### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6671251

| SUBMISSION TYPE:      | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT     |

#### **CONVEYING PARTY DATA**

| Name                     | Execution Date |
|--------------------------|----------------|
| ELDON TECHNOLOGY LIMITED | 10/29/2014     |

#### **RECEIVING PARTY DATA**

| Name:           | ECHOSTAR UK HOLDINGS LIMITED   |  |
|-----------------|--------------------------------|--|
| Street Address: | HUGHES HOUSE, ROCKINGHAM DRIVE |  |
| City:           | LINFORD WOOD, MILTON KEYNES    |  |
| State/Country:  | UNITED KINGDOM                 |  |
| Postal Code:    | MK14 6PD                       |  |

#### **PROPERTY NUMBERS Total: 1**

| Property Type       | Number   |
|---------------------|----------|
| Application Number: | 16459323 |

#### **CORRESPONDENCE DATA**

#### Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

**Email:** tbello@kilpatricktownsend.com

Correspondent Name: KILPATRICK TOWNSEND & STOCKTON LLP

Address Line 1: 1400 WEWATTA SUITE 600
Address Line 4: DENVER, COLORADO 80202

| ATTORNEY DOCKET NUMBER: | P2014-01-20.2 (1144499) |
|-------------------------|-------------------------|
| NAME OF SUBMITTER:      | TINA BELLO              |
| SIGNATURE:              | /Tina Bello/            |
| DATE SIGNED:            | 04/22/2021              |

#### **Total Attachments: 20**

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#### PATENT ASSIGNMENT

WHEREAS, Eldon Technology Limited, a limited liability company organized and existing under the laws of the England and Wales, and having a principal place of business of Beckside Design Centre, Millennium Business Park Station Road, Steeton, Keighley, BD20 6QW ("ASSIGNOR"), owns rights in, to and under the patent applications set forth in the attached Exhibit B (the "Properties"); and

WHEREAS, EchoStar UK Holdings Limited, a limited liability company organized under the laws of the England and Wales, and having a principal place of business of Beckside Design Centre, Millennium Business Park Station Road, Steeton, Keighley, BD20 6QW ("ASSIGNEE"), is desirous of acquiring ASSIGNOR'S entire right, title and interest in, to and under the Properties.

WHEREAS, Assignor, to the extent they own any right, title and interest in and to the Properties is desirous of assigning any and all such rights, title and/or interest to Assignee.

NOW, THEREFORE, USD \$1.00 and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Assignor has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto the ASSIGNEE, its successors, legal representatives and assigns, the entire right, title and interest in, to and under the Properties and any and all letters patent or patents in the United States of America and all foreign countries which may be granted therefore and (including any divisions, continuations, continuations-in-part, reissues, reexaminations or extensions of letters patents and other related applications arising from, corresponding to and/or claiming priority to any of the Properties) and the registration thereof, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the ASSIGNEE for its own use and enjoyment and for the use and enjoyment of its successors, legal representatives and assigns, to the full end of the term or terms for which letters patent may be granted, as fully and entirely as the same would have been held and enjoyed by the ASSIGNOR had this assignment not been made, and further including all income, royalties, damages and payments for past or future infringements and misappropriations thereof, all rights to sue for past, present and future infringements or misappropriations thereof, and all rights corresponding to any of the above throughout the world and for the full term or terms of assigned Properties, including the right to claim priority to any of the patents or applications listed in the Properties or any patents or applications resulting from the listed Properties that have not yet been filed;

AND for the same consideration, ASSIGNOR hereby covenants and agrees to and with ASSIGNEE, its successors, legal representatives and assigns, that ASSIGNOR will encourage its employees named as inventors on one or more of the assigned Properties, to make, execute and deliver any and all other instruments in writing as may be necessary to assign the Properties to ASSIGNEE, including, but not limited to, any and all further application papers, affidavits, assignments and other documents, and that ASSIGNOR will

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communicate to ASSIGNEE, its successors, legal representatives and assigns, all facts known to ASSIGNOR relating to the Properties, and that ASSIGNOR will testify in all legal proceedings and generally do all things which may be necessary or desirable to more effectually secure to and vest in ASSIGNEE, its successors, legal representatives and assigns, the entire right, title and interest in and to the Properties;

AND THE ASSIGNOR HEREBY authorizes and requests the Commissioner of the United States Patent and Trademark Office, and any official of any country or countries foreign to the United States, whose duty is to issue patents or other evidence or forms of industrial property protection on applications as aforesaid, to issue the same to the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

Assignor hereby authorizes Assignee to insert in this instrument the filing date and Application Serial Number in the above fields if not already present at the time of execution of this instrument.

IN WITNESS WHEREOF, the undersigned have executed this Patent Assignment and License Agreement as of the 29th day of October 2014.

Eldon Technology Limited

By:

Name: Dean A. Manson

Title: Executive Vice President,

General Counsel & Secretary

EchoStar UK Holdings Limited

ву:

Name: Michael T. Dugan

Title: CEO & President

On this 29th day of October, 2014, before me a notary public in and for the county of Arapahoe in the State of Colorado, appeared Dean A. Manson, who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he signed, seals and delivered the same instrument as a free and voluntary act for the use and purposes therein set forth. KAITLYN O'HARA NOTARY PUBLIC STATE OF COLORADO NOTARY ID: 20004020733 MY COMMISSION EXPIRES: OCTOBER 28, 2015 (al) Notary Public On this 29th day of October, 2014, before me a notary public in and for the county of Arapahoe in the State of Colorado, appeared Michael T. Dugan, who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he signed, seals and delivered the same instrument as a free and voluntary act for the use and purposes therein set forth. TARA FITZSIMMONS NOTARY PUBLIC STATE OF COLORADO NOTARY ID: 20134077861 MY COMMISSION EXPIRES: DECEMBER 13, 2017 Notary Public (Seal)

# Exhibit B ASSIGNED PATENTS AND PATENT APPLICATIONS

## U.S. Patents

| Issue Date   | Patent No.   | Title   |
|--------------|--------------|---|
| Feb 27, 2013 | 8239897      | Method and Apparatus for Multiple Audio       |
|              |              | Outputs                                       |
| Feb 21, 2012 | 8875192      | Method and Apparatus for Multiple Audio       |
|              |              | Outputs                                       |
| Sep 26, 2013 | 8032771      | Systems and Methods for Controlling Power     |
|              |              | Consumption of Power Supply of Electronic     |
|              |              | Devices                                       |
| Jun 25, 2013 | 8768143      | Handling of Recording Clashes Which Are Not   |
|              |              | Know When User Creates Recording Request      |
| Jun 10, 2013 | 7868480      | Saturating Series Clipper                     |
| Nov 15, 2013 | 8462275      | A REMOTE CONTROL DEVICE FOR CONTROLLING       |
|              |              | THE PRESENTATION OF BROADCAST                 |
|              |              | PROGRAMMING                                   |
| Nov 21, 2013 | 8301270      | SYSTEMS AND METHODS FOR FACILITATING          |
|              |              | HOME AUTOMATION                               |
| Sep 4, 2014  | 8798311      | Scrolling Display of Electronic Program Guide |
| , .          |              | Utilizing Images of User Lip Movements        |
| Apr 3, 2014  | 8035916      | Hard Disc Drive Counter-Vibration System      |
| Feb 7, 2014  | 8358482      | Hard Disc Drive Counter-Vibration System      |
| Jul 15, 2013 | 8762978      | Content Receiver Having a Low-Power Mode      |
| Mar 27, 2013 | 8850488      | Systems And Methods For Accessing Electronic  |
| ·            |              | Program Guide Information Over A Backchannel  |
|              |              | Communication Path                            |
| Mar 27, 2013 | 8060861      | Tool to Generate Active Page Interface        |
| ·            |              | Instructions                                  |
| Mar 27, 2013 | 8327401      | Alteration of Electronic Program Guide Data   |
| ·            |              | Based on Ratings Lock                         |
| Mar 27, 2013 | 8739222      | Alteration of Electronic Program Guide Data   |
| ·            |              | Based on Ratings Lock                         |
| Mar 27, 2013 | 8831399      | Systems and Methods for Managing Files on a   |
|              |              | Digital Video Recorder                        |
| Aug 21, 2013 | 8468636      | Apparatus, Systems and Methods for Debris     |
| -            |              | Removal from an Antenna                       |
| Apr 30, 2014 | 8282740      | Apparatus, Systems and Methods for Removing   |
|              |              | Debris From a Surface                         |
| Oct 22, 2014 | 8454751      | Apparatus, Systems and Methods for Removing   |
| ,            |              | Debris From a Surface                         |
| Oct 22, 2014 | 8706093      | Predictive Calendar                           |
| Dec 11, 2013 | ······       | Recording System                              |
| Aug 12, 2014 | <del> </del> | Peak Time Power Saving                        |
| Oct 1, 2014  | ¢            | Methods and apparatus for tracking user's     |

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|                           |          | remote control handling signatures   |
|---------------------------|----------|--|
| Oct 16, 2013              | 8704877  | SYSTEMS AND METHODS FOR PRESENTING   |
| wat atty awar             | 0,000    | THREE-DIMENSIONAL CONTENT USING  |
|                           |          | APERTURES  |
| Oct 22, 2014              | 8477400  | SYSTEMS AND METHODS FOR PRESENTING   |
| Out aa, auan              | 0477400  | THREE-DIMENSIONAL CONTENT USING  |
|                           |          | PHOTOSENSITIVE LENSES  |
| Oct 22, 2013              | 8316413  |  |
| ULL 22, 2013              | 0310413  | Apparatus for Displaying Electrical Device Usage<br>Information on a Television Receiver |
| የፌዜ ፕሮ ብላን                | 8588575  | ***************************************  |
| Feb 27, 2013              | 63003/3  | Apparatus and Methods for High-Speed Video Presentation                                  |
| r_L 74 7017               | 8745688  |  |
| Feb 21, 2012              | 8743988  | A Method and Device for Operating a Television   |
|                           |          | Located in a Premises to Simulate Occupation of  |
| r                         | 000000   | the Premises   |
| Sep 26, 2013              | 8364009  | Apparatus, Systems and Methods for a   |
|                           |          | Thumbnail-Sized Scene Index of Media Content   |
| Jun 25, 2013              | 8655335  | Playback pause before signal loss of a mobile  |
|                           |          | device   |
| Jun 10, 2013              | 8781824  | Offline generation of subtitles  |
| Nov 15, 2013              | 8836276  | Charging Batteries for Electronic Devices by   |
|                           |          | Talking  |
| Nov 21, 2013              | 8363411  | Passive, Low-Profile Heat Transferring System  |
| Sep 4, 2014               | 8619427  | Media Content Device Chassis with Internal   |
|                           |          | Extension Members  |
| Apr 3, 2014               | 8681495  | Media Device Having a Piezoelectric Fan  |
| Feb 7, 2014               | 8682169  | Apparatus, Systems and Methods for Detecting   |
|                           |          | Infrared Signals at a Media Device Configured to   |
|                           |          | be Positioned in Different Orientations  |
| Jul 15, 2013              | 8638199  | Apparatus, Systems and Methods for Power Line  |
|                           |          | Carrier Data Communication to DC Powered   |
|                           |          | Electronic Device  |
| Mar 27, 2013              | 8830040  | Apparatus, Systems and Methods for Power Line  |
|                           |          | Carrier Data Communication to DC Powered   |
|                           |          | Electronic Device  |
| Mar 27, 2013              | 8792054  | Auto-resizing for Subtitles  |
| Mar 27, 2013              | 8629623  | Smart Illumination for Electronic Devices  |
| Mar 27, 2013              | 8732754  | Expanded Programming Guide   |
| Mar 27, 2013              | 8750673  | Systems and Methods for Reducing a User's  |
| · ·                       |          | Ability to Perceive Hard Drive Noise   |
| Aug 21, 2013              | 8595768  | Enhanced Program Preview Content   |
| Apr 30, 2014              | <u> </u> | APPARATUS, METHOD AND ARTICLE FOR A DUAL-  |
| 7 72. 50, 2037            |          | PROGRAM DISPLAY  |
| Oct 22, 2014              | 8873938  | Handling Requests when Available Channel   |
| to be desiry destruction? | 56,6500  | Selectors Are in Use   |
| Oct 22, 2014              | 8855466  | Separate video file for I-frame and non-I-frame  |
| Sucaz, aus                | ₩        | data to improve disk performance in trick play   |
| Doc 11 2012               | 9704049  |  |
| Dec 11, 2013              | 8704948  | Apparatus, Systems and Methods for Presenting  |

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|             |         | Text Identified in a Video Image |
|-------------|---------|----------------------------------|
| Oct 1, 2014 | 8793724 | IMAGE DOMAIN COMPLIANCE          |
| Nov 4, 2014 | 8881187 | LOGGING NETWORK DISCOVERABLE     |
|             |         | INFORMATION                      |

# U.S. Patent Applications

| Filing Date  | Application No. | Title  |
|--------------|-----------------|--|
| Nov 20, 2008 | 12275058        | Systems and Methods for Providing Distributed      |
|              |                 | Television Services to a Subscriber                |
| Sep 30, 2008 | 12242286        | Segmented Progress Indicator                       |
| Sep 3, 2008  | 12203286        | CONTROLLING AN ELECTRONIC DEVICE BY WAY OF         |
|              |                 | A CONTROL DEVICE                                   |
| Dec 29, 2009 | 12648789        | A SYSTEM AND METHOD FOR PRESENTING                 |
|              |                 | SELECTED BROADCAST PROGRAMMING                     |
| Dec 4, 2008  | 12327977        | RANDOMLY SELECTING CURRENT PROGRAMMING             |
| Mar 19, 2009 | 12407208        | ARCHIVING BROADCAST PROGRAMS                       |
| Aug 29, 2008 | 12201928        | Data Transcoding                                   |
| Jan 17, 2011 | 13054563        | Dynamic QOS in a Network Distributing Streamed     |
|              |                 | Content  |
| Dec 24, 2008 | 12344049        | Seperate Smartcard Rights for External HDD Library |
| Sep 18, 2008 | 12233274        | METHODS AND APPARATUS FOR PROVIDING                |
|              |                 | MULTIPLE CHANNEL RECALL ON A TELEVISION            |
|              |                 | RECEIVER   |
| Sep 15, 2008 | 12210831        | METHOD AND APPARATUS FOR RECORDING AND             |
|              |                 | VIEWING OF AN AUDIO/VIDEO PROGRAM IN               |
|              |                 | RESPONSE TO A NON-RECORDING EVENT DURING           |
|              |                 | THE PROGRAM  |
| Dec 23, 2008 | 12342807        | Enhanced Electronic Program Guides, Systems and    |
|              |                 | Methods  |
| Jan 30, 2009 | 12363391        | Enhanced Display Panels of Television Receiving    |
|              |                 | Devices and Methods                                |
| Oct 8, 2012  | 13647254        | SYSTEMS AND METHODS FOR FACILITATING HOME          |
|              |                 | AUTOMATION   |
| Jan 14, 2010 | 13145980        | Making available previously broadcast              |
|              |                 | programming  |
| Jan 30, 2009 | 12363228        | Channel change insert                              |
| Aug 1, 2014  | 14449568        | SYSTEMS AND METHODS FOR LIP READING                |
|              |                 | CONTROL OF A MEDIA DEVICE                          |
| Nov 19, 2008 | 61116155        | Hard Disc Drive Counter-vibration suspension       |
|              |                 | mount  |
| Apr 14, 2009 | 12423630        | Systems and Methods for Catch-Up Electronic        |
|              |                 | Program Guide                                      |
| Jun 16, 2009 | 12485611        | SYSTEMS AND DEVICES FOR PRESENTING SOCIAL          |
|              |                 | NETWORKING EVENTS VIA A TELEVISION RECEIVER        |
| Jun 17, 2009 | 12486617        | Automatic Web Searches Based on EPG                |

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| Jun 25, 2009                            | 12492038                  | Apparatus and Systems For Heating A Satellite Antenna Reflector |
|---|---------------------------|---|
| Sep 14, 2009                            | 12558846                  | SYSTEMS AND METHODS FOR INSURING DIGITAL                        |
| 0000 11, 11000                          | 20 00 00 00 00 00 00 1 00 | MEDIA DOWNLOAD TRANSACTIONS                                     |
| May 16, 2012                            | 13510258                  | A Method and System for Media Content Playback                  |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |                           | and Storage   |
| Dec 30, 2009                            | 12650168                  | Device Control Bus Command Translation for                      |
| 200 20, 2002                            | 200000000                 | Noncompliant and Incompatible Devices                           |
| May 12, 2014                            | 14275538                  | Recording System  |
| Feb 4, 2010                             | 12700430                  | Highlights of Premium Multimedia Content                        |
| May 30, 2013                            | 13905949                  | SYSTEMS AND METHODS FOR PRESENTING THREE-                       |
| (viay 50, 2015                          | 23303343                  | DIMENSIONAL CONTENT USING PHOTOSENSITIVE                        |
|   |                           | LENSES  |
| Feb 4, 2010                             | 12700310                  | Electronic Appliance Status Notification via a Home             |
| reb 4, 2010                             | 12/00310                  | Entertainment System  |
| Nov 19, 2012                            | 12000034                  | Apparatus for Displaying Electrical Device Usage                |
| 1404 13, 2012                           | 13000334                  | Information on a Television Receiver                            |
| E.L. an ansis                           | 47073406                  |   |
| Feb 23, 2011                            | 13033496                  | ANTI FARE EVASION SYSTEM  |
| Feb 23, 2011                            | 13033459                  | Automatic Spoiler Prevention                                    |
| Oct 12, 2010                            | 12902320                  | VARIABLE TRANSPARENCY HEADS UP DISPLAYS                         |
| Oct 11, 2010                            | 12901849                  | Holographic 3D display  |
| Oct 12, 2010                            | 12903058                  | Thought control of set top box                                  |
| Oct 12, 2010                            | 12902969                  | Metadata origination verification                               |
| Sep 23, 2010                            | 12889218                  | Systems and Methods for Filtering Access to                     |
|   |                           | Content During Selected Time Periods                            |
| Jan 28, 2013                            | 13752004                  | Apparatus, Systems and Methods for a Thumbnall                  |
|   |                           | Sized Scene Index of Media Content                              |
| Oct 18, 2010                            | 12906656                  | DYNAMIC RECOGNITION OF WEB ADDRESSES IN                         |
|   |                           | VIDEO   |
| Dec 23, 2010                            | 12977948                  | RECOGNITION OF IMAGES WITHIN A VIDEO BASEC                      |
|   |                           | ON A STORED REPRESENTATION                                      |
| Nov 5, 2010                             | 12940735                  | Apparatus, Systems and Methods for Automatical                  |
|   |                           | Presenting Stored Media Content at Its Beginning                |
| Mar 14, 2012                            | 13420204                  | Dynamic video display delay based on historical                 |
|   |                           | channel change times  |
| Apr 18, 2013                            | 13880091                  | Content Recognition and Censorship                              |
| Dec 23, 2010                            | 12977507                  | METHODS AND APPARATUSES TO FACILITATE                           |
|   |                           | PRESELECTION OF PROGRAMMING PREFERENCES                         |
| Nov 5, 2013                             | 14071648                  | Playback pause before signal loss of a mobile devi-             |
| Feb 15, 2012                            | 13397243                  | CONTROLLING PLACESHIFTED CONTENT                                |
| Feb 13, 2012                            | 13371912                  | Copy Protection   |
| Feb 14, 2012                            | 13396470                  | Controlling Playback of Recordings                              |
| Dec 20, 2013                            | 14136192                  | Media Content Device Chassis with Internal                      |
| ,                                       |                           | Extension Members   |
| Mar 29, 2011                            | 13074971                  | Media Content Device with Customized Panel                      |
| Aug 22, 2014                            | 14466542                  | Apparatus, Systems and Methods for Power Line                   |
|   |                           | Carrier Data Communication to DC Powered                        |

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|                              |          | Electronic Device   |
|------------------------------|----------|---|
| Mar 22, 2011                 | 13053492 | Apparatus, Systems and Methods for Securely                           |
|                              |          | Storing Media Content Events on a Flash Memory                        |
|                              |          | Device  |
| Mar 22, 2011                 | 13053487 | Apparatus, Systems and Methods for Control of                         |
|                              |          | Inappropriate Media Content Events                                    |
| Jan 25, 2013                 | 13750792 | REMOTE VIEWING OF MEDIA CONTENT USING                                 |
|                              |          | LAYERED VIDEO ENCODING  |
| May 18, 2012                 | 13475794 | Improved Progress Bar   |
| Jul 25, 2014                 | 14341633 | AUTOMATIC SUBTITLE RESIZING   |
| Sep 28, 2012                 | 13630967 | AUTOMATIC SEARCH  |
| Nov 9, 2012                  | 13673079 | Network Content Monitoring  |
| Nov 4, 2013                  | 14071613 | Enhanced Program Preview Content                                      |
| May 6, 2014                  | 14271015 | APPARATUS, METHOD AND ARTICLE FOR A DUAL-                             |
| 11109 0, 2027                | 272,2020 | PROGRAM DISPLAY   |
| Oct 3, 2011                  | 13251770 | Search and Display Techniques for an Electronic                       |
| Qui J, ausa                  | 23232770 | Programming Guide   |
| Dec 28, 2012                 | 61746644 | HYBRID VOLTAGE REGULATOR CIRCUITS AND                                 |
| occas, core                  | 02770077 | SYSTEMS INCLUDING THE SAME  |
| Nov 1, 2011                  | 13286944 | VIDEO SERVICES RECEIVER THAT MANAGES                                  |
| 1900 1, 2011                 | 13200344 | INCOMPLETE PROGRAM RECORDINGS, AND                                    |
|                              |          | RELATED OPERATING METHODS   |
| Oct 17, 2014                 | 14517373 | Handling Requests when Available Channel                              |
| UCL 17, 2014                 | 1431/3/3 | Selectors Are in Use  |
| Com 18 3033                  | 13232829 | Associating Macro User Input Events with Content                      |
| Sep 14, 2011<br>Mar 28, 2012 | 61616557 | Transient Electrical Load Decoupling for a Direct                     |
| Widi Zo, ZUIZ                | 01010331 |   |
| A 8 2013                     | 1250000  | Current Power Supply  Translant Floridas Land Bosoupling for a Direct |
| Aug 8, 2012                  | 13569800 | Transient Electrical Load Decoupling for a Direct                     |
| law 22 2023                  | 42720070 | Current Power Supply VIDEO VEHICLE ENTERTAINMENT DEVICE WITH          |
| Jan 11, 2013                 | 13739878 |   |
| n aa maa                     |          | DRIVER SAFETY MODE  |
| Dec 14, 2011                 | 13325964 | Mapping Visual Display Screen to Portable Touch                       |
|                              | ADMENEZA | Screen  |
| Feb 1, 2013                  | ļ        | Display zoom controlled by Proximity detection                        |
| May 1, 2012                  | 13461564 | Smooth H264 reverse video playback on low-cost                        |
|                              |          | current generation set-top box hardware.                              |
| Mar 15, 2013                 | 61791985 | ADVANCE NOTIFICATION OF CATCH-UP EVENTS                               |
|                              |          | THROUGH BROADCAST META-DATA   |
| Mar 10, 2014                 | 14202265 | ADVANCE NOTIFICATION OF CATCH-UP EVENTS                               |
|                              |          | THROUGH BROADCAST META-DATA   |
| Dec 20, 2012                 | 13722608 | TELEVISION RECEIVER CLOUD SERVICE                                     |
|                              |          | AUGMENTATION  |
| Dec 31, 2012                 | 61747539 | AUTO CATCH-UP   |
| Jan 9, 2013                  | <i>_</i> | AUTO CATCH-UP   |
| Mar 15, 2013                 | 61793297 | BROADCAST CONTENT RESUME REMINDER                                     |
| Mar 7, 2014                  | 14200864 | BROADCAST CONTENT RESUME REMINDER                                     |
| Feb 11, 2013                 | 13764554 | Simulated Touch Input   |

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| Nov 29, 2012   13689482      |                      | NAVIGATION TECHNIQUES FOR ELECTRONIC   |  |  |  |
|------------------------------|----------------------|--|--|--|--|
|                              |                      | PROGRAMMING GUIDES AND VIDEO   |  |  |  |
| Dec 10, 2012                 | 13710069             | Temporal based embedded meta data for voice  |  |  |  |
|                              |                      | queries  |  |  |  |
| Nov 29, 2012                 | 13689516             | Photosensitivity Protection for Video Display  |  |  |  |
| Dec 28, 2012                 | 13730145             | Volume Level-Based Closed-Captioning Control   |  |  |  |
| Jun 12, 2014                 | 14303218             | IMAGE DOMAIN COMPLIANCE  |  |  |  |
| Mar 15, 2013                 | 61790611             | SHEET FORMED INDUCTIVE WINDING   |  |  |  |
| Mar 7, 2014                  | 14201570             | SHEET FORMED INDUCTIVE WINDING   |  |  |  |
| Mar 15, 2013                 | 13839195             | SYSTEMS AND METHODS FOR AVOIDING MISSING   |  |  |  |
|                              |                      | TELEVISION PROGRAMMING WHEN CHANGING   |  |  |  |
|                              |                      | BETWEEN TELEVISION CHANNELS  |  |  |  |
| Mar 15, 2013                 | 13385940             | SHARED DATA COMMUNICATION BANDWIDTHS   |  |  |  |
|                              |                      | AMONG MOBILE DEVICES   |  |  |  |
| Mar 6, 2013                  | 13787333             | TRICK PLAY TECHNIQUES FOR A PICTURE-IN-  |  |  |  |
|                              |                      | PICTURE WINDOW RENDERED BY A VIDEO   |  |  |  |
|                              |                      | SERVICES RECEIVER  |  |  |  |
| Sep 18, 2013                 | 14030607             | Use of Active Shutter Device to Securely Display   |  |  |  |
|                              |                      | Content  |  |  |  |
| Aug 1, 2014                  | 14449546             | LOUDNESS LEVEL CONTROL FOR AUDIO RECEPTION   |  |  |  |
| <b></b> ,                    |                      | AND DECODING EQUIPMENT   |  |  |  |
| Aug 1, 2014                  | 14449525             | LOUDNESS LEVEL CONTROL FOR AUDIO RECEPTION   |  |  |  |
|                              |                      | AND DECODING EQUIPMENT   |  |  |  |
| Jul 15, 2013                 | 13942451             | LOCATION-BASED TARGETED ADVERTISING  |  |  |  |
| Jan 30, 2014                 | 14168181             | METHODS AND APPARATUS FOR CREATION OF A  |  |  |  |
| ,                            | ·                    | REFERENCE TIME INDEX FOR AUDIO/VIDEO   |  |  |  |
|                              |                      | PROGRAMMING  |  |  |  |
| Aug 5, 2014                  | 14451894             | SYSTEMS, METHODS, AND APPARATUS FOR  |  |  |  |
| ~ <i>,</i>                   |                      | FACILITATING EXPANSION OF MEDIA DEVICE   |  |  |  |
|                              |                      | INTERFACE CAPABILITIES   |  |  |  |
| Jun 11, 2014                 | 14302058             | Systems and Methods for Facilitating Device  |  |  |  |
|                              |                      | Control, Device Protection, and Power Savings  |  |  |  |
| Sep 25, 2014                 | 14497130             | SENSORS FOR CARBON MONOXIDE IN THE HOUSE   |  |  |  |
| ,,                           |                      | AND OPENS VENTS OR WINDOWS   |  |  |  |
| Aug 27, 2014                 | 14470225             | CONTEXTUAL VOLUME CONTROL  |  |  |  |
| Aug 22, 2014                 | į                    | DEVICE-SPECIFIC LOGO ACTIVATION  |  |  |  |
| Sep 5, 2014                  | ļ                    | GAZE-BASED SECURITY  |  |  |  |
| Aug 27, 2014                 |                      | PROVISIONING PREFERRED MEDIA CONTENT   |  |  |  |
| Aug 27, 2014<br>Aug 27, 2014 | <del>}</del>         | TELEVISION RECEIVER-BASED NETWORK TRAFFIC  |  |  |  |
| MUB 27, 2014                 | 144/0332             | CONTROL  |  |  |  |
| 5-12 2014                    | 14000017             |  |  |  |  |
| Jul 3, 2014                  | 14323817             | Methods and Systems for Managing Consecutive   |  |  |  |
| A 37 303 *                   | 14470415             | Recordings   |  |  |  |
| Aug 27, 2014                 | 14470415             | SOURCE-LINKED ELECTRONIC PROGRAMMING   |  |  |  |
|                              |                      | GUIDE  |  |  |  |
| C 2 222                      | a a a sy or ey un un | ት አለም ነው ውጥ ነጻ እንም ምር እነዚሉ የሚያምር እና ምንም እንም ምንም ምንም እንም እንም ለመመር እና እነም እና እንም እና እንም እና እንም እና እንም እና እንም እና<br>እንም እና እንም እና እንም እና እንም እና እነም እና እንም እና እንም እና እንም እንም እና እንም እና እንም እና እንም እንም እና እንም እና እንም እና እንም እና እንም |  |  |  |
| Sep 3, 2014                  | 14476377             | HOME AUTOMATION CONTROL USING CONTEXT SENSITIVE MENUS  |  |  |  |

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|              |          | ADVERTISEMENTS DURING A TRICK PLAY MODE            |
|--------------|----------|--|
| Aug 27, 2014 | 14470352 | IN-RESIDENCE TRACK AND ALERT                       |
| Aug 27, 2014 | 14470248 | MEDIA CONTENT OUTPUT CONTROL                       |
| May 12, 2014 | 14275080 | SYSTEMS AND METHODS FOR TIMING                     |
|              |          | COMMERCIAL BREAKS                                  |
| Jul 29, 2014 | 14446120 | METHODS AND SYSTEMS FOR PROVIDING                  |
|              |          | ADDITIONAL CONTENT                                 |
| Sep 5, 2014  | 14479007 | BROADCAST EVENT NOTIFICATIONS                      |
| Jul 28, 2014 | 14444071 | METHODS AND SYSTEMS FOR CONTENT                    |
|              |          | NAVIGATION   |
| Jul 1, 2014  | 14321613 | SYSTEMS AND METHODS FOR FACILITATING               |
|              |          | ENHANCED DISPLAY CHARACTERISTICS BASED ON          |
|              |          | VIEWER STATE                                       |
| Aug 14, 2014 | 14459517 | PERSONALIZED AMBIENT TEMPERATURE                   |
|              |          | MANAGEMENT   |
| Jul 8, 2014  | 14326022 | Systems and Methods for Timing the Recording and   |
|              |          | Playback of Television Programming                 |
| Jul 28, 2014 | 14444320 | APPARATUS, SYSTEMS AND METHODS FOR                 |
|              |          | SYNCHRONIZING CALENDAR INFORMATION WITH            |
|              |          | ELECTRONIC PROGRAM GUIDE INFORMATION               |
| Sep 7, 2010  | 12876383 | Apparatus, Systems and Methods for Storing Music   |
|              |          | Program Content Events Received in a Content       |
|              |          | Stream   |
| Oct 29, 2012 | 13663249 | Enhanced Programme Preview Content                 |
| Feb 24, 2014 | 14188470 | Representation of Online Discussion in Conjunction |
|              |          | with Primary Visual Content                        |

# Unfiled U.S. Patent Applications

| EchoStar<br>Docket<br>Number | Application No. | Title   |
|------------------------------|-----------------|---|
| P2013-07-                    |                 | STB Infra-Red Remote Control volume control                   |
| 06.EP.US                     |                 | improvements and programming improvements                     |
| P2014-01-<br>23              |                 | CUSTOMIZED TELEVISION PROGRAM SELECTOR                        |
| P2014-01-<br>24              |                 | PAUSING PLAYBACK OF MEDIA CONTENT BASED ON USER PRESENCE      |
| P2014-08-<br>06              |                 | Systems and Methods for Advertising Insertion and Replacement |
| P2014-08-<br>07              |                 | FITNESS OVERLAY AND INCORPORATION FOR HOME AUTOMATION SYSTEM  |
| P2014-08-<br>08              |                 | Auto unlock on fire   |

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Foreign Patents

|   |               | Foreign Pa | tents  |
|---|---------------|------------|--|
| Issue Date                              | Patent No.    | Country    | Title  |
| Jul 25, 2012                            | 2455987       | G8         | A POWER SUPPLY UNIT INCORPORATING  |
|   |               |            | A CURRENT MONITORING DEVICE  |
| Feb 27,                                 | 2461768       | GB         | Dynamic QoS in a Network Distributing  |
| 2013                                    |               |            | Streamed Content   |
| Feb 21,                                 | 2730953       | CA         | Dynamic QOS in a Network Distributing  |
| 2012                                    |               |            | Streamed Content   |
| Sep 26,                                 | 2009317232    | AU         | Hard Disc Drive Counter-Vibration  |
| 2013                                    |               |            | System   |
| Jun 25, 2013                            | 212894        | IL         | Hard Disc Drive Counter-Vibration  |
|   |               |            | System   |
| Jun 10, 2013                            | 310384        | MX         | Hard Disc Drive Counter-Vibration  |
|   |               |            | System   |
| Nov 15,                                 | 171339        | SG         | Hard Disc Drive Counter-Vibration  |
| 2013                                    |               |            | System   |
| Nov 21,                                 | 1416511       | TW         | Hard Disc Drive Counter-vibration  |
| 2013                                    |               |            | suspension mount   |
| Sep 4, 2014                             | 2010252780    | AU         | Systems And Methods For Accessing  |
| • •                                     |               |            | Electronic Program Guide Information   |
|   |               |            | Over A Backchannel Communication   |
|   |               |            | Path   |
| Apr 3, 2014                             | 10-1384028    | KR         | Systems And Methods For Accessing  |
|   |               |            | Electronic Program Guide Information   |
|   |               |            | Over A Backchannel Communication   |
|   |               |            | Path   |
| Feb 7, 2014                             | 317888        | MX         | Systems And Methods For Accessing  |
|   |               |            | Electronic Program Guide Information   |
|   |               |            | Over A Backchannel Communication   |
|   |               |            | Path   |
| Jul 15, 2013                            | 175964        | SG         | Systems And Methods For Accessing  |
| -                                       |               |            | Electronic Program Guide Information   |
|   |               |            | Over A Backchannel Communication   |
|   |               |            | Path   |
| Mar 27,                                 | 2273607       | EP         | Apparatus and Systems For Heating A  |
| 2013                                    |               |            | Satellite Antenna Reflector  |
| Mar 27,                                 | 602010005777. | DE         | Apparatus and Systems For Heating A  |
| 2013                                    | t .           |            | Satellite Antenna Reflector  |
| Mar 27.                                 | 2273607       | FR         | Apparatus and Systems For Heating A  |
| 2013                                    |               |            | Satellite Antenna Reflector  |
| *************************************** | 2273607       | G8         | Apparatus and Systems For Heating A  |
| 2013                                    |               |            | Satellite Antenna Reflector  |
|   | 2273607       | NL         | Apparatus and Systems For Heating A  |
| 2013                                    |               |            | Satellite Antenna Reflector  |
| Aug 21,                                 | 2362644       | ΕP         | Recording System   |
| 2013                                    |               |            | and the second s |
|   | 1             |            |  |

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| 2014        |         |    | Status of an Electrical Appliance       |
|-------------|---------|----|---|
| Oct 22,     | 2431956 | EP | Intrusion Deterrence Employing a        |
| 2014        |         |    | Television                              |
| Oct 22,     | 2431956 | GB | A Method and Device for Operating a     |
| 2014        |         |    | Television Located in a Premises to     |
|             |         |    | Simulate Occupation of the Premises     |
| Dec 11,     | 316357  | MX | Automatic 'spoiler' prevention          |
| 2013        |         |    |   |
| Oct 1, 2014 | 2628042 | Eb | VARIABLE TRANSPARENCY HEADS UP          |
|             |         |    | DISPLAYS                                |
| Oct 16,     | 2503863 | EP | Media Content Device Chassis with       |
| 2013        |         |    | Internal Extension Members              |
| Oct 22,     | 2506699 | EP | Media Device Having a Piezoelectric Fan |
| 2014        |         |    |   |
| Oct 22,     | 314454  | MX | Systems and Methods for Reducing a      |
| 2013        |         |    | User's Ability to Perceive Hard Drive   |
|             |         |    | Noise                                   |

Foreign Patent Applications

| Filing<br>Date  | Application No. | Country | Title  |
|-----------------|-----------------|---------|--|
| Aug 18,<br>2009 | PCT182009006600 | WO      | Data Transcoding   |
| Jul 16, 2009    | PCTEP2009059187 | WO      | Dynamic QOS in a Network Distributing Streamed Content   |
| Jul 16, 2009    | 097807382       | EP      | Dynamic QOS in a Network Distributing Streamed Content   |
| Sep 4, 2009     | PCTEP2009061501 | wo      | Handling of Recording Clashes Which<br>Are Not Know When User Creates<br>Recording Request   |
| Aug 19,<br>2009 | 098127905       | TW      | Handling of Recording Clashes Which<br>Are Not Know When User Creates<br>Recording Request   |
| Sep 4, 2009     | PCTEP2009061499 | wo      | METHODS AND APPARATUS FOR<br>PROVIDING MULTIPLE CHANNEL<br>RECALL ON A TELEVISION RECEIVER   |
| Sep 4, 2009     | PCTEP2009061492 | WO      | METHOD AND APPARATUS FOR<br>RECORDING AND VIEWING OF AN<br>AUDIO/VIDEO PROGRAM IN<br>RESPONSE TO A NON-RECORDING<br>EVENT DURING THE PROGRAM |
| Dec 16,<br>2009 | PCTEP2009067345 | wo      | Enhanced Electronic Program Guides,<br>Systems and Methods   |
| Jan 23, 2009    | 091512723       | EP      | Making Available Previously Broadcast<br>Programming   |
| Jan 14, 2010    | PCTEP2010050405 | wo      | Making available previously broadcast programming  |

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| Jan 14, 2010 | 2750283                                 | CA   | Making available previously broadcast programming |
|--------------|---|------|---|
| Jan 14, 2010 | MXa2011007781                           | MX   | Making available previously broadcass             |
|              |   |      | programming                                       |
| Nov 18,      | PCTEP2009065383                         | wo   | Hard Disc Drive Counter-Vibration                 |
| 2009         |   |      | System  |
| Nov 18,      | PI09215522                              | BR   | Hard Disc Drive Counter-Vibration                 |
| 2009         |   |      | System  |
| Nov 18,      | 2743973                                 | CA   | Hard Disc Drive Counter-Vibration                 |
| 2009         |   |      | System  |
| Jun 16, 2011 | 2009801508367                           | CN   | Hard Disc Drive Counter-Vibration                 |
|              |   |      | System  |
| Nov 18,      | 097564793                               | EP   | Hard Disc Drive Counter-Vibration                 |
| 2009         |   |      | System  |
| Nov 18,      | 4077CHENP2011                           | IN   | Hard Disc Drive Counter-Vibration                 |
| 2009         |   |      | System  |
| Nov 18,      | 2011543775                              | JP   | Hard Disc Drive Counter-Vibration                 |
| 2009         |   |      | System  |
| Nov 18,      | 1020117014048                           | KR   | Hard Disc Drive Counter-Vibration                 |
| 2009         |   |      | System  |
| Nov 18,      | PI2011002216                            | MY   | Hard Disc Drive Counter-Vibration                 |
| 2009         | · · · · · · · · · · · · · · · · · · ·   |      | System  |
| May 17,      | PCTGB2010000996                         | l wo | Systems And Methods For Accessing                 |
| 2010         | . 4.40000000000000000000000000000000000 | **** | Electronic Program Guide Information              |
| 2010         |   |      | Over A Backchannel Communication                  |
|              |   |      | Path  |
| May 17,      | PI10129820                              | 8R   | Systems And Methods For Accessing                 |
| 2010         |   |      | Electronic Program Guide Information              |
|              |   |      | Over A Backchannel Communication                  |
|              |   |      | Path  |
| May 17,      | 2763050                                 | CA   | Systems And Methods For Accessing                 |
| 2010         |   |      | Electronic Program Guide Information              |
| 2020         |   |      | Over A Backchannel Communication                  |
|              |   |      | Path  |
| May 17,      | 2010800227481                           | CN   | Systems And Methods For Accessing                 |
| 2010         | LOZOGOCZETYCZ                           | W V  | Electronic Program Guide Informatio               |
| 2.0,2.0      |   |      | Over A Backchannel Communication                  |
|              |   |      | Path  |
| May 17,      | 107252421                               | EP   | Systems And Methods For Accessing                 |
| 2010         | aws and area.                           | ( )  | Electronic Program Guide Informatio               |
| 2010         |   |      | Over A Backchannel Communication                  |
|              |   |      | Path  |
| May 17,      | 216227                                  | IL   | Systems And Methods For Accessing                 |
| 2010         | and the section                         | , .  | Electronic Program Guide Informatio               |
| Cura         |   |      | Over A Backchannel Communication                  |
|              |   |      | Path  |
| May 17,      | 8642CHENP2011                           | IN   | Systems And Methods For Accessing                 |

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| 2010            |                 |     | Electronic Program Guide Information<br>Over A Backchannel Communication<br>Path                                      |
|-----------------|-----------------|-----|---|
| May 17,<br>2010 | 2012512444      | JÞ  | Systems And Methods For Accessing<br>Electronic Program Guide Information<br>Over A Backchannel Communication<br>Path |
| May 17,<br>2010 | 2014002659      | JР  | Systems And Methods For Accessing<br>Electronic Program Guide Information<br>Over A Backchannel Communication<br>Path |
| May 17,<br>2010 | PI2011005379    | MY  | Systems And Methods For Accessing Electronic Program Guide Information Over A Backchannel Communication Path          |
| May 14,<br>2010 | 099115551       | TW  | Systems And Methods For Accessing Electronic Program Guide Information Over A Backchannel Communication Path          |
| Jun 4, 2010     | PCTGB2010001093 | wo  | Automatic Web Searches Based on EPG   |
| Dec 7, 2010     | 2783270         | CA  | Method and Apparatus for Recording Television Content   |
| Dec 7, 2010     | PCTEP2010069108 | wo  | Method and Apparatus for Recording<br>Television Content  |
| Dec 7, 2010     | 107909228       | EP  | Method and Apparatus for Recording<br>Television Content  |
| Dec 7, 2010     | MXa2012006302   | MX. | Method and Apparatus for Recording<br>Television Content  |
| Nov 16,<br>2009 | 091761429       | EP  | A Method and System for Media<br>Content Playback and Storage   |
| Nov 12,<br>2010 | PCTEP2010067420 | WO  | A Method and System for Media<br>Content Playback and Storage   |
| Feb 9, 2011     | 111538609       | EP  | A Method and System for Obtaining<br>Content for a Calendar   |
| Feb 19,<br>2010 | 131640757       | EP  | Recording System  |
| Feb 19,<br>2010 | 102503026       | DE  | Recording System  |
| Feb 19,<br>2010 | 102503026       | FR  | Recording System  |
| Feb 19,<br>2010 | 102503026       | G8  | Recording System  |
| Feb 19,<br>2010 | 102503026       | NL  | Recording System  |
| Feb 4, 2011     | 111534095       | EP  | Highlights of Premium Multimedia<br>Content   |

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| Feb 9, 2011                             | 111538773       | EP    | Tracking user remote signatures                    |
|---|-----------------|-------|--|
| Feb 1, 2011                             | PCTEP2011051418 | wo    | Systems and Methods for Presenting                 |
|   |                 |       | Three-Dimensional Video Content to a               |
| *************************************** |                 |       | Viewer   |
| Feb 1, 2011                             | 2788626         | CA    | Systems and Methods for Presenting                 |
|   |                 |       | Three-Dimensional Video Content to a               |
|   |                 |       | Viewer   |
| Feb 1, 2011                             | 117034157       | EP    | Systems and Methods for Presenting                 |
|   |                 |       | Three-Dimensional Video Content to a               |
|   |                 |       | Viewer   |
| Feb 1, 2011                             | MXa2012008568   | MX    | Systems and Methods for Presenting                 |
|   |                 |       | Three-Dimensional Video Content to a               |
|   |                 |       | Viewer   |
| Feb 3, 2011                             | PCTEP2011051603 | wo    | A System and Method for Presenting                 |
|   |                 |       | Three-Dimensional Content                          |
| Feb 3, 2011                             | 2788996         | CA    | A System and Method for Presenting                 |
|   |                 |       | Three-Dimensional Content                          |
| Feb 3, 2011                             | 117038505       | EP    | Stereoscopic Display System Based on               |
| •                                       |                 |       | Glasses Using Photochromatic Lenses                |
| Feb 3, 2011                             | MXa2012009003   | MX    | A System and Method for Presenting                 |
| ,                                       |                 |       | Three-Dimensional Content                          |
| Feb 3, 2011                             | PCTEP2011051608 | wo    | A Method of Notifying a User of the                |
| ,                                       |                 |       | Status of an Electrical Appliance                  |
| Feb 3, 2011                             | 2788744         | CA    | A Method of Notifying a User of the                |
|   |                 |       | Status of an Electrical Appliance                  |
| Feb 3, 2011                             | 117076083       | ЕР    | A Method of Notifying a User of the                |
| ,                                       |                 |       | Status of an Electrical Appliance                  |
| Apr 21,                                 | 111635306       | ĘΡ    | A Method of Presenting Video Frames                |
| 2011                                    |                 |       | at a Non-Standard Speed and a Video                |
|   |                 |       | Content Device                                     |
| Sep 17,                                 | 101773976       | DE    | Intrusion Deterrence Employing a                   |
| 2010                                    |                 |       | Television   |
| Sep 17,                                 | 101773976       | FR    | Intrusion Deterrence Employing a                   |
| 2010                                    |                 |       | Television   |
| Sep 17,                                 | 101773976       | NL    | Intrusion Deterrence Employing a                   |
| 2010                                    |                 |       | Television   |
| Jun 21, 2010                            | 102511193       | EP    | Anti Fare Evasion System                           |
| Jun 21, 2010                            | 102511193       | DE    | Anti Fare Evasion System                           |
| Jun 21, 2010                            | 102511193       | FR    | Anti Fare Evasion System                           |
| Jun 21, 2010                            | . <del> </del>  | NL NL | Anti Fare Evasion System  Anti Fare Evasion System |
|   |                 | GB GB | Anti Fare Evasion System  Anti Fare Evasion System |
| Jun 21, 2010                            | .f              |       |  |
| Oct 11,                                 | PCTEP2011067751 | WO    | VARIABLE TRANSPARENCY HEADS UP                     |
| 2011                                    | 3013013         | C.8   | DISPLAYS   |
| Oct 11,                                 | 2813512         | CA    | VARIABLE TRANSPARENCY HEADS UP                     |
| 2011                                    |                 | 0.00: | DISPLAYS   |
| Oct 11,                                 | MXa2013003899   | MX    | VARIABLE TRANSPARENCY HEADS UP                     |
| 2011                                    |                 |       | DISPLAYS   |

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| Sep 15,<br>2011                         | PCTIB2011002725                                | wo                | Holographic 3D display               |
|---|--|-------------------|--------------------------------------|
| Sep 15,                                 | 2814130  | CA                | Holographic 3D display               |
| 2011                                    | awayaaw  | \ \C              | more of dishing                      |
| Sep 15,                                 | 118045913                                      | EP                | Holographic 3D display               |
| зер 13,<br>2011                         | 110045313                                      | Er                | uningraphic on dishial               |
| *************************************** | A 41/ 3/21/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2 | 8.637             | Halamashia 30 dinda.                 |
| Apr 5, 2013                             | <u> </u>                                       | MX                | Holographic 3D display               |
| Sep 15,                                 | PCTUS2011051693                                | wo                | Metadata origination verification    |
| 2011                                    |  |                   |                                      |
| Sep 15,                                 | 2814211  | CA                | Metadata origination verification    |
| 2011                                    |  |                   |                                      |
| Sep 15,                                 | 117617597                                      | EP                | Metadata origination verification    |
| 2011                                    |  |                   |                                      |
| Dec 20,                                 | 118081884                                      | WO                | RECOGNITION OF IMAGES WITHIN A       |
| 2011                                    |  |                   | VIDEO BASED ON A STORED              |
|   |  |                   | REPRESENTATION                       |
| Dec 20,                                 | 2822727  | CA                | RECOGNITION OF IMAGES WITHIN A       |
| 2011                                    |  |                   | VIDEO BASED ON A STORED              |
|   |  |                   | REPRESENTATION                       |
| Dec 20,                                 | 118081884                                      | EP                | RECOGNITION OF IMAGES WITHIN A       |
| 2011                                    |  |                   | VIDEO BASED ON A STORED              |
|   |  |                   | REPRESENTATION                       |
| Jun 21, 2013                            | MXa2013007386                                  | MX                | RECOGNITION OF IMAGES WITHIN A       |
|   |  |                   | VIDEO BASED ON A STORED              |
|   |  |                   | REPRESENTATION                       |
| Mar 6, 2012                             | 2770760  | CA                | Dynamic video display delay based on |
| irrar of words                          | 2.70700  | 0.,               | historical channel change times      |
| Mar 14,                                 | 111581427                                      | EP                | Dynamic video display delay based on |
| 2011                                    | 1110141  | 1                 | historical channel change times      |
|   | MXa2012003100                                  | MX                | Dynamic video display delay based on |
| •                                       | IAIVGSOTSOOSTOO                                | IVIA              | historical channel change times      |
| 2012                                    | P 8V 204 2002 400                              | N 837             |                                      |
| Mar 13,                                 | MXa2012003100                                  | MX                | Dynamic video display delay based on |
| 2012                                    | 1.2.1.2.1.2.1.2.2.2.2.2.2.2.2.2.2.2.2.2        | ļ                 | historical channel change times      |
| Dec 10,                                 | 101945103                                      | EP                | CONTENT RECOGNITION AND              |
| 2010                                    |  |                   | CENSORSHIP                           |
| Dec 12,                                 | PCTEP2011072460                                | wo                | CONTENT RECOGNITION AND              |
| 2011                                    |  |                   | CENSORSHIP                           |
| Dec 23,                                 | PCTEP2011073985                                | WO                | METHODS AND APPARATUSES TO           |
| 2011                                    |  |                   | FACILITATE PRESELECTION OF           |
|   |  |                   | PROGRAMMING PREFERENCES              |
| Dec 23,                                 | 2822753  | CA                | METHODS AND APPARATUSES TO           |
| 2011                                    |  |                   | FACILITATE PRESELECTION OF           |
|   |  |                   | PROGRAMMING PREFERENCES              |
| Dec 23,                                 | 118086487                                      | EP                | METHODS AND APPARATUSES TO           |
| 2011                                    |  |                   | FACILITATE PRESELECTION OF           |
|   |  |                   | PROGRAMMING PREFERENCES              |
|   | MXa2013007084                                  | <del></del> Тмх − | METHODS AND APPARATUSES TO           |

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|             |                 | T  | FACILITATE PRESELECTION OF                    |
|-------------|-----------------|----|---|
|             |                 |    | PROGRAMMING PREFERENCES                       |
| Dec 23,     | PCTEP2011074015 | wo | Offline generation of subtitles               |
| 2011        |                 |    |   |
| Dec 23,     | 2822751         | CA | Offline generation of subtitles               |
| 2011        |                 |    |   |
| Dec 23,     | 118086511       | EP | Offline generation of subtitles               |
| 2011        |                 |    |   |
| Dec 23,     | MXa2013006972   | MX | Offline generation of subtitles               |
| 2011        |                 |    |   |
| Feb 15,     | 111545174       | EP | CONTROLLING PLACESHIFTED                      |
| 2011        |                 |    | CONTENT                                       |
| Feb 10,     | 2767902         | CA | CONTROLLING PLACESHIFTED                      |
| 2012        |                 |    | CONTENT                                       |
| Feb 10,     | MXa2012001835   | MX | CONTROLLING PLACESHIFTED                      |
| 2012        |                 |    | CONTENT                                       |
| Feb 15,     | 111545802       | EP | Copy Protection                               |
| 2011        |                 |    |   |
| Feb 9, 2012 | 2767597         | CA | Copy Protection                               |
| Feb 10,     | MXa2012001834   | MX | Copy Protection                               |
| 2012        |                 |    |   |
| Feb 15,     | 111545885       | EP | Controlling Playback of Recordings            |
| 2011        |                 |    |   |
| Feb 10,     | 2767909         | CA | Controlling Playback of Recordings            |
| 2012        |                 |    |   |
| Feb 10,     | MXa2012001833   | MX | Controlling Playback of Recordings            |
| 2012        |                 |    |   |
| Mar 2, 2012 | 121578660       | EP | Passive, Low-Profile Heat Transferring System |
| Mar 9, 2012 | 121587935       | DE | Media Content Device Chassis with             |
|             |                 |    | Internal Extension Members                    |
| Mar 9, 2012 | 121587935       | FR | Media Content Device Chassis with             |
|             |                 |    | Internal Extension Members                    |
| Mar 9, 2012 | 121587935       | G8 | Media Content Device Chassis with             |
|             |                 |    | Internal Extension Members                    |
| Mar 9, 2012 | 121587935       | NL | Media Content Device Chassis with             |
|             |                 |    | Internal Extension Members                    |
| Mar 27,     | 121615777       | NL | Media Device Having a Piezoelectric           |
| 2012        |                 |    | Fan   |
| Mar 27,     | 121615777       | DΕ | Media Device Having a Piezoelectric           |
| 2012        |                 |    | Fan   |
| Mar 27,     | 121615777       | FR | Media Device Having a Piezoelectric           |
| 2012        |                 |    | Fan   |
| Mar 27,     | 121615777       | G8 | Media Device Having a Piezoelectric           |
| 2012        |                 |    | Fan   |
| Mar 12,     | 121590715       | EP | Media Content Device with                     |
| 2012        |                 |    | Customized Panel                              |

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|             | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,  | · · · · · · · · · · · · · · · · · · · |  |
|-------------|--|---------------------------------------|--|
| Feb 28,     | 121573679  | EP                                    | Apparatus, Systems and Methods for   |
| 2012        |  |                                       | Detecting Infrared Signals at a Media  |
|             |  |                                       | Device Configured to be Positioned in  |
|             |  |                                       | Different Orientations   |
| Mar 15,     | 121596753  | EP                                    | Apparatus, Systems and Methods for   |
| 2012        |  |                                       | Power Line Carrier Data  |
|             |  |                                       | Communication to DC Powered  |
|             |  |                                       | Electronic Device  |
| Mar 9, 2012 | 121587570  | Еb                                    | Apparatus, Systems and Methods for   |
| ·           |  |                                       | Securely Storing Media Content Events  |
|             |  |                                       | on a Flash Memory Device   |
| Mar 22.     | 121608673  | EP                                    | Apparatus, Systems and Methods for   |
| 2012        |  |                                       | Control of Inappropriate Media   |
|             |  |                                       | Content Events   |
| Feb 1, 2012 | 121534242  | EP                                    | Place shifting using synchronisation   |
|             |  |                                       | and Layered video encoding   |
|             | 2802264  | CA                                    | Place shifting using synchronisation   |
|             | EGGEEG-4   | Can                                   | and Layered video encoding   |
| Eab 11      | 121534242  | MX                                    | Place shifting using synchronisation   |
| 2013        | 121334242  | IVIX                                  |  |
|             | 11100000   | co                                    | and Layered video encoding   |
| May 20,     | 111668489  | EP                                    | Improved Progress Bar for Variable   |
| 2011        | A3334AA  |                                       | Speed Actions / Downloads  |
| May 16,     | 2777200  | CA                                    | Improved Progress Bar for Variable   |
| 2012        |  |                                       | Speed Actions / Downloads  |
| May 16,     | MXa2012005697  | MX                                    | Improved Progress Bar for Variable   |
| 2012        |  |                                       | Speed Actions / Downloads  |
| May 19,     | 111666905  | EP                                    | Auto-resizing for Subtitles  |
| 2011        |  |                                       |  |
| Sep 30,     | 111835468  | EP                                    | Automatic Search   |
| 2011        | ***************************************  |                                       |  |
| Sep 27,     | 2791026  | CA                                    | Automatic Search   |
| 2012        |  |                                       |  |
| Sep 24,     | MXa2012011037  | MX                                    | Automatic Search   |
| 2012        |  |                                       |  |
| Nov 9, 2011 | 111883815  | EP                                    | Network Content Monitoring   |
| Apr 26,     | h  | EP                                    | Smart Illumination for Electronic  |
| 2012        |  |                                       | Devices  |
| May 21,     | PCTEP2012059341  | wo                                    | 3D Content Down-Conversion to 2D   |
| 2012        | The state of the s |                                       | Content  |
| May 20,     | 111669917  | EP                                    | Expanded Programming Guide   |
| 2011        |  | 0,- 1                                 | more and a segment of the segment of |
| May 15,     | 2777082  | CA                                    | Expanded Programming Guide   |
| 2012        | 2.777002   |                                       | rybanese inframing gang  |
| }           | <br>  NAV-3013002C00   | NAV                                   | Every doed floren marker of the  |
| May 20,     | MXa2012005699  | MX                                    | Expanded Programming Guide   |
| 2011        | ***************************************  |                                       |  |
| May 20,     | 111669941  | EP                                    | Systems and Methods for Reducing a   |
| 2011        | <u> </u>   |                                       | User's Ability to Perceive Hard Drive  |

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|   |                                     |      | Noise                                 |
|---|-------------------------------------|------|---------------------------------------|
| May 16,                                 | 2777280                             | CA   | Systems and Methods for Reducing a    |
| 2012                                    |                                     |      | User's Ability to Perceive Hard Drive |
|   |                                     |      | Noise                                 |
| May 20,                                 | 111668927                           | EP   | Enhanced Programme Preview            |
| 2011                                    |                                     |      | Content                               |
| May 18.                                 | 2777439                             | CA   | Enhanced Programme Preview            |
| 2012                                    |                                     |      | Content                               |
| May 18,                                 | MXa2012005830                       | MX   | Enhanced Programme Preview            |
| 2012                                    |                                     |      | Content                               |
| Oct 1, 2012                             | 121867857                           | EP   | Search and Display Techniques for an  |
| ou a, ao a                              | 122007007                           | 11   | Electronic Programming Guide          |
| Ont 20                                  | 121000222                           |      |                                       |
| Oct 30,                                 | 121906226                           | EP   | Video Services Receiver for Managing  |
| 2012                                    | 4.04.00000                          | ~~~  | Incomplete Program Recordings         |
| Sep 14,                                 | 121845325                           | EP   | Associating Macro User Input Events   |
| 2012                                    |                                     |      | with Content                          |
| Mar 28,                                 | 131615478                           | EP   | System and Method for Mitigating      |
| 2013                                    |                                     |      | Voltage Droop in DC Circuit           |
| Jan 13, 2012                            | 121511554                           | EP   | Use of Audio Descriptor in mobile     |
|   |                                     |      | applications                          |
| Nov 29,                                 | 121948731                           | EP   | A Method and System for Mapping       |
| 2012                                    |                                     |      | Visual Display Screens to Touch       |
|   |                                     |      | Screens                               |
| Apr 29,                                 | 131658650                           | EP   | Method to Play a Video Data Stream,   |
| 2013                                    |                                     |      | Device and Computer Program           |
| Feb 3, 2012                             | 121539290                           | EP   | Display zoom controlled by Proximity  |
| · ca a, sace                            | and the case of the set the set the | -    | detection                             |
| Anr 29                                  | 131658684                           | EP   | Method to Play Video in Reverse and   |
| 2013                                    | 131836664                           | -    | Related Entertainment Device and      |
| 2013                                    |                                     |      |                                       |
| 8 8 2 8                                 | 2 42 500053                         | rn - | Computer Program                      |
| -                                       | 141598961                           | EP   | Method for Managing Recording         |
| 2014                                    |                                     |      | Resources for Programming Events of   |
|   |                                     |      | Interest, Television Receiver and     |
| *************************************** |                                     |      | Computer Program                      |
| Nov 25,                                 | 131942054                           | EP   | AUTO CATCH-UP                         |
| 2013                                    |                                     |      |                                       |
| Mar 14,                                 | 141601401                           | EP   | BROADCAST CONTENT RESUME              |
| 2014                                    |                                     |      | REMINDER                              |
| Feb 10,                                 | 141545053                           | ΕP   | Simulated Touch Input                 |
| 2014                                    |                                     |      |                                       |
| Nov 20,                                 | 131936866                           | EP   | System, Method and Computer           |
| 2013                                    |                                     |      | Program for Remote Navigation of      |
| avav                                    |                                     |      | Content                               |
| Dec 9, 2013                             | 131962961                           | EP   | Method in a System for Providing      |
| Dec 3, 2013                             | 232302302                           | h-1" | Information About Program Content     |
|   |                                     |      |                                       |
|   |                                     |      | and System                            |

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| 2013        |   |    | Captioning Control                  |
|-------------|---|----|-------------------------------------|
| Nov 8, 2013 | 131921694                               | EP | IMAGE DOMAIN COMPLIANCE             |
| Mar 13,     | PCTEP2014054977                         | WO | SHEET FORMED INDUCTIVE WINDING      |
| 2014        |   |    |                                     |
| Feb 24,     | PCTUS2014018071                         | wo | SYSTEMS AND METHODS FOR             |
| 2014        |   |    | AVOIDING MISSING TELEVISION         |
|             |   |    | PROGRAMMING WHEN CHANGING           |
|             | *************************************** |    | BETWEEN TELEVISION CHANNELS         |
| Mar 6, 2014 | PCTGB2014050670                         | wo | SHARED DATA COMMUNICATION           |
|             |   |    | BANDWIDTHS AMONG MOBILE             |
|             |   |    | DEVICES                             |
| Oct 31,     | 131912271                               | EP | LOGGING NETWORK DISCOVERABLE        |
| 2013        |   |    | INFORMATION                         |
| Mar 6, 2014 | 141579813                               | EP | TRICK PLAY TECHNIQUES FOR A         |
|             |   |    | PICTURE-IN-PICTURE WINDOW           |
|             |   |    | RENDERED BY A VIDEO SERVICES        |
|             |   |    | RECEIVER                            |
| Feb 11,     | 131547879                               | EP | Use of Active Eyeware to Securely   |
| 2013        |   |    | Display Content                     |
| Aug 1, 2013 | 131789471                               | EP | Volume-match different audio codecs |
|             |   |    | on external equipment               |
| Nov 8, 2013 | 131922023                               | EP | STB Infra-Red Remote Control volume |
|             |   |    | control improvements and            |
|             |   |    | programming improvements            |

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