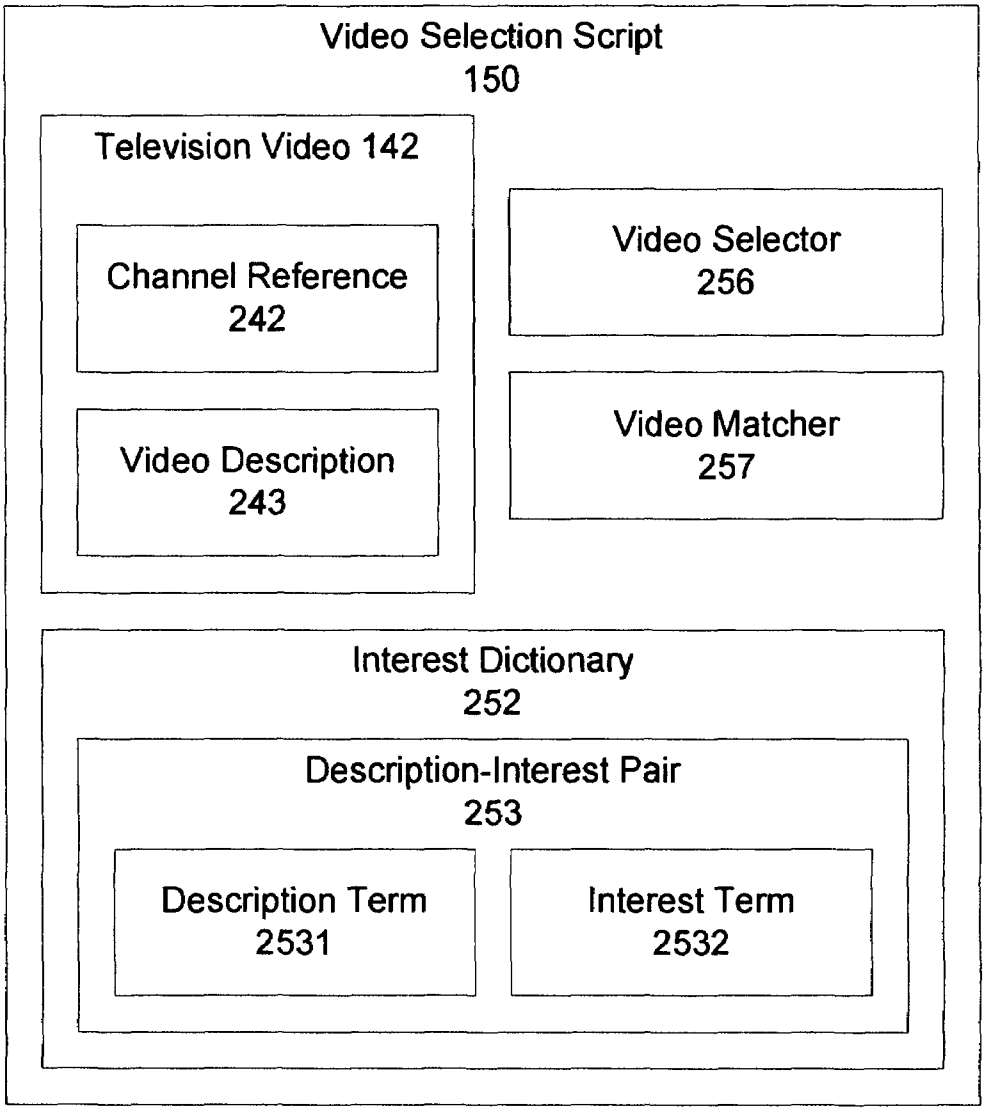

Video Selection Script
150
Television Video 142
Channel Reference
242
Video Description
243
Video Selector
256
Video Matcher
257
Interest Dictionary
252
Description-Interest Pair
253
Description Term
2531
Interest Term
2532

Figure 2

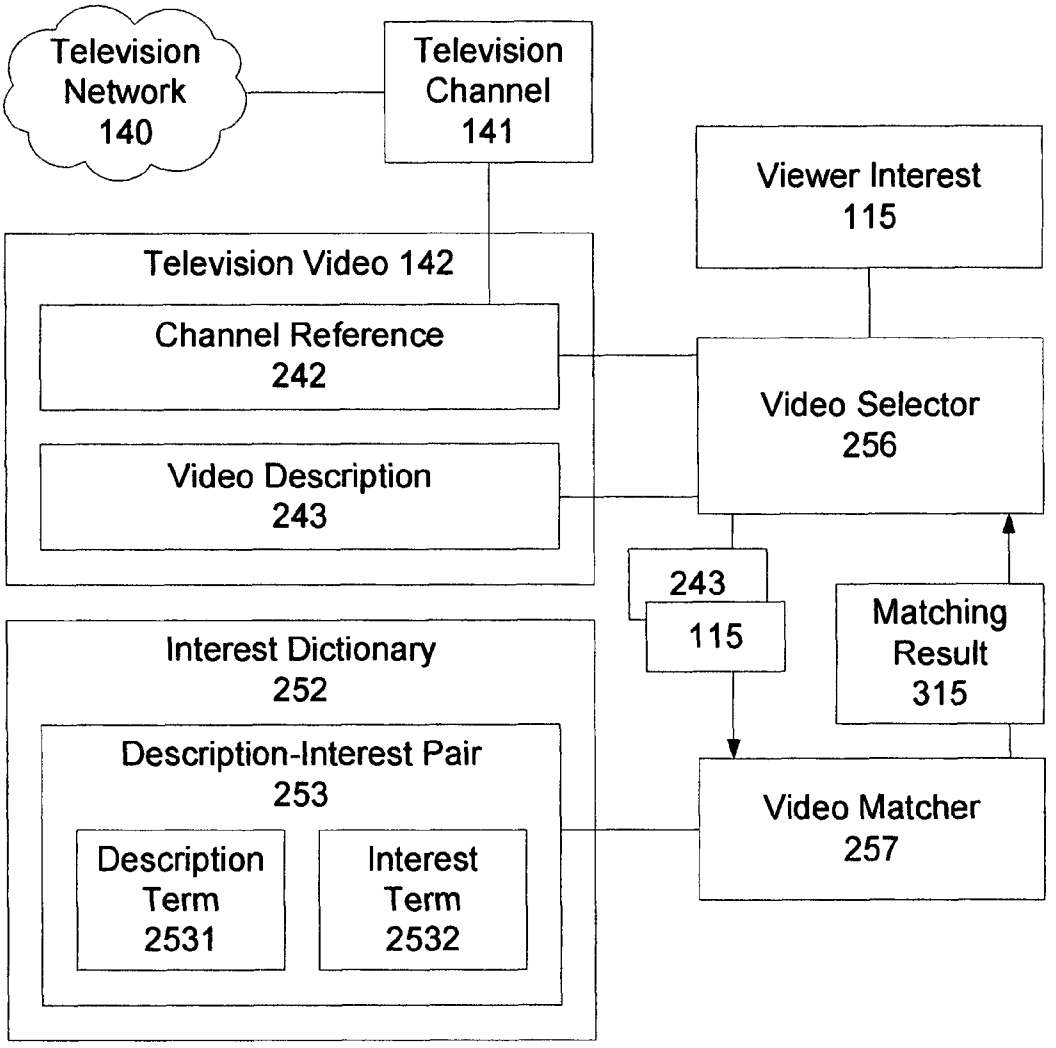

Television Network 140
Television Channel 141
Viewer Interest 115
Television Video 142
Channel Reference 242
Video Description 243
Video Selector 256
243
115
Matching Result 315
Interest Dictionary 252
Description-Interest Pair 253
Description Term 2531
Interest Term 2532
Video Matcher 257

Figure 3

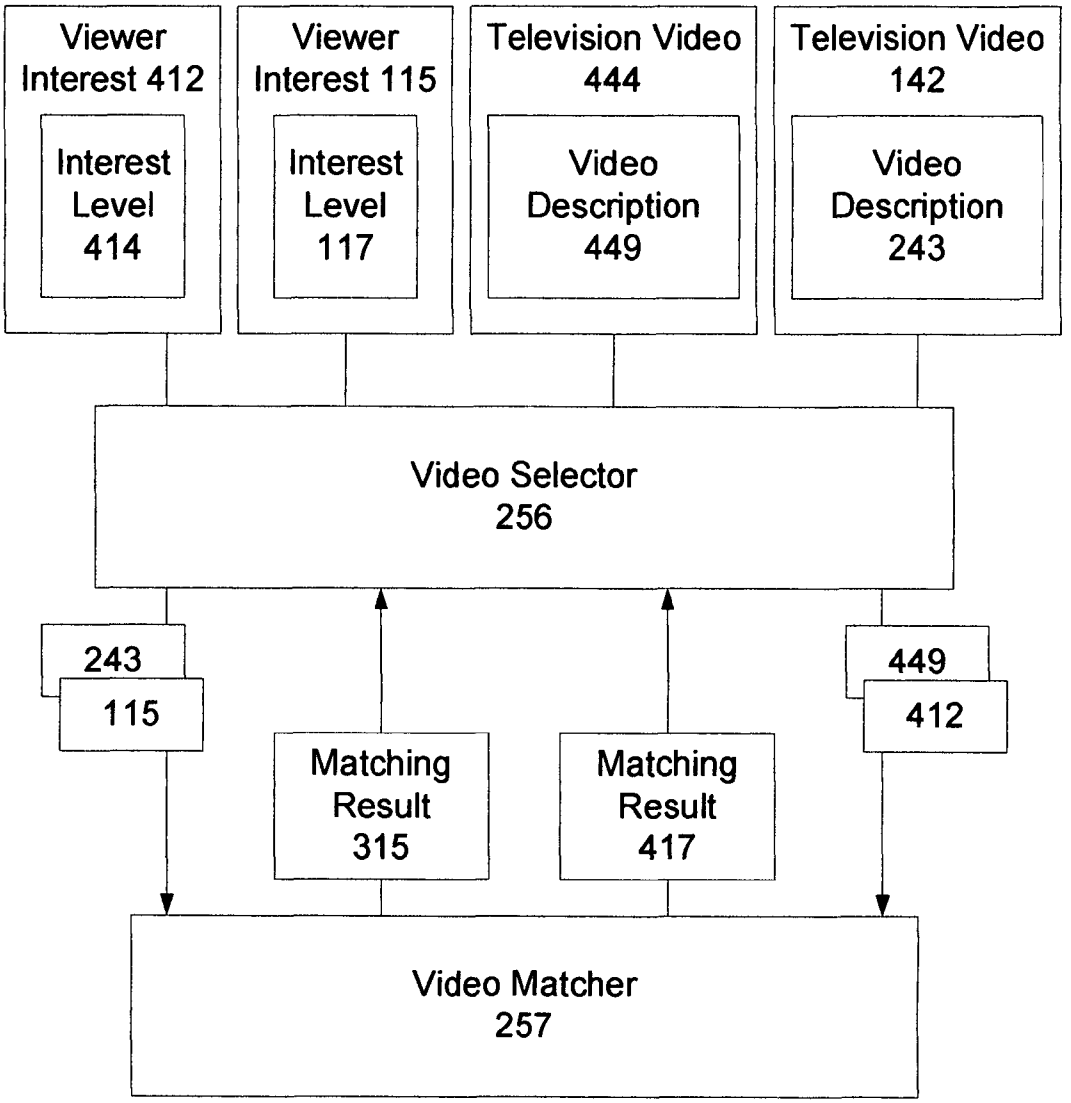

Viewer Interest 412
Interest Level 414
Viewer Interest 115
Interest Level 117
Television Video 444
Video Description 449
Television Video 142
Video Description 243
Video Selector 256
243
115
449
412
Matching Result 315
Matching Result 417
Video Matcher 257

Figure 4

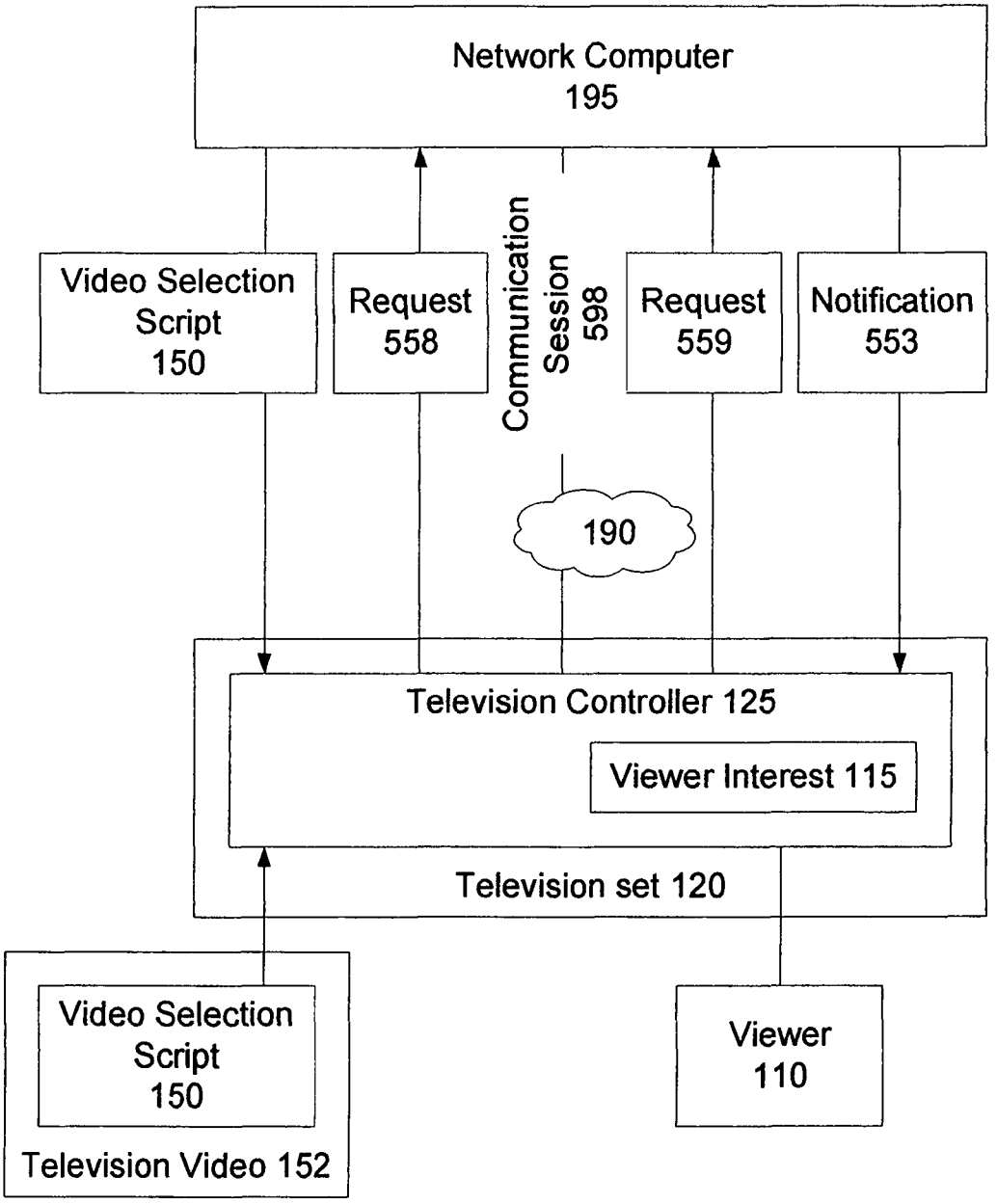

Network Computer
195
Video Selection
Script
150
Request
558
Communication
Session
598
Request
559
Notification
553
190
Television Controller 125
Viewer Interest 115
Television set 120
Video Selection
Script
150
Television Video 152
Viewer
110

Figure 5

TELEVISION SCRIPTING LANGUAGE

FIELD OF THE INVENTION

This invention generally relates to media, and more particularly, to a method and system to tailor displaying on a television set based on a video selection script.

BACKGROUND OF THE INVENTION

Prior to the advent of cable and satellite television, it was common for broadcast television to carry only a handful of analog television channels. With the wide deployment of cable and satellite television, it is now commonplace for a subscriber to have access to dozens of channels, even with only a basic service package. The present transition to digital television broadcast brings about additional excitement to consumers as hundreds of additional digital television channels become available. Some countries, such as Luxembourg and the Netherlands, have already completed their transition to digital broadcast television. Others are either in progress or are committed to the transition, including Brazil, China, Canada, Japan and the United States.

These available channels, when taken together with the hundreds or even thousands of additional television channels available via the Internet, provides the television consumer with a daunting task when trying to select a television channel for enjoyment. For example, it will take a consumer approximately 25 minutes to flip through 500 television channels even if each channel stays on for a mere 3 seconds. Even with the help of a program guide, or an electronic program guide ("EPG"), a consumer simply cannot easily keep track of what is on each of the numerous television channels, particularly when programming changes, overruns, delays or cancellations are involved.

This problem is even more profound for unscheduled television videos, such as are often made available dynamically via the Internet. In one example, an independent film maker releases a new movie about rising tennis star Ana Ivanovic. In another example, while vacationing in Japan, a tourist uploads a video clip of a magnitude 7.2 earthquake when it is happening. In yet another example, a freelance paparazzo reports breaking news with footage of celebrity Paris Hilton being stopped for a traffic violation. In another example, a high school orchestra director is offering the annual spring concert live online. In one more example, a proud parent just submits a funny video of her 2 year old child to an online competition.

In order to provide a personal viewing experience tailored to a consumer's interest, it is desirable to make sophisticated computing and dynamic decision making available on the consumer's side, namely at the television set. Furthermore, with the ever changing availability of numerous television videos, a computer scripting language that embodies the data and computing logic for selecting a television video is desirable in order to provide such a solution.

SUMMARY OF THE INVENTION

An aspect of the present invention provides a system and method for selecting a television channel for display on a television. The system and method includes authoring a video selection script in a scripting language, processing the video selection script by a television controller operatively connected to the television and also to a television network comprising a plurality of channels, selecting a channel to display on the television by the television controller based on the video selection script, and displaying the selected channel on the television.

In one aspect of the invention, the video selection script is based on a Web scripting language. For example, in an aspect of the invention, the Web scripting language is XML.

In another aspect of the invention, the method according to claim **1**, wherein the video selection script scripting language is based on any one of: Hypertext Markup Language ("HTML"), JavaScript, Java, and Visual Basic Scripting Edition.

In an aspect of the invention, the video selection script includes a viewer interest, which may optionally be selected by the viewer. In an aspect, the selection of the viewer interest by the viewer is by use of a television remote.

In various aspects of the invention the video selection script includes data or computing logic, or both, and may be dynamically updated. In an aspect of the invention, dynamic updating is caused by an event

Another aspect of the invention provides a television channel selection system that includes a television controller operatively connected to an electronic memory. The controller is configured to process the video selection script, and is operatively connected to the television and also to a television network which includes a plurality of channels. The controller is also connected to a script authoring tool for authoring a video selection script in a Web-based scripting language by a viewer, the video selection script including both data and computer logic. The television controller is further configured to select a channel to display on the television based on the video selection script, to display the selected channel on the television, and to dynamically update the video selection script based on the occurrence of an event.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a schematic diagram illustrating a television set in accordance with an embodiment of the invention;

FIG. **2** is a schematic diagram illustrating a video selection script in accordance with an embodiment of the invention;

FIG. **3** is a schematic diagram illustrating a process for selecting and displaying television video in accordance with an embodiment of the invention;

FIG. **4** is a schematic diagram illustrating a process for selecting television video based on viewer interest level in accordance with an embodiment of the invention; and

FIG. **5** is a schematic diagram illustrating a process for obtaining video selection script in accordance with an embodiment of the invention.

DETAILED DESCRIPTION

In the following description, for purposes of explanation, specific numbers, materials and configurations are set forth in order to provide a thorough understanding of the invention. It will be apparent, however, to one having ordinary skill in the art, that the invention may be practiced without these specific details. In some instances, well-known features may be omitted or simplified so as not to obscure the present invention. Furthermore, reference in the specification to "one embodiment" or "an embodiment" means that a particular feature, structure or characteristic described in connection with the embodiment is included in at least one embodiment of the invention. The appearances of the phrase "in an embodiment" in various places in the specification are not necessarily all referring to the same embodiment.

FIG. **1** illustrates an exemplary television set **120** displaying television video to enhance television viewing experience for a viewer. In an embodiment of the invention, television set **120** includes a television controller **125**, which displays television video **142** on television set **120** based on a video selection script **150**, thereby providing an enhanced television viewing experience for viewer **110**.

In an embodiment, television controller **125** includes a computer processor operatively connected to a computer memory, one or more input devices, a television set **120**, and to a network including a plurality of television videos. In operation, the video selection script **150** is loaded into the computer memory, and the computer processor is configured to read the video selection script **150**, selecting one of the television videos to display on the television set **120** based on the video selection script **150**.

Also in an embodiment, television controller **125** connects to a television network **140**. In one embodiment, the television network **140** is a broadcast television network, such as a cable television network, a satellite television network, or terrestrial television network, also known as an over-the-air (hereinafter, "OTA") television network. In another embodiment, television network **140** is a broadband television network, such as one based on Internet Protocol ("IP") television technologies. In another embodiment, television video **142** represents a segment of programming of a television channel 141 from television network **140**.

In various examples, television video **142** may be an episode of "CSI:Miami" shown on channel 54 (A&E) on Jul. 23, 2007 from 1:00 pm to 2:00 pm wherein television network **140** is Comcast cable network serving Palo Alto, Calif.; or a televised sports event "Bank of the West Tennis Classic at Stanford: Final" shown on channel 39 (ESPN2) on Jul. 29, 2007 from 2:00 pm to 5:00 pm; or a weekly episode of "Desperate Housewives" shown on channel 7 (ABC) every Sunday from 9:00 pm to 10:00 pm between Aug. 5, 2007 and Oct. 7, 2007; or "New Shanghai Bund Episode 23" shown on channel 26 (KTSF) on Jul. 25, 2007 from 8:00 pm to 9:00 pm wherein television network **140** is over-the-air (OTA) broadcast network serving the San Francisco Bay Area; or "Star Wars: The Phantom Menace" shown on channel 501 (HBO-Family) on Dec. 19, 2007 from 4:10 pm to 7:30 pm Pacific Standard Time (PST), wherein television network **140** is the DirectTV satellite television network; or any other television video content, without exception.

In an embodiment of the invention, television controller **125** processes video selection script **150**. Video selection script **150** includes data and computing logic for automatically selecting television video **142** and for displaying television video **142** on television set **120**.

In one embodiment of the invention, video selection script **150** is based on Web scripting language technologies, such that the video selection script **150** is encoded in a format similar to an Extensible Markup Language ("XML"). In another embodiment, video selection script **150** is encoded in another markup language, such as Hypertext Markup Language ("HTML"). Alternatively, the video selection script **150** may be encoded in JavaScript, Java, or Visual Basic Scripting Edition ("VBScript"), or hybrids thereof.

FIG. **2** illustrates an exemplary schematic layout for a video selection script **150**. The video selection script **150** selects television video **142** that matches the viewer interest **115**, based on the data and computing logic in the video selection script **150**, which then displays television video **142** on the television set **120**.

In an embodiment of the invention, the viewer **110** expresses viewer interest **115**. In a further embodiment, the viewer **110** expresses viewer interest **115** to the television controller **125**, for example, by using a remote control (not depicted). In one embodiment, the viewer **110** expresses viewer interest **115** during a user setup procedure for the television set **120**. Examples of viewer interest **115** may include but are not limited to "sports", "travel", "movie", "music", "history", "science", "lifestyle", "religion" or "politics". In one embodiment, the viewer interest **115** is a particular type of sports, such as "tennis", "football", "soccer", "horse racing", "lacrosse" or "National Collegiate Athletic Association (NCAA) women's basketball". In another embodiment, the viewer interest **115** is a particular type of movie, such as "drama", "comedy", "crime" or "horror" movies. In another, the viewer interest **115** is the name of a television series, such as "Law and Order", "Medium", "Saturday Night Live", "The Oprah Winfrey Show", or "The David Letterman Show". In another embodiment, the viewer interest **115** is the name of an actress, such as "Jessica Alba" or "Angelina Jolie". In various embodiments, the viewer interest **115** is the name of an actor or a director, or the name of an athlete, a model, a celebrity, or a sports commentator. In another embodiment, the viewer interest **115** is a language, ethnicity or culture, such as "Chinese", "Spanish" or "Vietnamese".

An example of a television video **142** related to a viewer interest **115** is the movie entitled "Star Wars: The Phantom Menace" with viewer interest **115** "movie". In an embodiment of the invention, the video selection script **150** selects television video **142** since the television video **142** matches the viewer interest **115**. Other examples of television video **142** related to viewer interest **115** include: a tennis live event "Breakfast at Wimbledon" related to "tennis" as viewer interest **115**, an episode of television series "Survivor" and related to viewer interest **115** of "reality show", the talk show "NewHours with Jim Lehrer" and viewer interest **115** of "politics", the movie "Fantastic Four" starring actress Jessica Alba and viewer interest **115** of "Jessica Alba", the movie "Days of Thunder" that includes car racing scenes and viewer interest **115** of "car racing", and the movie "Rush Hour" with Spanish subtitles and viewer interest **115** of "Spanish".

Exemplary processes for selecting and displaying television video **142** based on the viewer interest **115** are illustrated in FIGS. **3** and **4**.

In one embodiment, video selection script **150** includes language selecting television video **142** when viewer **110** first turns on television set **120**. In another embodiment, video selection script **150** includes language selecting television video **142** while viewer **110** is watching another television video. Video selection script **150** may also or alternatively include language selecting television video **142** when the other television video ends. In another embodiment, video selection script **150** includes language selecting television video **142** when viewer **110** presses a "my favorite television video" button on a remote control. In one embodiment, video selection script **150** includes language selecting television video **142** when viewer **110** changes from a television channel viewer **110** is watching.

In an embodiment of the invention, the viewer **110** can update the viewer interest **115**. In an embodiment a remote control may be used by the viewer **110** to update the viewer interest **115** to the television controller **125**. For example, the viewer **110** may change the viewer interest **115** from actor "Tom Cruise" to actor "Johnny Depp". The video selection script **150** would then includes language selecting television video **142** after the viewer **110** updates the viewer interest **115**.

Likewise, the viewer **110** can express an additional viewer interest **115**. In one embodiment, viewer **110** expresses additional viewer interest **115** to television controller **125** using a remote control. In similar fashion, the video selection script **150** would then include language selecting television video **142** after viewer **110** updates the viewer interest **115**.

In an embodiment of the invention, a television controller **125** obtains the video selection script **150** from a network computer **195** over a data network **190**. The data network **190** may include the Internet, and, optionally, an Internet Service Provider (ISP) network. In another embodiment, the data network **190** includes a private network operated by or for a business, such as a hotel, a multi-tenant complex, a gym, or a rehabilitation center. The data network **190** may include a home network. In an embodiment, the network computer **195** includes a data server such as a web server. In one embodiment, network computer **195** includes a video server. In one embodiment, network computer **195** includes an Internet portal. In one embodiment, network computer **195** includes a social networking website. In one embodiment, network computer **195** includes a home network storage.

In an embodiment of the invention, the data network **190** is included in a television network **140**. In one embodiment, the video selection script **150** is included in another television video; television controller **125** obtains video selection script **150** from the other television video.

In various embodiments of the invention, the television controller **125** obtains the video selection script **150** using Hypertext Transfer Protocol (HTTP), or using other technologies such as Web Services, remote method invocation (RMI), or Really Simple Syndication (RSS) technology. In alternative embodiments, television controller **125** obtains the video selection script **150** from a file, a video streaming object, or a multimedia container, such as the QuickTime (.mov) file, MPEG-2 transport stream container, MP4 file, RealMedia, or Flash Video.

The data or computing logic for automatically selecting television video **142** is subject to frequent and dynamic change. In one embodiment, the television controller **125** obtains the video selection script **150** after the data or computing logic changes. In another embodiment, the television controller **125** obtains the new data of video selection script **150**. In yet another, the television controller **125** obtains the new computing logic of the video selection script **150**.

The data or computing logic change may be due to any of several reasons, without limitation, including television programming overrun, delay, cancellation, or rescheduling. For example, a televised football game between the New England Patriots and the San Diego Charges is extended to overtime, causing a programming overrun. In another example, a television episode of "Law and Order" is delayed to make room for breaking news of mountain lion sighting in a local neighborhood. In yet another example, a live broadcast of Indianapolis 500 qualifying time trial is cancelled due to heavy rain.

The data or computing logic may also change due to an unscheduled television video becoming available. For example, an unscheduled television video may become available regarding an unfolding natural disaster, such as an earthquake, a hurricane, a forest fire, or a tsunami, without limitation. In another example, the unscheduled television video may be about emerging news of a war, a congressional session, an election, or a traffic accident. In yet other examples, the unscheduled television video may a movie just released by an independent film maker, or an Internet video clip whose popularity has just risen to top ten standing. In another example, the unscheduled television video is an Internet video just uploaded by an Internet user, or a video just announced by a media syndicate.

Changing the selection criteria for selecting television video **142** may also cause a computing logic change. In an embodiment of the invention, the selection criteria are changed to include video image matching. In another embodiment, the selection criteria are modified to reference a different interest dictionary, synonyms dictionary or foreign language dictionary. In other embodiments, the selection criteria are changed to reflect the popularity of celebrities or due to upcoming special or seasonal events such as Summer Olympics, Super Bowl, or World Cup Soccer, or to accommodate advertisement sponsorship.

FIG. **5** illustrates an exemplary process for obtaining video selection script is illustrated in FIG. **5**. In an embodiment, television controller **125** obtains video selection script **150** after viewer interest **115** is updated.

In one embodiment of the invention, the television set **120** connects to a television controller **125**. Video selection script **150** includes language causing the television controller **125** to display television video **142** on television set **120** over the connection. In various embodiments, the connection includes a High Definition Multi-media Interface (HDMI), an S-Video interface, a composite interface, a component interface such as analog YPbPr or digital YCbCr interface, a radio frequency (RF) interface over a coaxial cable, a network such as an Ethernet, a Wireless Local Area Network (WLAN), a Worldwide Interoperability for Microware Access (WiMax) network, or an Ultra-Wideband (UWB) network, or combinations of these or others known in the art of television, without limitation.

FIG. **2** illustrates an exemplary video selection script **150**. The video selection script **150** includes television video **142**, video selector **256** and video matcher **257** information.

Video selection scripts **150** are created by any of several means. These include the use of one or more authoring tools, as well as computer software and hardware for automated video selection script generation. In an embodiment of the invention a viewer may create and save the video selection script using an authoring tool such as a document editing program, such as Microsoft Word®. In other embodiments, the video selection script **150** may be generated using computer software running on the television controller **125** or generated on the network computer or network computer server, without limitation. In one embodiment, the television controller is used to edit the video selection script **150** after it is created by an automated process.

Television video **142** includes a channel reference **242** and a video description **243**. In one embodiment of the invention, channel reference **242** refers to television channel 141, wherein television video **142** represents a segment of programming of television channel 141. For example, channel reference **242** "tv://cable/channel/38" refers to television channel 141, wherein television channel 141 is cable television channel 38. In another example, channel reference **242** "tv://cable/channel/9.5" refers to cable television subchannel 9.5. In another example, channel reference **242** "tv://ATT-IPTV/channel/72" refers to ATT broadband television channel 72. In yet another example, channel reference **242** "tv://Verizon-tv/HBO-HD" refers to Verizon broadband television channel HBO-HD.

Video description **243** describes television video **142**. In one embodiment, video description **243** includes a genre of television video **142**, such as "movie", "sport", "situation comedy", "documentary", "news", "music", "science", "religion", or "lifestyle". In another embodiment, video description **243** includes "baseball", "basketball", "crime movie",

"book review" or "reality shows". In other embodiments, video description **243** includes a title of television video **142**, such as "The Oprah Winfrey Show", or "Breakfast at Wimbledon", or a name of an actress, an actor, a director, an anchor person, a professional athlete, a pastor, a host, or a celebrity, or language, ethnicity or culture affiliation, such as "Spanish", "Indian", or "Hong Kong". In another embodiment, video description **243** includes viewing options such as "close captioned", "Chinese subtitle", or "Vietnamese audio track" for television video **142**. In another embodiment, video description **243** includes plot, summary, review, recommendation or critique of television video **142**.

In an embodiment, the video selector **256** processes television video **142**, and instructs the video matcher **257** to match the video description **243** against viewer interest **115**, selecting television video **142** if the result from video matcher **257** is a match. After selecting television video **142**, video selector **256** displays television video **142** based on channel reference **242**. Details of the processing of video selector **256** are described in FIGS. **3** and **4**.

Also in an embodiment, video matcher **257** matches video description **243** against viewer interest **115** and responds to video selector **256** with the matching result. Details of the processing of video matcher **257** are described in FIGS. **3** and **4**.

In one embodiment, video selection script **150** includes an interest dictionary **252**. Interest dictionary **252** includes at least one description-interest pair **253**. Description-interest pair **253** typically includes a description term **2531** and an interest term **2532**. In one example, description term **2531** is "baseball" and interest term **2532** is "sport". Other examples of description-interest pair **253** are description term **2531** "movie" and interest term **2532** "movie"; description term **2531** "crime movie" and interest term **2532** "movie"; description term **2531** "Breakfast at Wimbledon" and interest term **2532** "sport"; description term **2531** "Breakfast at Wimbledon" and interest term **2532** "tennis"; description term **2531** "Fantastic Four" and interest term **2532** "Jessica Alba"; description term **2531** "Jackie Chan" and interest term **2532** "Martial Art"; and description term **2531** "NewsHour with Jim Lehrer" and interest term **2532** "politics".

The following is an example of part of video selection script **150** encoded in a format similar to XML wherein pseudo-code is used to describe the video selector and the video matcher:

```
<television-script>
  <television-video >
    <channel-reference>tv://cable/channel/38</channel-
reference>
    <video-description>
      <video-genre>sport</video-genre>
      <video-title>Breakfast at Wimbledon</video-title>
      <video-summary>
        World number 1 Roger Federer will battle
Rafael Nadal of Spain for his
        quest to match Bjorn Borg's 5 consecutive
Wimbledon men's signal title.
      </video-summary>
    </video-description>
  </television-video>
  <function>
    <function-name>videoSelector</function-name>
    <function-parameter></function-parameter>
    <function-body>
      {
        Set matching-result=videoMatcher(viewer
interest, video-description)
        If (matching-result equal TRUE)
        {
          Obtain video signals from television
channel referred to by channel-
            reference;
          Display video signals on television set;
        }
      }
    </function-body>
  </function>
  <function>
    <function-name>videoMatcher</function-name>
    <function-parameter>viewerInterest,
videoDescription
    </function-parameters>
    <function-body>
      {
        Retrieve description-interest-pair from
interest-dictionary;
        If ((description-interest-pair.description-
term) matches (videoDescription)
          and
          (description-interest-pair.interest-term)
matches (viewerInterest)) then
        return TRUE;
      }
    </function-body>
  </function>
  <interest-dictionary>
    <description-interest-pair>
      <description-term>Breakfast at
Wimbledon</description-term>
      <interest-term>tennis</interest-term>
    </description-interest-pair>
    <description-interest-pair>
      <description-term>crime movie</description-term>
      <interest-term>movie</interest-term>
    </description-interest-pair>
    <description-interest-pair>
      <description-term>Jackie Chan</description-term>
      <interest-term>Martial Art</interest-term>
    </description-interest-pair>
  </interest-dictionary>
</television-script>
```

FIG. **3** illustrates a process for selecting and displaying television video based on viewer interest.

Video selection script **150** includes at least one television video **142**. Video selector **256** retrieves television video **142** from video selection script **150**. Video selector **256** instructs video matcher **257** to match video description **243** against viewer interest **115**.

In one embodiment, video matcher **257** matches video description **243** against viewer interest **115** in conjunction with interest dictionary **252**. Interest dictionary **252** includes description-interest pair **253**. Description-interest pair **253** includes description term **2531** and interest term **2532**.

Video matcher **257** matches description term **2531** against video description **243** and interest term **2532** against viewer interest **115**. In one embodiment, the matching is based on key-word matching. In one embodiment, the matching is case sensitive. In one embodiment, the matching is based on exact word matching. In one embodiment, the matching is based on exact phrase matching. In one embodiment, the matching makes use of a synonyms dictionary. In one embodiment, interest dictionary **252** includes the synonyms dictionary. In one embodiment, video selection script **150** connects to the synonyms dictionary over a data network, such as data network **190**. In one embodiment, the matching makes use of a foreign language dictionary. Matching algorithms are well known to those of skill in the art.

In one example, video description **243** includes "Breakfast at Wimbledon" and viewer interest **115** is "tennis". In one

embodiment, description term **2531** is "Breakfast at Wimbledon" and interest term **2532** is "tennis". Video matcher **257** determines that video description **243** matches viewer interest **115** since description term **2531** "Breakfast at Wimbledon" matches video description **243** "Breakfast at Wimbledon" and interest term **2532** "tennis" matches viewer interest **115** "tennis". Video matcher **257** responds to video selector **256** with matching result **315** being positive.

In one example, video description **243** includes "Jackie Chan" and viewer interest **115** is "Kung Fu". In one embodiment, description term **2531** is "Jackie Chan" and interest term **2532** is "Martial Art". Video matcher **257** determines that video description **243** matches viewer interest **115** since description term **2531** "Jackie Chan" matches video description **243** "Jackie Chan" and interest term **2532** "Martial Art" is a synonym of viewer interest **115** "Kung Fu" according to the synonyms dictionary. Video matcher **257** responds to video selector **256** with matching result **315** being positive.

Based on positive matching result **315**, video selector **256** selects television video **142**. Video selector **256** obtains video signals from television channel 141 referred to by channel reference **242** and displays the video signals on television set **120**. In one example, channel reference **242** is "tv://cable/channel/38"; video selector **256** obtains video signals from cable channel 38. In one example, channel reference **242** is "tv://cable/channel/9.5"; video selector **256** obtains video signals from cable subchannel 9.5. In one example, channel reference **242** is "tv://ATT-IPTV/channel/72"; video selector **256** obtains video signals from ATT-IPTV network channel 72. In one embodiment, television network **140** is a broadcast television network and television controller **125** connects to television network **140** via a broadcast television tuner, such as an analog channel tuner, a National Television System Committee (NTSC) tuner, an Advanced Television Systems Committee (ATSC) tuner, or a satellite television tuner. Video selector **256** obtains video signals by instructing the broadcast television tuner to select television channel 141 based on channel reference **242**. In one embodiment, television network **140** is a broadband television network based on Internet Protocol technologies and television controller **125** connects to television network **140** via a broadband television tuner. Video selector **256** obtains television video **142** by instructing the broadband television tuner to select television channel 141 based on channel reference **242**, wherein the broadband television tuner maps channel reference **242** to a Universal Resource Locator (URL) for obtaining video signals.

In one embodiment, video matcher **257** determines that video description **243** does not match viewer interest **115**. Video matcher **257** responds to video selector **256** with matching result **315** being negative.

In one embodiment, video selection script **150** includes a second television video. Based on negative matching result **315**, video selector **256** retrieves the second television video from video selection script **150**. Video selector **256** instructs video matcher **257** to match video description of the second television video against viewer interest **115**. In another embodiment, video selector **256** displays a message on television set **120** to inform viewer **110** that a television video that matches viewer interest **115** is unavailable.

FIG. **4** illustrates a process for selecting television video based on viewer interest level. Viewer interest **115** includes interest level **117**. In one embodiment, viewer **110** expresses interest level **117**. Interest level **117** represents a preference score viewer **110** has towards viewer interest **115**. In one embodiment, interest level **117** is an integer value, wherein a higher value indicates a higher preference score. In one embodiment, a lower interest level **117** value indicates a lower preference score.

In one embodiment, viewer **110** expresses interest level **117** while expressing viewer interest **115** to television controller **125**, for example, by using a remote control.

In one embodiment, viewer **110** expresses additional viewer interest **412**, wherein viewer interest **412** includes interest level **414**.

In this embodiment, video selection script **150** includes television video **142** and television video **444**. Television video **142** includes video description **243**. Television video **444** includes video description **449**.

Video selector **256** instructs video matcher **257** to match video description **243** against viewer interest **115**. Video matcher **257** responds to video selector **256** with a first matching result **315** being positive.

Video selector **256** instructs video matcher **257** to match video description **449** against viewer interest **412**. Video matcher **257** responds to video selector **256** with a second matching result **417** being positive.

Video selector **256** compares interest level **117** of viewer interest **115** and interest level **414** of viewer interest **412**. In one embodiment, interest level **117** is more preferable than interest level **414**. Video selector **256** selects television video **142**.

FIG. **5** illustrates a process for obtaining video selection script. Television controller **125** obtains video selection script **150** from network computer **195** over data network **190**.

In one embodiment, television controller **125** obtains video selection script **150** after the data or computing logic for selecting television video **142** is changed. In one embodiment, video selection script **150** includes the changed data or computing logic.

In one embodiment, network computer **195** establishes a communication session **598** with television controller **125** over data network **190**. Network computer **195** sends a notification **553** to television controller **125** over communication session **598**, wherein notification **553** includes information for obtaining video selection script **150**. In one embodiment, communication session **598** is based on Internet Protocol (IP). In one embodiment, communication session **598** is based on Web technologies. In one embodiment, communication session **598** is based on Remote Method Invocation (RMI), Really Simple Syndication (RSS) technology, or other proprietary technologies.

Television controller **125** receives notification **553**. In one embodiment, notification **553** includes a URL such as an HTTP URL for obtaining video selection script **150**.

Television controller **125** obtains video selection script **150** using the URL. In one embodiment, television controller **125** sends a request **559** over communication session **598** using the URL and receives video selection script **150** in a response for request **559**. In one embodiment, the URL is an HTTP URL; television controller **125** sends an HTTP message using the HTTP URL and receives video selection script **150** in a response to the HTTP message.

In another embodiment, television controller **125** obtains video selection script **150** after viewer interest **115** is expressed or updated.

In one embodiment, television controller **125** sends a request **558** to network computer **195** and receives video selection script **150** in a response to request **558**. In one embodiment, request **558** includes viewer interest **115**. In one embodiment, television controller **125** sends request **558** over communication session **598**. In one embodiment, television controller **125** sends request **558** over another communica-

tion session. In one embodiment, television controller **125** sends request **558** in a second HTTP message. Television controller **125** receives video selection script **150** in a response to the second HTTP message.

In a different embodiment, television controller **125** obtains video selection script **150** from network computer **195** periodically, such as every 10 minutes, every 30 minutes, every hour by the hour, or every 4 hours. In one embodiment, television controller **125** obtains video selection script **150** daily, or twice a day. In one embodiment, television controller **125** obtains video selection script **150** at random time.

In one embodiment, television set **120** displays a television video **152**. Television video **152** includes television selection script **150**. Television controller **125** obtains video selection script **150** from television video **152**. Television selection script **150** displays television video **142**, replacing the displayed television video **152**. In one embodiment, television selection script **150** displays television video **142** simultaneously as television set **120** displays television video **152**.

In one embodiment, video selection script **150** includes an interest level updater. Interest level updater updates interest level **117** after video selector **256** displays television video **142**. In one embodiment, interest level updater updates interest level **117** after video selector **256** displays television video **142** for a period of time, such as 10 minutes, 20 minutes or 25 minutes. In one embodiment, interest level updater updates interest level **117** by increments interest level **117** by one. In one embodiment, interest level updater updates interest level **117** by adding the time duration of displaying television video **142**.

In one embodiment, television video **142** includes a schedule. In one embodiment, the schedule includes a start time. In one embodiment, video selector **256** selects television video **142** since video description **243** matches viewer interest **115** and the schedule matches the current time. In one embodiment, the current time is after the start time. In one embodiment, the start time is within a short time period of the current time, such as 10 minutes, 3 minutes or 6 minutes. In one embodiment, the schedule includes an end time. In one embodiment, the schedule includes time duration.

In one embodiment, video selection script **150** obtains another television video for displaying on television set **120**. In one embodiment, the other television video is related to television video **142**. In one example, television video **142** is "Super Bowl XLII" and the other television video is related to pre-game interviews, team statistics, or highlights of Super Bowl XLII. In another example, television video **142** is the movie "Titanic" and the other television video is related to movie "Titanic", such as movie reviews, cast or director interviews, breaking news or gossip about leading stars Kate Winslet or Leonardo DiCaprio, movie trailers, history of Titanic, a book titled "Titanic", or a 50^{th} anniversary of Titanic.

In one embodiment, video selection script **150** obtains the other television video from a server over data network **190**. In one embodiment, the other television video is from a network computer over data network **190**. In one embodiment, the network computer is network computer **195**. In one embodiment, the network computer includes a data server, web server, or a video server. In one embodiment, the network computer includes an Internet portal, a social networking site. In one embodiment, video selection script **150** obtains the other television video using Web technologies, such as Real-time Streaming Protocol (RTSP), Flash, Hypertext Transfer Protocol (HTTP), or QuickTime streaming technology. In one embodiment, the network computer includes a home network storage.

In one embodiment, video description **243** is video quality such as "high definition quality" or "standard definition quality" television video **142**. In another embodiment, video description **243** is audio quality such as "DTS quality" or "Dolby Digital 5.1 quality" television video **142**.

In one embodiment, video selector **256** prompts viewer **110** by displaying information about the selected television video **142**. In one embodiment, the displayed information includes titles or images of television video **142**. In one embodiment, viewer **110** confirms television video **142**, for example, by using a remote control. Video selector **256** displays video signals from television channel 141.

In one embodiment, video selector **256** determines that there are more than one matching television videos. In one embodiment, video selector **256** displays information about the matching television videos on television set **120**. In one embodiment, viewer **110** selects television video **142**. Video selector **256** displays video signals from television channel 141.

In one embodiment, video selection script **150** selects television video **142** based on television video **152**. In one embodiment, video selection script **150** selects based on a video image of television video **152**. In one embodiment, video selection script **150** selects based on video description of television video **152**. In one embodiment, television video **152** does not include video selection script **150**.

Although the invention herein has been described with reference to particular embodiments, it is to be understood that these embodiments are merely illustrative of the principles and applications of the present invention. It is therefore to be understood that numerous modifications may be made to the illustrative embodiments and that other arrangements may be devised without departing from the spirit and scope of the present invention as defined by the appended claims.

The invention claimed is:

1. A method for selecting a television channel for display on a television, the method comprising:

receiving a viewer interest from a viewer of a plurality of channels;

receiving a video selection script in a scripting language from a television network comprising the plurality of channels, the video selection script comprising an interest dictionary;

processing the video selection script by a television controller, the television controller being operatively connected to the television and also to the television network comprising the plurality of channels, said processing includes the steps of:

determining an interest level for each of the plurality of channels based on the video selection script by matching a video description of each of said plurality of channels against the viewer interest using said interest dictionary, wherein said interest dictionary includes a plurality of description-interest pairs comprising a description term and an interest term, wherein for each given channel of the plurality of channels, the determining of the interest level comprises:

comparing the video description of the given channel against the description term of a given description-interest pair in the interest dictionary;

comparing the viewer interest against the interest term of the given description-interest pair; and

in response to determining that the video description of the given channel matches the description term of the given description-interest pair and that the viewer interest matches the interest term of the given descrip-

tion-interest pair, determining that the interest level for the given channel matches the viewer interest; and

selecting a channel to display on the television by the television controller based on the determined interest level of the selected channel by comparing a determined interest level of each of said plurality of channels, wherein the selected channel is a channel with the highest interest level; and

displaying the selected channel on the television.

2. The method according to claim **1**, wherein the video selection script is based on a Web scripting language.

3. The method according to claim **2**, wherein the Web scripting language is XML.

4. The method according to claim **1**, wherein the video selection script scripting language is based on anyone of: Hypertext Markup Language ("HTML"), JavaScript, Java, and Visual Basic Scripting Edition.

5. The method according to claim **1**, wherein the video selection script comprises the viewer interest.

6. The method according to claim **5**, wherein the viewer interest is selected by the viewer.

7. The method according to claim **6**, wherein the selection of the viewer interest by the viewer is by use of a television remote.

8. The method according to claim **1**, wherein the video selection script comprises data.

9. The method according to claim **8**, wherein the data comprises computing logic.

10. The method according to claim **8**, wherein the data is dynamically updated.

11. The method according to claim **10**, wherein the dynamic updating is caused by an event.

12. The method according to claim **1**, wherein said processing further comprises the step of:

receiving a reference to a different interest dictionary; and, said determining step uses said different interest dictionary.

13. The method of claim **1**, wherein the matching of the video description comprises matching a synonym of the video description of each of said plurality of channels against the viewer interest using the interest dictionary.

14. The method of claim **1**, wherein the video description comprises a description of a video image of a television video.

15. The method of claim **1**, wherein the selecting the channel to display on the television comprises:

comparing the interest level of each given channel determined to have the interest level matching the viewer interest; and

selecting the given channel with the highest interest level.

16. A television channel selection system comprising:

a script authoring tool for authoring a video selection script in a scripting language, the video selection script comprising an interest dictionary;

a television controller operatively connected to an electronic memory, the controller configured to receive a viewer interest from a viewer of a plurality of channels,

the controller further configured to process the video selection script, the television controller further being operatively connected to the television and also to a television network comprising the plurality of channels;

the television controller further configured to determine an interest level for each of the plurality of channels based on the video selection script by matching a video description of each of said plurality of channels against the viewer interest using said interest dictionary, wherein said interest dictionary includes a plurality of description-interest pairs comprising a description term and an interest term, and select a channel to display on the television based on the determined interest level by comparing a determined interest level of each of said plurality of channels, wherein the selected channel is a channel with the highest interest level, and to display the selected channel on the television, wherein for each given channel of the plurality of channels, in determining the interest level, the television controller is further configured to:

compare the video description of the given channel against the description term of a given description-interest pair in the interest dictionary;

compare the viewer interest against the interest term of the given description-interest pair; and

in response to determining that the video description of the given channel matches the description term of the given description-interest pair and that the viewer interest matches the interest term of the given description-interest pair, determine that the interest level for the given channel matches the viewer interest.

17. The system according to claim **16**, wherein the video selection script is based on a Web scripting language.

18. The system according to claim **16**, wherein the video selection script comprises the viewer interest.

19. The system according to claim **18**, wherein the viewer interest is selected by the viewer.

20. The system according to claim **16**, wherein the video selection script comprises data.

21. The system according to claim **16**, wherein the video selection script comprises computing logic.

22. The system according to claim **16**, wherein the video selection script is dynamically updated.

23. The system according to claim **22**, wherein the dynamic updating is caused by an event.

24. The system according to claim **16**, wherein in matching of the video script, the television controller is further configured to receive a reference to a different interest dictionary, and use said different interest dictionary to determine said channel with the highest interest level.

25. The system of claim **16**, wherein the matching of the video description comprises matching a synonym of the video description of each of said plurality of channels against the viewer interest using the interest dictionary.

26. The system of claim **16**, wherein the video description comprises a description of a video image of a television video.

27. The system of claim **16**, wherein in selecting the channel to display on the television, the television controller is further configured to:

compare the interest level of each given channel determined to have the interest level matching the viewer interest; and

select the given channel with the highest interest level.

28. A television channel selection system comprising:

a television controller operatively connected to an electronic memory, the controller configured to receive a viewer interest from a viewer of a plurality of channels and to process a video selection script comprising an interest dictionary, the television controller further being operatively connected to the television and also to a television network comprising the plurality of channels;

a script authoring tool for authoring a video selection script in a Web-based scripting language by the viewer, the video selection script comprising data and computer logic; the television controller further configured to determine an interest level for each of the plurality of channels based on the video selection script by matching a video description of each of said plurality of channels

against the viewer interest using said interest dictionary, wherein said interest dictionary includes a plurality of description-interest pairs comprising a description term and an interest term, wherein for each given channel of the plurality of channels, in determining the interest level, the television controller is further configured to:

compare the video description of the given channel against the description term of a given description-interest pair in the interest dictionary;

compare the viewer interest against the interest term of the given description-interest pair; and

in response to determining that the video description of the given channel matches the description term of the given description-interest pair and that the viewer interest matches the interest term of the given description-interest pair, determine that the interest level for the given channel matches the viewer interest;

select a channel to display on the television based on the determined interest level by comparing a determined interest level of each of said plurality of channels, wherein the selected channel is a channel with the highest interest level, to display the selected channel on the television, and to dynamically update the video selection script based on the occurrence of an event.

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