interface of the media player that offers the user the opportunity to experience the media file in "High-Definition." In an exemplary embodiment, where the input mechanism comprises a link or button on a user interface such as a web page or a user interface of the media player, when user 18 selects the link or button, web browser 6 sends a request to media player server 14 (38). In response to the request, media player server 14 determines whether a media player capable of downloading and presenting the "high definition" version of the media file is installed on client device 4 (40). If the media player is already installed on client device 4 ("YES" of 40), media player server 14 sends a redirection message to web browser 6 (42). The redirection message causes web browser 6 to send a new request to a location where media player may download and play a high definition version of the media file (48). Alternatively, if the media player is not yet installed on client device 4 ("NO" of 40), media player 14 automatically transfers one or more installation files to client device 4 (44). Client device 4 may optionally confirm that user 18 would like to install the media player. If so, client device 4 executes the installation files and installs the media player (46). After the media player is installed, the media player may download and play a high definition version of the media file (48).

[0028] FIG. 3 is a screen illustration showing an exemplary user interface 50. User interface 50 includes a media file 52 and some text describing the media file. In addition, user interface 50 includes a link or button 54 with the caption "Click here to view this video in High Definition!" When a user selects link or button 54, the media player may be automatically configured on the client device and the media player may begin to present a higher-quality version of media file 52.

[0029] FIG. 4 is a screen illustration showing an exemplary user interface 60 in which a media player presents a higher-quality version of a media file 62. As illustrated in the example of FIG. 4, the higher-quality version of media file 62 may be larger. The example of FIG. 4 also illustrates that interface 50 may remain in the background while the media player presents higher-quality version of the media file 62.

[0030] Various embodiments of the invention have been described. These and other embodiments are within the scope of the following claims.

CLAIMS:

1. A method comprising:

presenting a user interface with a client device, wherein the user interface includes an embedded media file that is to be presented, and wherein the user interface includes an input mechanism that offers a user an opportunity to experience a version of the embedded media file that has higher quality than the media file embedded within the user interface;

automatically configuring a media player on the client device when the user interacts with the input mechanism to select the version of the embedded media file that has higher quality that the embedded media file;

automatically obtaining the higher-quality version of the media file using the media player; and

automatically presenting the higher-quality version of the media file using the media player.

2. The method of claim 1, wherein presenting a user interface comprises presenting a web page with a web browser.

3. The method of claim 1, wherein presenting a user interface comprises presenting a user interface of the media player executing on the client device.

4. The method of claim 1, wherein an input mechanism comprises at least one of a link and button.

5. The method of claim 1, wherein automatically configuring a media player comprises:

sending an installation file to the client device; and

executing the installation file to install the media player.

6. The method of claim 1, wherein the method further comprises:

determining, with a media player server, whether the media player is configured on the client device; and

redirecting the client device to a location where the higher-quality version of the media file is obtainable.

7. The method of claim 6, wherein the method further comprises downloading the higher-quality version with the media player before the user interacts with the input mechanism.

8. The method of claim 1, wherein automatically obtaining and presenting the higher-quality version comprises downloading the higher-quality version from a plurality of peer nodes.

9. The method of claim 8, wherein downloading the higher-quality version from a plurality of peer nodes comprises receiving data over multiple channels in parallel with data order prioritization.

10. The method of claim 8, wherein downloading the higher-quality version from a plurality of peer nodes comprises:

sending a request for data from the client device to a targeted computer system;

accessing at the targeted computer system a look-up list to identify other computers that have previously requested and downloaded at least a portion of the requested data;

sending requests to the identified computers, wherein upon receiving the requests the identified computers have received different partial portions of the requested data;

independently encoding the different partial portions of the data at the identified computers in response to the requests;

sending the encoded different partial portions of the data from the identified computers to the client device and completing the download of the remaining portions of the data with the identified computers;

receiving, with the client device, the different partial portions of the encoded data from at least two of the sending computers;

decoding the received encoded data to recreate the requested data from the different partial portions; and

saving the requested data in memory.

11. The method of claim 1, wherein presenting the higher-quality version comprises opening a new window to present the higher-quality version.

12. The method of claim 2, wherein the web page includes text.

13. A system comprising:

a client device to present a user interface, wherein the user interface includes an embedded media file that is to be presented, and wherein the user interface includes an input mechanism that offers a user an opportunity to experience a version of the media file that has higher quality than the embedded media file;

wherein the client device automatically configures a media player on the client device when the user interacts with the input mechanism to select the version of the embedded media file that has higher quality than the embedded media file;

wherein the client device automatically obtains the higher-quality version of the media file using the media player; and

wherein the client device automatically presents the higher-quality version of the media file using the media player.

14. The system of claim 13, wherein the user interface includes a web page presented by a web browser.

15. The system of claim 13, wherein the user interface includes a user interface of the media player executing on the client device.

16. The system of claim 13, wherein the input mechanism comprises at least one of a link and button.

17. The system of claim 13, wherein the client device automatically configures a media player by receiving an installation file from a media player server and executing the installation file to install the media player.

18. The system of claim 13, wherein the client device automatically obtains the higher-quality version of the media file by downloading the higher-quality version of the media file from a plurality of peer nodes.

19. The system of claim 13, wherein the client device automatically obtains the higher quality version of the media file by downloading the higher-quality version from a plurality of peer nodes over multiple channels in parallel with data order prioritization.

20. A computer-readable medium comprising instructions, the instructions causing a programmable processor to:

present a user interface with a client device, wherein the user interface includes an embedded media file that is to be presented, and wherein the user interface includes an input mechanism that offers a user an opportunity to experience a version of the embedded media file that has higher quality than the embedded media file;

automatically configure a media player on the client device when the user interacts with the input mechanism to select the version of the embedded media file that has a higher quality than the embedded media file;

automatically obtain the higher-quality version of the media file using the media player; and

automatically present the higher-quality version of the media file using the media player.

21. A method comprising:

presenting a web page with a client device, wherein the web page identifies an embedded media file that is to be presented as part of the web page, and wherein the web page includes a link that offers a user an opportunity to experience a version of the embedded media file that has higher quality than the embedded media file;

automatically configuring a media player on the client device when the user selects the link;

automatically obtaining the higher-quality version of the media file using the media player; and

automatically presenting the higher-quality version of the media file using the media player.

22. A system comprising:

a client device to present a web page, wherein the web page identifies a media file that is to be presented as part of the web page, and wherein the web page includes a link that offers a user an opportunity to experience a version of the media file that has higher quality than the media file;

wherein the client device automatically configures a media player on the client device when the user selects the link;

wherein the client device automatically obtains the higher-quality version of the media file using the media player; and

wherein the client device automatically presents the higher-quality version of the media file using the media player.

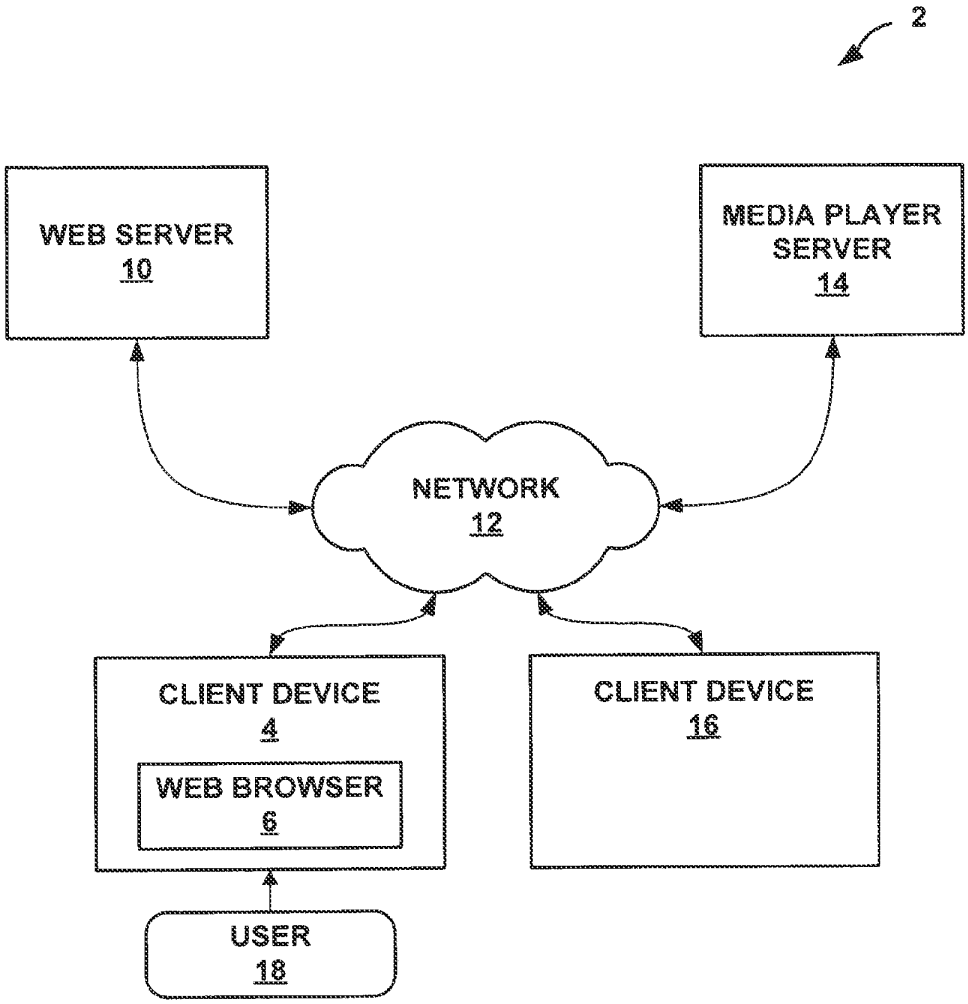
2
WEB SERVER
10
MEDIA PLAYER
SERVER
14
NETWORK
12
CLIENT DEVICE
4
WEB BROWSER
6
CLIENT DEVICE
16
USER
18

FIG. 1

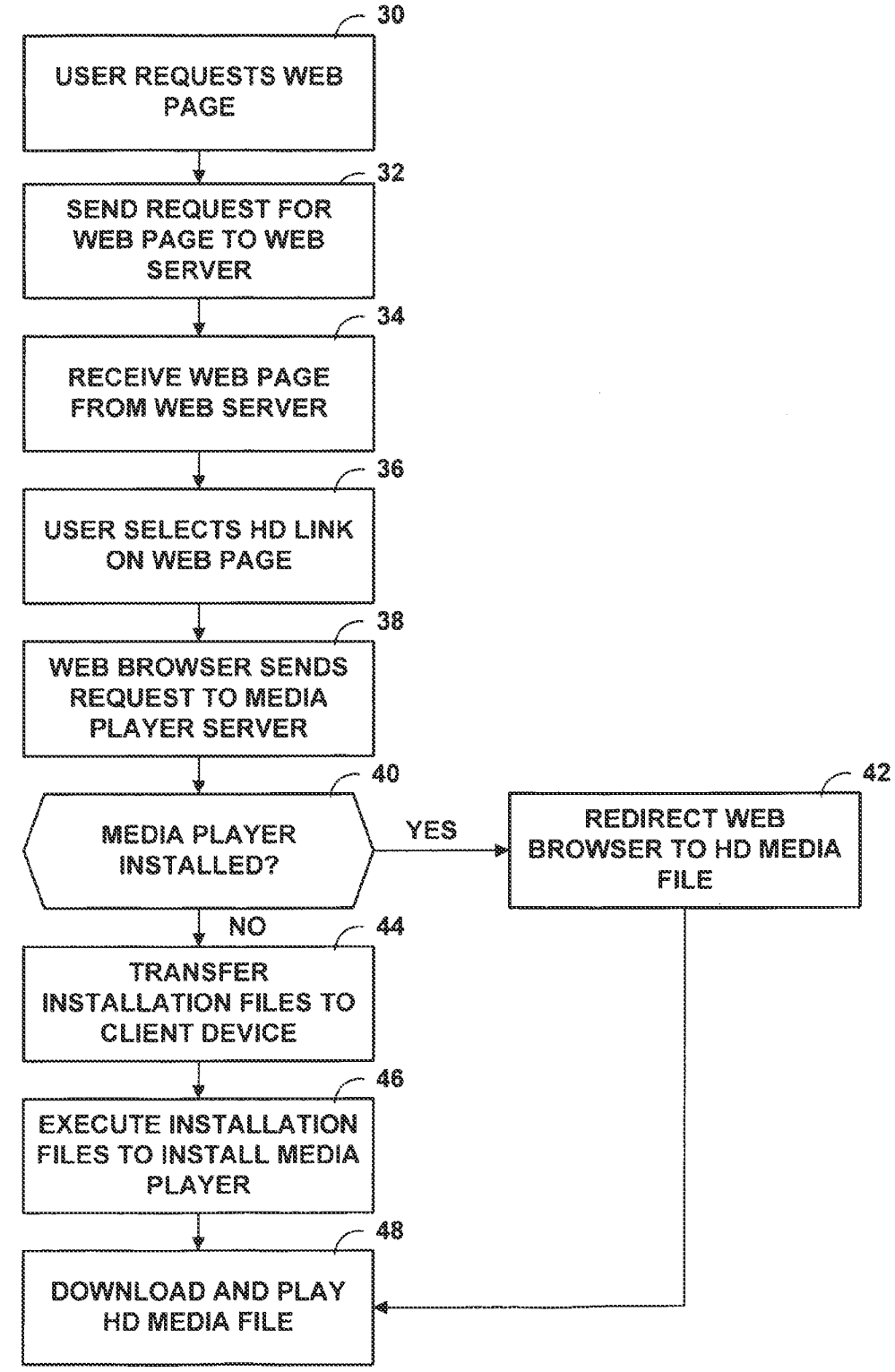
30
USER REQUESTS WEB PAGE
32
SEND REQUEST FOR WEB PAGE TO WEB SERVER
34
RECEIVE WEB PAGE FROM WEB SERVER
36
USER SELECTS HD LINK ON WEB PAGE
38
WEB BROWSER SENDS REQUEST TO MEDIA PLAYER SERVER
40
MEDIA PLAYER INSTALLED?
YES
42
REDIRECT WEB BROWSER TO HD MEDIA FILE
NO
44
TRANSFER INSTALLATION FILES TO CLIENT DEVICE
46
EXECUTE INSTALLATION FILES TO INSTALL MEDIA PLAYER
48
DOWNLOAD AND PLAY HD MEDIA FILE

FIG. 2

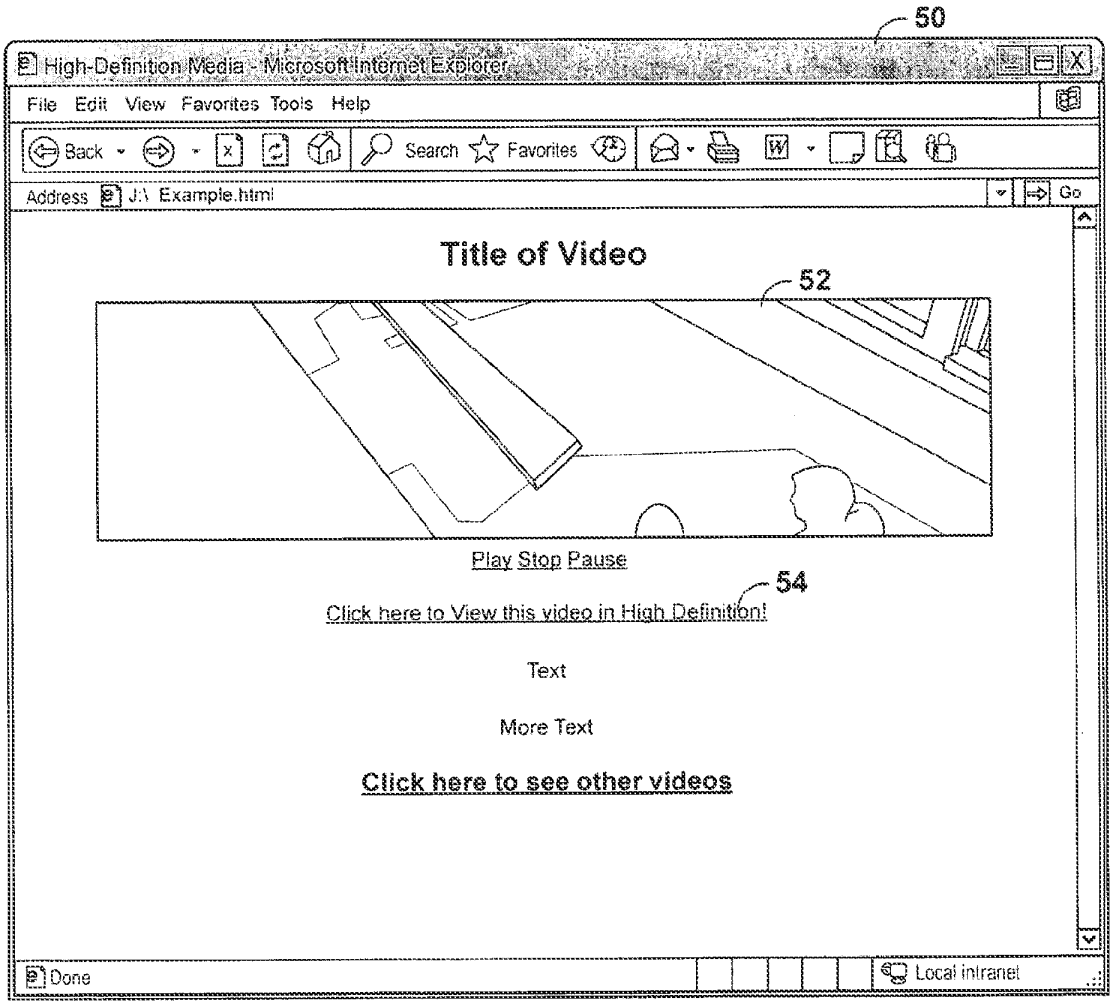
50
High-Definition Media - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
Address J:\ Example.html
Go
Title of Video
52
Play Stop Pause
54
Click here to View this video in High Definition!
Text
More Text
Click here to see other videos
Done
Local intranet

FIG. 3

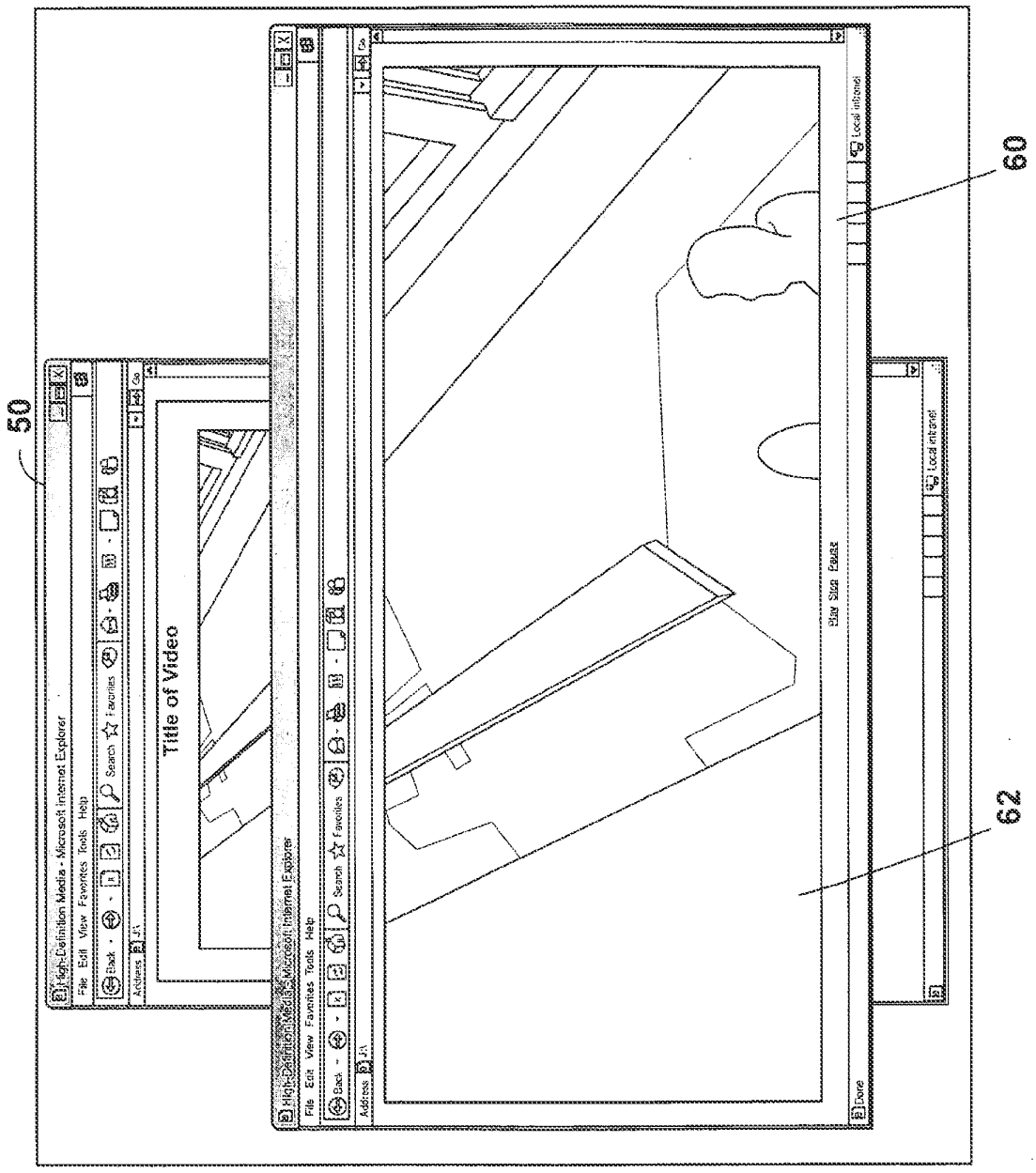
50
60
62
Title of Video
High-Definition Media - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address
Local intranet
Done

FIG. 4

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **CHAPWESKE, Justin, F.** [US/US]; 1668 Rosehill Circle, Lauderdale, MN 55108 (US). **MCKINLEY, Christopher** [US/US]; 3329 17th Ave. S. Apt. 2, Minneapolis, MN 55407 (US).

(74) Agent: **SIEFFERT, Kent, J.**; Shumaker & Sieffert, P.A., 1625 Radio Drive, Suite 300, Woodbury, MN 55125 (US).

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[Continued on next page]

(54) Title: AUTOMATIC CONFIGURATION OF EMBEDDED MEDIA PLAYER

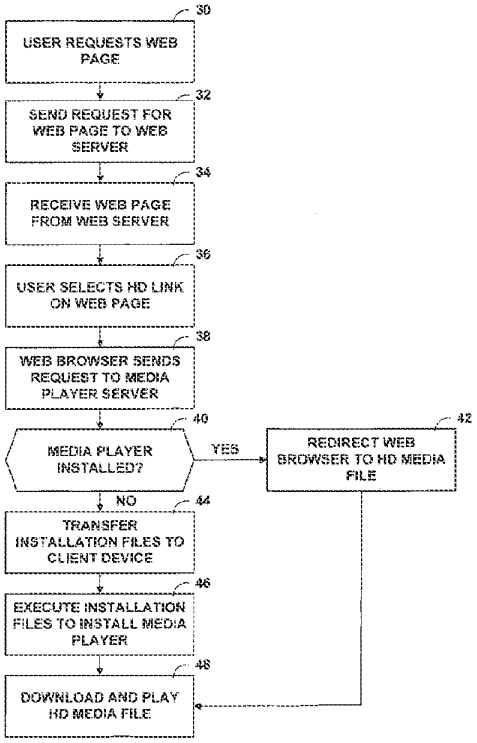

FIG. 2

(57) Abstract: In general, techniques are described of automatically configuring an embedded media player. For example, a user interface such as a web page or a user interface of a media player may include an embedded media file that is to be presented. In addition, the user interface may display an input mechanism that offers a user the opportunity to present a higher-quality version of the media file. When a client device receives the user interface and a user interacts with the input mechanism, a specialized media player is automatically downloaded to the client device. The specialized media player then automatically downloads a higher-quality version of the media file and begins playing the higher-quality version of the media file automatically. The specialized media player may obtain the higher-quality version of the media file using peer-to-peer or other download acceleration techniques.

WO 2008/070050 A3

PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

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---- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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International application No
PCT/US2007/024791

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INV. G06F17/30 H04L29/06 G06F9/445

According to International Patent Classification (IPC) or to both national classification and IPC

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G06F H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	"GET A MAC - WATCH THE TV ADS" TV ADVERTISEMENTS WEBPAGE OF APPLE COMPUTER INC., [Online] 3 May 2006 (2006-05-03), pages 1-2, XP002482272 Retrieved from the Internet: URL:http://web.archive.org/web/20060503182919/http://www.apple.com/getamac/ads/> [retrieved on 2008-05-29] the whole document	1-8, 11-18, 20-22

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Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/093990 A (HEWLETT PACKARD DEVELOPMENT CO [US]) 13 November 2003 (2003-11-13) abstract; figures 1-4 page 1, lines 12-22 page 3, lines 4-6 page 3, line 28 - page 4, line 7 page 5, lines 3-20 page 7, line 4 - page 8, line 30 page 10, line 20 - page 11, line 27	1-8, 11-18, 20-22
X	HOLLIMAN M ET AL: "Improving Media Services on P2P Networks" IEEE INTERNET COMPUTING, IEEE SERVICE CENTER, NEW YORK, NY, US, vol. 6, no. 1, 1 January 2002 (2002-01-01), pages 73-77, XP011094114 ISSN: 1089-7801	1-8, 11-18, 20-22
Y	page 74, left-hand column, line 32 - page 75, left-hand column, line 9 page 75, left-hand column, last paragraph - page 77, paragraph CONCLUSIONS figure 3	9,10,19
Y	US 2004/172476 A1 (CHAPWESKE JUSTIN F [US]) 2 September 2004 (2004-09-02) abstract	9,19
Y	STUTZBACH D ET AL: "The scalability of swarming peer-to-peer content delivery" PROCEEDINGS OF NETWORKING 2005 - THE 4TH INTERNATIONAL IFIP-TC6 NETWORKING CONFERENCE, LECTURE NOTES IN COMPUTER SCIENCE, SPRINGER-VERLAG, vol. 3462, 2005, pages 15-26, XP009100830 ISBN: 3-540-25809-4 abstract; figure 1 pages 16-19, paragraphs 2,2.1,2.2	10
A	KOMAN R.: "The Swarmcast Solution" OPENP2P.COM WEBSITE, O'REILLY & ASSOCIATES INC., [Online] 2 June 2001 (2001-06-02), pages 1-3, XP002482273 Retrieved from the Internet: URL:http://web.archive.org/web/20010602220626/http://www.openp2p.com/pub/a/p2p/2001/05/24/swarmcast_beta.html> [retrieved on 2008-05-26] pages 2-3	10

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2007/024791

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03093990 A	13-11-2003	AU 2003223765 A1	17-11-2003
		EP 1499966 A2	26-01-2005
		JP 2005531049 T	13-10-2005
		US 2003204843 A1	30-10-2003
US 2004172476 A1	02-09-2004	NONE	

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session identifier random

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Session ID

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I'm working on building a user object for a website I'm working on. In the user object, userid and sessionid must be stored into a cookie and ...
www.vbulletin.com/forum/archive/index.php/t-60196.html

Hold Your Sessions: An Attack on Java Session-Id Generation

following procedure. A **session-id** is obtained by taking an MD5 hash over 128-bits generated using one of Java's pseudo-**random** number generators (PRNG). ...
research.microsoft.com/pubs/64680/gm05.pdf

ASP and Web Session Management

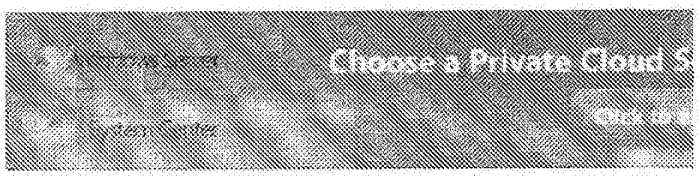
The 32-bit **Session ID** is mixed with **random** data and encrypted to generate a 16-character cookie string. Later, when a cookie is received, the **Session ID** can be ...
msdn.microsoft.com/en-us/library/ms972338.aspx

python - Most secure way to generate a random session ID for a ...

I'm writing my own **sessions** controller that issues a unique **id** to a user ... If the only information in the cookie is an **identifier**, essentially a label, ...
stackoverflow.com/questions/2541742/most-secure-way-to-...

PHP Tutorial: Sessions

The session_start( ) function generates a **random Session Id** and stores it in a cookie on the user's computer (this is the only session information that is actually ...
www.htmlgoodies.com/beyond/php/article.php/3472581/PHP-...



session cookie

Like 6 0 1

Also called a *transient cookie*, a cookie that is erased when the user closes the Web browser. The session cookie is stored in temporary memory and is not retained after the browser is closed. Session cookies do not collect information from the user's computer. They typically will store information in the form of a session identification that does not personally identify the user.

Compare with *persistent cookie*.

Previous Term

Next Term

Related Terms

- cookie »
- persistent cookie »
- user session »
- returning sessions »
- session hijacking »
- session controller »
- Application Session Controller »
- session border controller »
- SDP »
- WSP »
- Web Standards Project »

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Session Object

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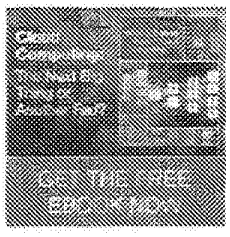

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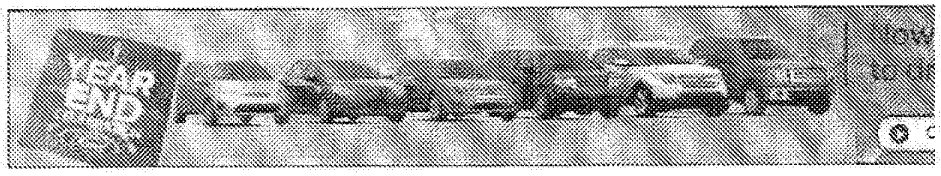

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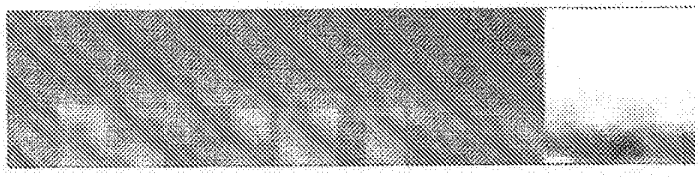

user session

Like 1 0 0

(1) The session of activity that a user with a unique IP address spends on a Web site during a specified period of time. The number of user sessions on a site is used in measuring the amount of traffic a Web site gets. The site administrator determines what the time frame of a user session will be (e.g., 30 minutes). If the visitor comes back to the site within that time period, it is still considered one user session because any number of visits within that 30 minutes will only count as one session. If the visitor returns to the site after the allotted time period has expired, say an hour from the initial visit, then it is counted as a separate user session.

Contrast with unique visitor, hit, click-through and page view, which are all other ways that site administrators measure the amount of traffic a Web site gets.

(2) The period of time a user interfaces with an application. The user session begins when the user accesses the application and ends when the user quits the application.

Previous Term Next Term

Related Terms

user »
session hijacking »
session cookie »
returning sessions »
session controller »
WSP »
Application Session Controller »
session border controller »
SDP »
user agent »
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user group »
user interface »
user defined function »

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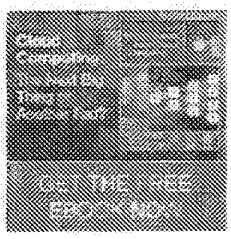

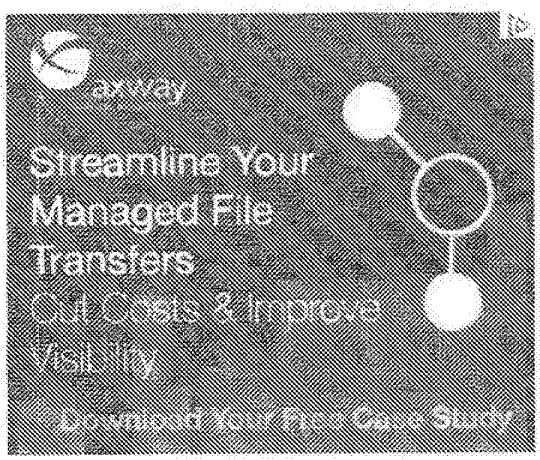

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View Full Version : Best way to generate Random, Unique Session ID's

Lorddraco98 Mon 2nd Dec '02, 9:08pm

I'm working on building a user object for a website I'm working on. In the user object, userid and sessionid must be stored into a cookie and then sent to the user. The userid and sessionid along with info about the user(IP, username, etc) are inserted into a MySQL DB. I'm looking for a way to generate a random, unique sessionid that PHP can make, store in the DB, insert into that cookie, and can also use to look up a user in the DB. So what's the best way to generate a random, unique session ID with PHP??

Gamefreak Wed 4th Dec '02, 4:47pm

use the function uniqid(val$)

the val$ can be blank, but if you put something in there it will have that val$ in the id. After you do that, then put the result through md5(), it will give you good session ids.

Scott MacVicar Wed 4th Dec '02, 8:19pm

Originally posted by Lorddraco98
I'm working on building a user object for a website I'm working on. In the user object, userid and sessionid must be stored into a cookie and then sent to the user. The userid and sessionid along with info about the user(IP, username, etc) are inserted into a MySQL DB. I'm looking for a way to generate a random, unique sessionid that PHP can make, store in the DB, insert into that cookie, and can also use to look up a user in the DB. So what's the best way to generate a random, unique session ID with PHP?? just try and shove as much random stuff into md5, I use the following

```
md5(uniqid(microtime()) . $_SERVER['REMOTE_ADDR'] . $_SERVER['HTTP_USER_AGENT']);
```

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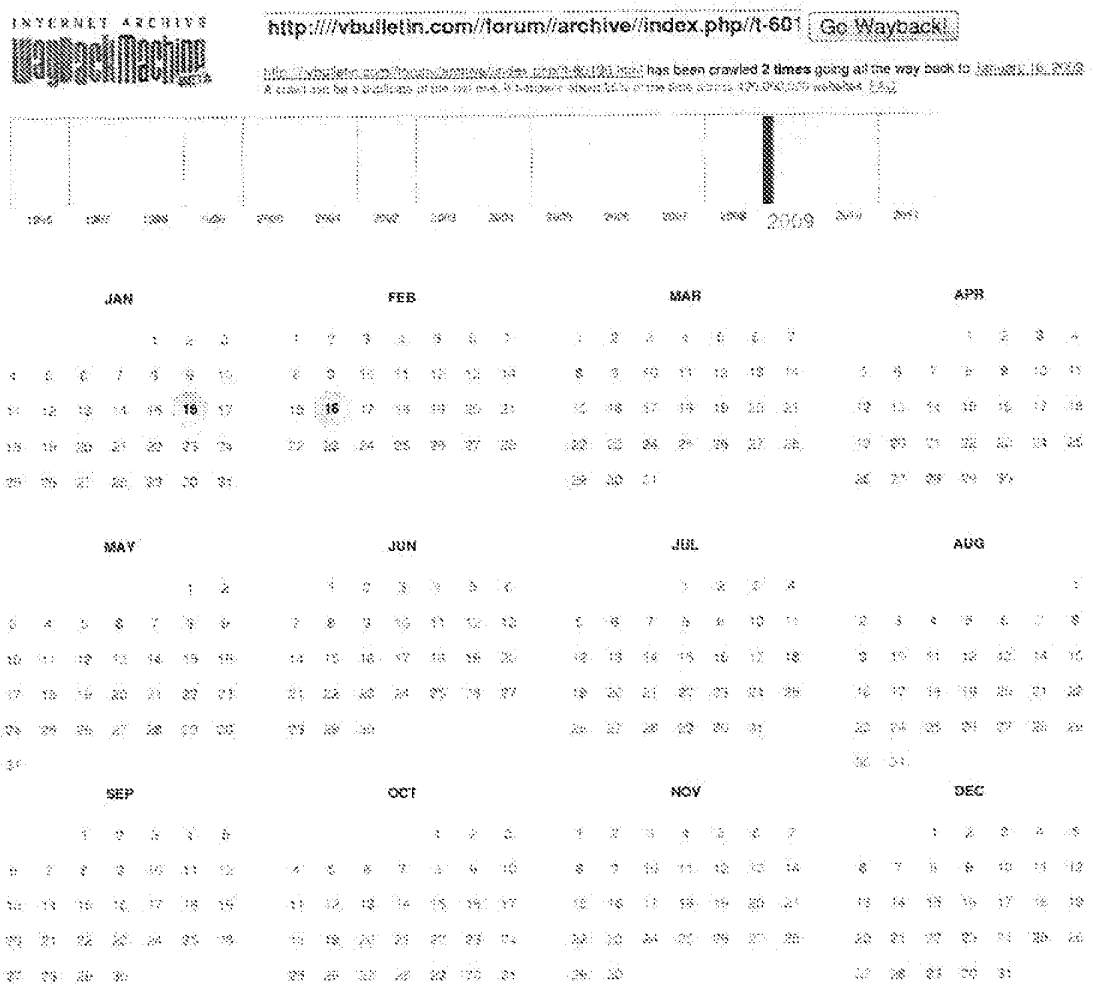

Note

This calendar view maps the number of times http://vbulletin.com//forum//archive//index.php//t-60196.html was crawled by the Wayback Machine, *not* how many times the site was actually updated. More info in the FAQ.

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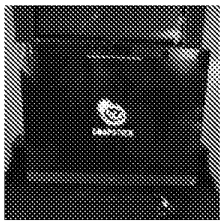
PCMag UK News

Snapstick's Media Streaming App/Box: Hands On

BY MARK HACHMAN 8 JAN 2011, 8:17 A.M.



Right now, Snapstick is everything that Google promised with Google TV, except with its odd little quirky requirement that users "snap" content to a set-top box.

I had a chance to play around with the app/set-top box for a few minutes here at CES late on Friday. I'm impressed with what SnapStick offers - what appears to be full-featured, Web-based content on a television.

For whatever reason - lack of sleep, an obsession with baseball - Snapstick reminds me a fireballing pitcher who interrupts his pitching motion with an odd little hitch as he delivers the ball. The "snap" seems a bit contrived; why doesn't the Web page just open on the device itself? But in my limited time of playing with the device, I couldn't argue with the results.

SEE ALSO: Report: 10th Gen Core i5 Desktop Chip Uses Hyper-Threading

For now, a user needs to own either an iPod touch or iPad, and must download the Snapstick application. Unfortunately, a Snapstick user must also own the associated set-top box, and there's the rub: for now, D-Link has signed a contract for a trial run of the hardware. Still, Snapstick management seemed extremely optimistic that a final deal would be assigned. The target price? Just over $100, which retailers may discount to under that $100 price point very shortly, executives said.

All a
devic
the set-top box. Users don't even have to select a local box; if it's configured correctly, content can be snapped around the world.

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most probably via a wired connection. For whatever reason, the iPod touch app worked well, but the iPad did not; however, the touch's relatively small display size made page navigation difficult.

The user can scroll around the Web page on the touch or iPad, and highlight the area he wants to see on the screen. By default (mostly due to the page design) the most interesting bits are usually found on the top of the screen. In reality, sliding a window around an image of the full Web page probably makes the most sense; it just felt a bit awkward, reminding me of navigating a zoomed-out Web page on a mobile browser and then zooming in to read the text.

Another issue crops up when you want to watch a video in full-screen mode - unfortunately, that requires you to once again find the button or icon on the iPad or iPod touch that orders up the full-screen video. On the touch, it's a frustrating pixel hunt.

With that said, Snapstick delivers the Web to your TV, including video that the content providers inexplicably reserve for only your PC. Hulu seems to work just fine, as did the broadcast sites. That's because Snapstick uses a generic Firefox browser - no self-identification as the Revue does. That means, that to a site like Hulu or CBS.com, the Snapstick appears to be the same as your desktop browser.

Users have a vast and ever-growing number of methods to display content on their TV screens. But few deliver the full Web, or something close to it. So far, the best option remains a notebook connected to the TV via an HDMI cable. But, slowly, the industry moves forward towards convergence. Snapstick's a bit of a rocky road, but it's headed in the right direction.

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SNAPSTICK

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Partners
Sign Up

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High praise for Snapstick

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Hands On: YouTube Leanback

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By Ian Paul
PCWorld |
JUL 9, 2010 9:39 AM PST

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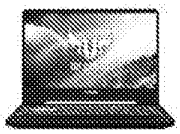
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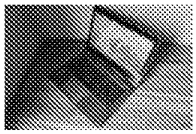
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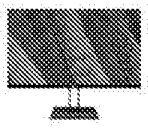
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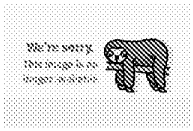
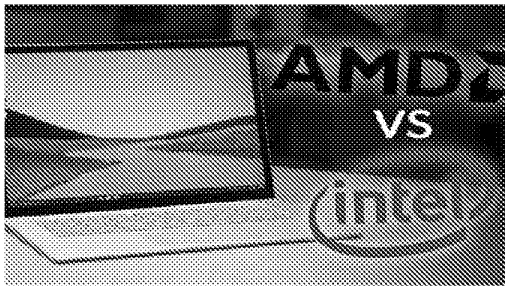


Artwork: Chip Taylor

YouTube's new Leanback service (http://www.pcworld.com/article/200704/youtube_leanback_youtube_that_looks_like_tv.html?tk=rel_news) aims to become a fixture on your television by letting you watch an uninterrupted stream of full-screen YouTube videos in high definition. The beta service decides what to show you based on your YouTube account preferences, and you can use Leanback to watch your YouTube movie rentals obtained through the new YouTube Store (http://www.pcworld.com/article/194935/youtube_opens_rental_store.html?tk=rel_news). Leanback also offers a number of different video feeds organized by category if you get tired of the initial personalized video stream Leanback offers by default.

Here's a quick look at the new Leanback service from YouTube:



(link)

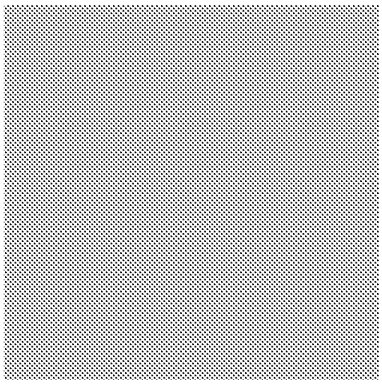
Getting Started

Google says Leanback is meant to be used on large screens like your television so you might want to try this out on a larger screen like your Internet-capable television. To start using Leanback, point your Web browser to youtube.com/leanback (http://www.youtube.com/leanback). If you're not logged into the site with your YouTube or Google account, you will be prompted to sign in before you can start watching videos. If you don't have a YouTube account, you can create one from the sign-in page, and you must have a YouTube account to use the service.

All About the Keyboard

You can set your mouse aside for the moment, because Leanback depends exclusively on your keyboard's directional arrows and the return key to navigate through the new service. If you try to use your mouse, you'll be greeted with the above message.

One tap of the up arrow displays Leanback's search option, hitting the down key once shows you Leanback's playback controls, and a second strike of the down key reveals a filmstrip of all the videos in your current Leanback queue.

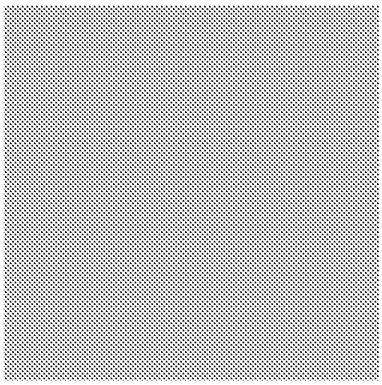


When you have the playback controls on screen, you use the right and left arrows to navigate through the various controls like rewind, play/pause, and fast forward, and you hit "enter" to select the control you want. If you're getting tired of the video you're viewing, you can also use the right and left arrows to move through your Leanback queue. To sort through the entire queue without switching to the next video, first bring up the filmstrip using the down arrow and then navigate to the left or right. Just like on YouTube, hitting the spacebar will pause the video you're watching.

Content

By default, Leanback's content uses what YouTube calls Your Feed to create a queue of videos for you to watch. Your Feed is based on your YouTube subscriptions and past videos you've watched. If you've linked your Facebook account to your YouTube ID, then Your Feed will also include YouTube videos your Facebook friends have shared. In my experience, my feed included a few videos I'd already seen, so just like with real television you may find some repeats mixed in with newer videos.

[Further reading: How to calibrate your TV] (https://www.techhive.com/article/2079503/smart-tv/easily-calibrate-your-new-hdtv.html)

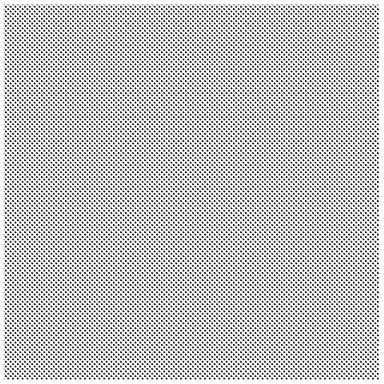


If you get tired of the video choices in Your Feed, just press the down key until you see a horizontal list of different video feeds organized by subject. Leanback has a number of different video categories, including sports, science & technology, film & animation, YouTube movie rentals, how-to videos, and others; for example, cat lovers can check out the Pets & Animals feed. Any YouTube playlists you've created are also included as separate video feeds in this section as are your past searches on Leanback.

Most of the videos Leanback shows you are fairly good quality and should look fine on your television set. Nevertheless, this is YouTube -- so expect to see a few low-quality images in the mix, especially when viewing videos contained in Your Feed and when using the search feature.

YouTube Leanback vs. Clicker

At first glance, Leanback appears to have some similarities to Clicker.tv (http://www.pcworld.com/article/182092/clicker_handson_web_potatoes_you_need_this.h you discover online video content.



Both services are trying to create a better viewing experience for Web-based videos and both offer a slick, full-screen experience. But that's where the similarities end. Unlike Leanback, Clicker is focused on delivering premium content including television episodes, movies, and Webisodes such as ABC's Lost: Untangled (http://abc.go.com/shows/lost/lost-untangled). Clicker also directs you to content on other sites and services including Netflix, Amazon VOD and network television sites such as ABC.com.

YouTube's Leanback, meanwhile, is only for YouTube content and that's it. So while you may look at Leanback and be reminded of Clicker's interface, the two sites really function as complements to each other. You can search for YouTube content on Clicker.tv if you want to, but if you want the complete YouTube experience, then Leanback is really the better choice.

Leanback is just the latest attempt by Google to bring online video into the living room. In 2009, the site introduced YouTube XL (http://www.youtube.com/xl), a version of the regular YouTube site optimized for your living room television. Later this year, Google will launch Google TV (http://www.pcworld.com/article/196794/google_is_headed_for_your_tv.html?tk=rel_news), an Android-based platform baked into set-top boxes and Internet-connected TVs that is meant to merge the Web and regular television.

Connect with Ian on Twitter (@ianpaul (http://twitter.com/ianpaul)).

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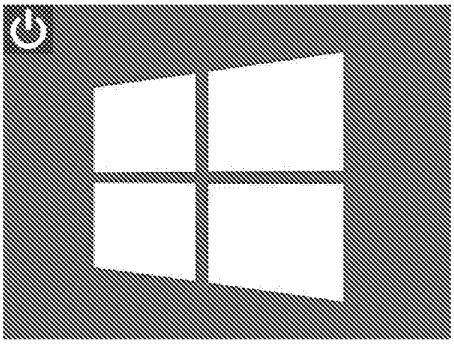

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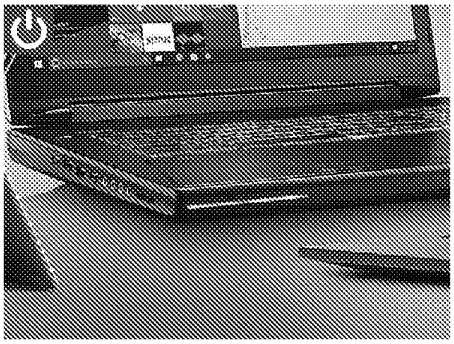

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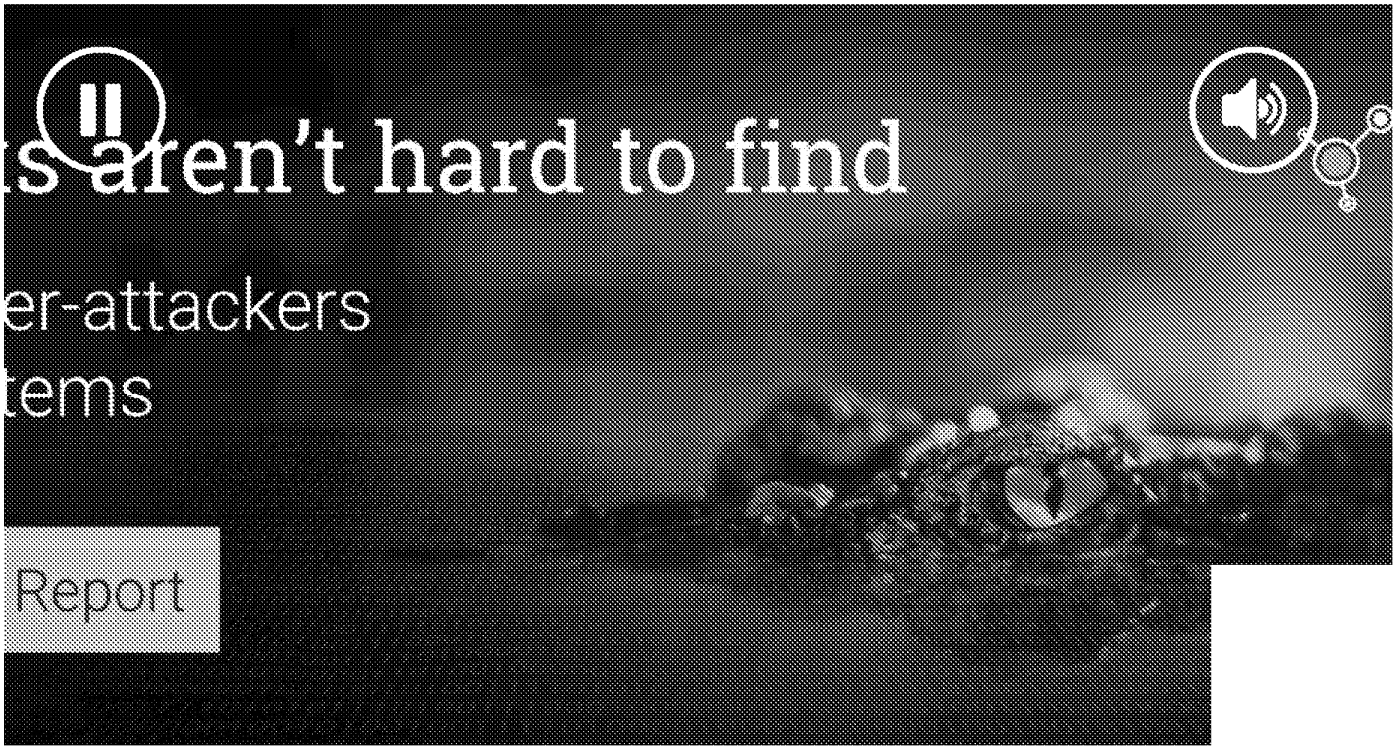

TECH —

Stream AirPlay video to a regular TV?

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Apple may get into the TV market after all, but not like previous rumors have ...

JACQUI CHENG - 3/23/2011, 3:22 PM

Apple may be preparing to license its AirPlay technology to allow third-party TVs to receive video streams from iOS devices. *Bloomberg* outlined a plan supposedly in the works at Apple on Wednesday, saying that video devices that could play streamed video via AirPlay could hit the market as early as this year, citing two unnamed sources familiar with the project.

AirPlay is Apple's recently reintroduced technology (previously called AirTunes) that allows a computer's iTunes library or an iOS device to stream photos, video, and music to a compatible device. Currently, Apple offers licenses to a number of audio system manufacturers so that users can stream music to a set of speakers, but the only device available that can receive AirPlay *video* streams is the second-generation Apple TV.

According to *Bloomberg*'s sources, Apple is considering adding video licensing to the mix so that third-party devices can receive streams of TV shows, movies, and other A/V clips. Companies selling

AirPlay-compatible audio equipment would reportedly pay Apple $4 per device sold, so a Web-enabled TV might cost a bit more if manufacturers want to add AirPlay to their feature lists. The sources also said that Apple's AirPlay chip vendor, BridgeCo, is "working with several TV makers to build its products into Web-connected TVs," though they didn't specify whether those plans involved AirPlay or some other technology.

There have been long-running rumors that Apple might one day roll out its own Internet-connected TV—thanks mostly to buzz created from analysts—but such an idea has largely been panned by most observers. However, an AirPlay video licensing deal would move the risk of getting into the TV market from Apple to manufacturers, while still allowing the company to make money from it (not to mention the potential for extra iPhone, iPod touch, and iPad sales).

Apple declined to comment on the rumor.

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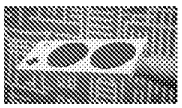

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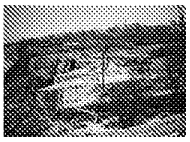

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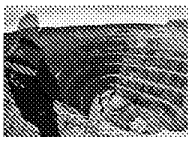

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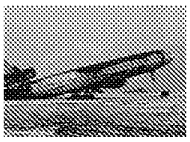

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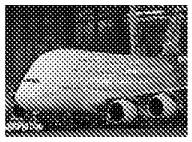

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Ad Choices

Dual Device User Interface Design for Ubiquitous Language Learning: Mobile Phone and Interactive Television (iTV)

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Abstract

In this paper we describe the design and development of a system that facilitates language learning from a combination of two devices, interactive television (iTV) and mobile phone. We present a number of requirements for technologies to support informal language learning based on theories of language learning, theories of formal and informal learning, our own studies of adult language learners and the affordances of iTV as a medium to support learning. We describe TAMALLE (Television and Mobile phone Assisted Language Learning Environment), , a prototype system based on these requirements and discuss some of the user interface design issues that arise in the context of cross platform dual device systems for ubiquitous learning.

1. Introduction

The possibility of using "non-desktop" technologies for supporting learning opens up a wide variety of activities and interactions for learners. The potential for technologies such as mobile devices (m-learning) and interactive television (t-learning) for learning has provided a new direction for research in the field of educational technology. In particular, designing for these new technologies has thrown up a number of design challenges associated not only with the physical and functional limitations of these devices, but also with the effective implementation of new learning paradigms - situated, collaborative, life-long, personalized and contextual [1,2,3].

"Beyond the desktop" technologies are currently being harnessed to support these learning paradigms. However each technology has distinct characteristics that facilitate some types of use and hamper others. For example, whilst mobile device afford a wide variety of personal activities and learning on move, they are less powerful for enabling learning from authentic and immersive content. In contrast, television provides rich multimedia presentation of authentic and immersive content that is constantly renewed. Programmes such as news, soap-operas and documentaries have the potential to enhance language learners' experience by showing the target language, culture and context of use. However, iTV does not naturally provide facilities for personalised learning or learning on the move in the way that mobile devices do. Designing in order to take advantage of what each device does best is the primary focus to the TAMALLE project.

Despite Robertson et al's pioneering CHI paper discussing coordinated iTV and PDA interaction [4], little is known about dual device interaction in general or about such interaction in the context of educational technology applications in particular. In this paper we concentrate on the design and development of the interfaces for a dual device system for informal language learning. The system aims to capitalise on the strengths of two specialised technologies, iTV and mobile phones, which tend to be used in different settings and at different times. We first briefly overview the existing literature on mobile and iTV technologies for language learning. We then discuss briefly the first stage of the project, learner-centred negotiation of requirements, for developing ubiquitous language learning, which led us to the design and development of the TAMALLE system, whose technical architecture is sketched. The interfaces for the two devices are then described.

2. Mobile technologies for language learning

The potential value of learning via mobile devices or m-learning has been widely realised [5, 6]. Mobile devices enhance learning experiences by enabling communications, learning on the move, and on an "anytime and anywhere" basis [7]. For language learning in particular this realisation also holds true. Second Language learners currently are often to be found with a pocket dictionary or a personal vocabulary book. As a result several researchers have

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begun to investigate the potential of mobile devices for language teaching [8, 9, 10, 11].

Godwin-Jones points out how mobile and wireless technologies could provide an opportunity for language and cultural learning. He describes a project to develop wireless system called RAFT that can be used on student's field trip. RAFT helps an individual to store and retrieve information regarding their field trip on their handheld mobile device and to share it with other learners. Although RAFT was not specifically designed for language learning, its developers suggest that it could be used for cultural and language learning by learners who are on a trip abroad, e.g. to conduct interviews with native speakers, and to share it with other learners [10].

The AD-HOC project aims to develop mobile language learning environment to facilitate 'learning on demand' for European travellers who want to acquire language skill in order to communicate with local people. The AD-HOC system acts as a tutor to teach linguistic and cultural knowledge through the use of multiple media presentations (e.g. text, sound, picture and video). The language learning environment offers representations of contextualised, authentic, real life situations for different level of competency and within different thematic fields (e.g. business travel, travelling of young people, etc.).The underpinning pedagogical principle of the AD-HOC project is self-directed learning [8].

The M-learn project is concerned to develop a mobile learning system for young adults (16-24) in order to teach some aspects of literacy and numeracy, and to involve them in the development of their lifelong learning [12].

The mobile language learning system, designed in Finland [9], delivers lessons using sound and text to teach grammar and vocabulary. It tracks the learner's progress and integrates voice technology for user interaction.

BBC Worldwide provides an English language teaching service via mobile phone in China. Learners receive a daily text message on their mobile containing a phrase in English together with the Chinese translation. A range of topics are covered (e.g. sport, business, lifestyle, etc.). The idea behind the system is to provide an opportunity for busy learners on the move to learn authentic spoken English [13].

A project conducted in Taiwan developed a mobile-based (PDA) interactive language learning environment for elementary school children learning English as a second language. The activities aimed to help students to learn listening, reading and writing skills. For example, a scenario to teach words related to images showing a body parts provides a word's pronunciations and spelling when the image is clicked by the user. Evaluation showed a positive response from learners and indicates that the use of mobile devices can significantly increase student motivation and interest [11].

The Speak My Speak project is investigating the use of SMS (Short Messaging Service) as a communication tool between adult English language learners and native English tutors. They conclude that using SMS in language learning is feasible and promising students did reflect on texts sent and received, and were active in constructing the content of communication [14].

MobiLearn software provides a mobile phrase book in different languages for pocket PC. The main aims of the software are to provide a list of common words and phrases, to enable learners to bookmark their required words and phrases for easy access, to hear pronunciations and to test their knowledge through a number of quizzes provided.

The INLET project (Lingua) developed an innovative mobile phone support system to encourage tourists to learn Greek language at the Athens Olympic Games 2004 [15]. The system provided a number of facilities for learning useful Greek phrases in a just-in-time manner. Language categories judged most beneficial for tourists were developed as follows: "basic" (e.g. greeting, numbers, basic words), "where" (e.g. phrases for asking direction, going by bus, taxi and trains), "when" (e.g. asking times, today, now, tomorrow), "Olympic Sport" (games name, athletics, fencing, etc.) and "buying" (asking price, money, expressions like expensive, cheap, etc.). Users, recruited at the airport in many cases, were able to register for SMS messages to be sent to their mobile phones freely and regularly containing useful phrases. They also could request SMS translations of other languages into Greek.

3. (I) TV for language learning

ITV is a new media technology that has great promise for language learning [16, 17, 18]. Before turning to interactive TV it is worth considering television which itself is *already* a powerful learning environment for language learners. Television offers a rich multimedia experience, where learners can immerse themselves in authentic materials from the target language and culture. This material may well be engaging in itself, with up-to-date ever-changing content displaying a range of speakers and contexts. Many television shows constitute important cultural events in their own right providing a shared reference for people sharing or aspiring to share a culture. In its non-interactive state, it clearly affords watching, reading and listening, making it an excellent medium for learners to practice comprehension skills and also to acquire background cultural knowledge.

Comprehension of spoken material is strongly supported. Sherrington [19], exploring the potential of conventional television for language teaching, notes that a number of listening skills can easily be practised via television, including recognising and understanding:

- Segmental and supra-segmental features
- Vocabulary items, short phrases and longer segments of speech
- Syntactic structures
- Varieties of speech, such as registers and dialects
- Discourse patterns
- Pragmatically determined features

Lonergan points out the benefits of viewing TV programmes in the target language, particularly TV's multimedia aspect: "the suitability of television as a medium for bringing a living language to learners is undoubted. The dynamic combination of sound and vision can bring an air of reality into the classroom. The wealth of visual information available can convey the atmosphere of another culture, can show paralinguistic aspect of communication; the techniques of television can present material to learners in ways quite beyond the resources of the language teacher" [20].

One disadvantage of TV broadcast over video or DVD is its "non-interruptible quality" where it restricts learners from replaying the information available [21, p.3]. Broady points out that one of the problems associated with target language TV is that the foreign language learners are not aware of the required background knowledge – something she refers to as "cultural knowledge" - that needs to be acquired in order to understand the programme. She discusses the notion that a situation can be misunderstood by non-French viewers when the accompanying image does not support interpretations of the "verbal input" in watching a French News channel. She further argues: "because it [television] conveys 'real' language used by 'real' people in 'real' situation, it is generally perceived as motivating and interesting by learners. Yet this very cultural authenticity can render it frustratingly obscure. But is this a 'real' problem?". She latter mentions that "non-native viewers are not the only ones whose understanding is impaired when picture and commentary do not correspond closely: it happens to native viewers too." [21, p.4]. One problem that non-native speakers sometimes have is that they "often lack the confidence…and assume that they need to understand every word. With such strategy, the richness of authentic television are likely to remain buried." [21, p.5]. For this reason, a number of researchers attempt to develop "viewing strategies" that could be used by learners when watching authentic television. These strategies explain how to maximize comprehension of foreign TV viewing [22].

Several projects [23, 24, 25] have analyzed the use of TV with first language subtitles (L1 subtitling) and second language subtitles (L2 subtitling), as an aid to comprehension, retention of second language vocabulary and improving reading skills. One such study suggests that even TV with an L2 audio track and L1 subtitling could lead to incidental second language learning [22]. Fridman argues for closed captioned videos as powerful tools for improving vocabulary and reading comprehension skills for EFL learners. Bean & Wilson report the motivating influence of captioned television, and positive attitudes on the part of learners toward this medium [26]. Neuman and Koskinen suggest [27] that captioned television can be used as an effective instructional tool in learning vocabulary and concepts. Koskinen et al. studied the effect of captioned television on incidental vocabulary acquisition by adult ESL learners. They assessed vocabulary knowledge of viewers who watched TV with and without captions, identifying "a statistically significant difference in favour of captioned TV" and "a positive relationship between oral English language competency and vocabulary learning". The participants with higher levels of oral proficiency learned more than less proficient subjects [24, p.368].

Borras and Lafayette investigated the effect of L2 subtitles on comprehension and reading skills. They compared the performance of learners who had used video with and without subtitles. The result clearly favoured the subtitle option and they conclude that "when learning from 'authentic video' in a multimedia environment, having the opportunity to see and control subtitles, as opposed to not having that opportunity, result in both better comprehension and subsequent better use of the foreign language" [28, p.82].

Digital television adds a new dimension to learning from the TV by multiplying available channels [22, 29]. However, this is an increase in the quantity of available material rather than a change in the type of affordance provided by the medium. It is essentially more of the same. Digital interactive television (iTV) offers genuinely new ways of using the television set. Interactivity adds new facilities for information retrieval and communications [30]. With interactivity viewers could:

I. Select from alternative audio/ video streams
II. Make their own choice amongst subtitling or captioning options
III. View supplementary information on screen – to access before, during or after a broadcast
IV. Use communication tools such as chat /email.

The functionality provided by iTV is similar to that provided by the Internet, but it is displayed on the

familiar TV screen. Despite the fact that current levels of interactivity are relatively limited, constrained by the components of the iTV set up, i.e. the set-top box and its software, the on-screen display and the remote control, the potential is clearly vast.

4. Learners' requirements

To inform the design of the iTV language learning system, we conducted three focus group studies to investigate the approaches that a number of independent adult language learners have adopted towards their language learning and their attitudes towards a range of technologies including iTV and mobile phones [1, 2, 36]. A set of general requirements emerged:

- Support informal learning rather than formal
- Support learning in context
- Support learning while immersing into the environment
- Support learning from engaging and authentic materials
- Support learning on move (anytime and anywhere basis)
- Support learners understanding by scaffolding
- Support learners in creating and managing their own personal knowledge and sphere
- Provide a support for just-in-time learning
- Support learning in an unobtrusive fashion (by not introducing a new device or imposing educational materials on fellow viewers)

5. Prototype description

The prototype of dual device language learning support system via iTV and mobile phones (TAMALLE) was designed based on the requirements outlined in Section 4. TAMALLE is an informal language learning environment that has dual interfaces across iTV and mobile phones and can support learning from authentic television programmes such as news, soap-opera, documentaries, etc. A dual language learning sphere on both iTV and mobile phone devices allows learners to incorporate edutainment with their language learning experiences. To this end, the system provides support for comprehension of specific language items for viewers as they watch a foreign language television programme that is pitched at a level slightly above their current level of language competence. These language items can be incorporated by learners into their learning sphere, which is also accessible via their mobile phone.

TAMALLE is also a context aware system, in that the mobile sphere supports learning in the context of the TV programme. The television provides authentic materials and a context for learning. The mobile can scaffold learners' understanding of the programme by enabling them to access the summary of programme as well as difficult language items, such as vocabulary, phrases, etc that may appear inside a programme. These language items can be accessed prior to, during and after the show. Learners are also enabled to add, search and remove these language items from/into their personal spheres. Even without television, the mobile is still useful as tool for learning a new language items and as a tool for managing personal knowledge.

Annotation based support is provided to scaffold difficult language items and culturally specific knowledge that helps learners in understanding the programme while watching. If more unknown terms were found, the TAMALLE dictionary could help to check meaning and giving examples. Section 5.1 discusses the technical architecture of TAMALLE and section 5.2 describes TAMALLE dual interfaces.

5.1. Dual device architecture

We have investigated two possible end-to-end solutions based on a multi-tier client/server architecture consisting of the broadcast-end tier, the back-end tier and front-end tier for developing the language learning service.

One solution is to develop a learning management system that can be located in the broadcast-end or back-end tier. This learning management system provides content to both set top box and mobile devices and also holds learning content or learning objects in a database on the back-end tier (MySQL). In the front-end tier we have the set top box and WAP enabled mobile devices. Two way communications can be established between set top box and back-end tier through telephone modem, ADSL or broadband cable, while mobile phone devices communicate with the back-end tier through the WAP protocol. For interactive SMS messaging, we can use SMS gateway providers; the one that we are using in UK is SMS2mail provider. This architecture is illustrated in Figure 1 and for TAMALLE development we used this architecture.

An alternative solution is to use Digital Video Broadcasting (DVB), Java enterprise solution and Bluetooth [31]. The language learning content and mainstream television programme can be encoded and multiplexed before being broadcast via the DVB stream. The learning content will be retrieved by a client based Java application located in an MHP based set top box that also provides the API required for content retrieval and presentation to the mobile devices.

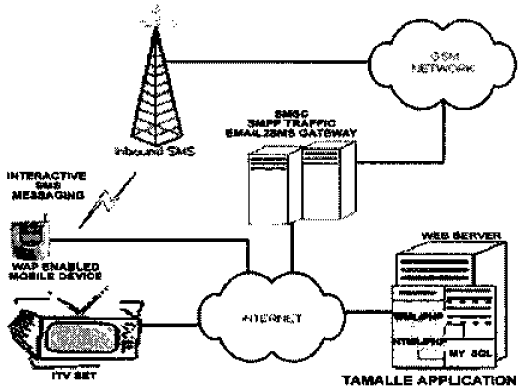

Figure 1: TAMALLE dual device architecture

5.2. Dual device interface

Our design of the prototype interface had five aims:

I. to use the specialised device most suitable for the learning task in question;
II. to use the appropriate physical characteristics and learning affordances of each device both alone and in combination;
III. to support individuals as well as group of learners who may or may not be interested in learning;
IV. to allocate learning content to a device that will be most suitable for providing a particular mode of presentation;
V. to provide consistency in terms of look (navigations, icons, words) and feel (learning tasks, activities and contents) across dual devices to ease the learnability of the overall system.

ITV was combined with mobile phones rather than other portable devices, such as laptops or PDA. Viewers are already using mobile device to interact with iTV applications, i.e. SMS voting, playing along a quiz show. Mobile phones could play the role of a companion device that has some specialised features [32], which may offer more personalised learning materials for people who are sharing the television.

Technically both iTV and the mobile are capable of displaying and manipulating learning materials, which in this case are television programmes and accompanying textual annotations or other information. However, each device is different in terms of their strength. It becomes clear that we need to study the capability of each device for supporting a learning task. For example, television is more appropriate for delivering picture, videos and audio materials, especially in combination. Mobile phones are suitable for displaying text and some graphics. Thus in our dual device scenario, iTV is preferred for taking care of presentation of videos, photos, spoken and textual materials where the mobile phones augment that with more textual information and annotations.

There are other issues concerning the physical characteristics and limitations of each device, such as screen size, resolution and memory capabilities, which constrain the user interactions possible. ITV users are limited to a menu-style interface with navigation and action carried out via the remote control or in some cases with an infrared keyboard. The remote control offers interaction via coloured key (red, green, yellow and blue); numbered keys (0-9), arrow keys (up/down, right/left) and an OK action button. The screen interface is similarly constrained. We followed guidelines developed by the BBC to decide about factors such as font style, size, contrast and positioning [33, 30].

Interaction styles with mobile phones are also limited in various ways: small screens (i.e. amount of data that can be displayed on one screen, as well as the size and placement of graphical, textual elements and navigations), soft key use (soft keys for selection and navigations are different in many phones) and memory constraints [37]. In designing TAMALLE, these constraints are tackled mainly by simplifying navigation, making navigation controls very salient and minimising the navigation depth. This is in keeping with the "simple and shallow" notion that requires minimizing the number of screens while keeping an appropriate amount of scrolling, balancing breadth and depth, therefore improving the usability and learnability of overall system [34].

In the following section we describe the main functionalities of TAMALLE and show how these are displayed and used on iTV and mobile phones. Four types of functionality are described: 1) scaffolding difficult language items, 2) scaffolding overall understanding, 3) just-in-time scaffolding and 4) managing personal learning sphere.

The TAMALLE application on the iTV side is activated by using the conventional "call to action", i.e. pressing the red button on the remote control, while watching a programme. From this point the viewer sees the news streamed into the TAMALLE application. Login is offered but not obligatory for non-personalised services. The broadcast programme appears reduced on the right side of the screen with interactivity on the left. For mobile use, learners are required to use a WAP enabled mobile phones to connect to the TAMALLE mobile application. Both interfaces are illustrated in Figure 2.

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Figure 2: TAMALLE main menu

5.2.1. Just-in-time scaffolding. The system provides just-in-time help for difficult cultural or language items as they appear in the programme. By pressing "Words in Action" from the TAMALLE main menu the just-in-time support will be activated providing textual annotation similar to subtitles on the television screen. The individual items may explicate a word (e.g. Tory = Conservative) or identify a scene or individual (This is 10 Downing St – the Prime Minister's residence). The reason that our design locates the call-to-action dialogue on the iTV side rather than the phone is due to the fact that this just-in-time scaffolding will be only beneficial during the programme show time and not before and after. However, a mobile can augment just-in-time support while watching with other fellow viewers who may not be interested in learning a language. The learner may not want to impose annotations on everyone in the room. In this case, they can send a text message to service whose number is displayed briefly on the television screen to get just-in-time scaffolding on their mobile phone (see Figure 3).

Figure 3: Just-in-time scaffolding

5.2.2. Scaffolding difficult language items. Difficult or unusual language items from the dialogue or commentary will be transcribed for TAMALLE viewers. Viewers who are logged in may select "Recommended Words" to see a list of language items with explanation that can also be added to their personal learning sphere (My TAMALLE), which is also accessible via mobile phone (see Figure 4). The main interaction with the TAMALLE application on the iTV side is by remote control, with the red key taking them to the home page, the yellow key leading to the previous page, and the blue key to exit the application. The arrow keys move the selection up and down the list, while the Select key allows adding a chosen word to a learner's personal sphere. On the mobile interface, a selected word is highlighted and could be added by pressing the handset's select key.

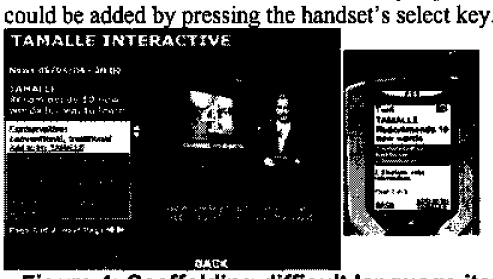

Figure 4: Scaffolding difficult language item

5.2.3. Scaffolding overall understanding. The viewer's overall understanding will be improved by providing a summary of programme content. This will differ according to genre, with the news being summarised as headlines, a drama as a brief plot summary and so on. This is accessed via "Summary/Digest" on the main menu.

This is augmented by an on-screen dictionary. In the following screenshot, a news digest is provided on the left hand side of TAMALLE iTV application, activated by the green button on the remote control. The mobile phone version also provides a link to a programme summary that can be accessible before, during or after the show and on move. Again this is augmented by a dictionary.

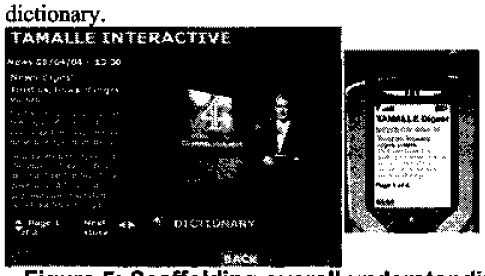

Figure 5: Scaffolding overall understanding

5.2.4. Managing personal learning sphere. The system enables learners to manage their personal "learning sphere," accessible via iTV and mobile interface. The recommended words can be added to a personal vocabulary list for later practice. Learners can view all their saved language items from the main menu. They can also search for specific language items and remove those no longer wanted. Figure 6 shows "My TAMALLE" on both iTV and mobile device.

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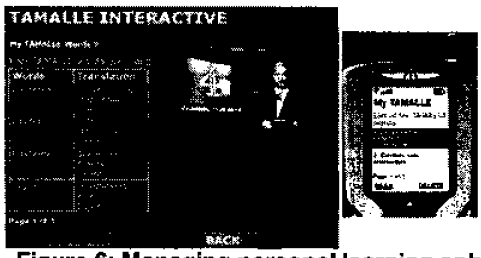

Figure 6: Managing personal learning sphere

6. Discussion

In this section we explain some of the reasoning behind the design decisions. Simplicity and consistency were our ultimate criteria in designing TAMALLE. Simplicity is imposed by the constraints of the two devices, while consistency, both internal and external, will make for ease of use and learnability. To this end, the mobile phone version of the system can follow the conventions of the phone on which it is viewed.

This design solution is not the only one possible: another team could start with similar requirements and ends up with quite a different set of choices for functionality and interaction design. The chosen design was very much influenced by the research of Al-Seghayer [35] who demonstrates significant improvements in language comprehension and incidental learning where a combination of media - audio, annotated text and video - were used.

For navigation and function activation, the iTV system has been designed to make user interactions as simple as possible using appropriate coloured and numbered keys of the remote control. Each menu item also has a numerical label allocated to it, giving an alternative selection mechanism. The navigation throughout the system is also consistent using coloured controls at the bottom of each page: Home (red), Back (yellow), Exit (blue). From the mobile phone interface the learners can move up and down the list of menu options using the direction keys and use the right and left soft key to choose a required option. The back button in mobile interface is consistent throughout the pages and always takes the learner to the previous page.

Media choice may also be worth commenting on. The justification for providing text annotations for just-in-time support was research by Koskinen et al. showing that combined video and textual annotation of spoken language in a from of subtitle or closed caption could aid learning vocabulary, improving listening, comprehension and reading skills [27, 24].

The decision of whether to display video on the mobile phone, on the other hand, was based on our understanding of the affordances of the device. Despite the fact that, with the advent of the DVB-H standard, television can also be viewed on mobile phone screens, the physical limitations make this a much less attractive option for providing all the TAMALLE functionalities required for language learning. Television clearly affords watching more than the mobile phone. People already have a very well established relationship with their television set, which we have chosen not to disrupt. Television is the device of choice for viewing broadcast video, while the mobile phone, on the other plays the role of a companion device that is also functional as a stand-alone to support learning on the move.

7. Conclusions and further work

The TAMALLE design responds to the requirements we derived from multiple sources. Learning from engaging, up-to-date and authentic materials that are of intrinsic interest to language learners is enabled. Learning in context is made possible, with rich multimedia content providing a comprehensible setting for the new language. Learning on the move is supported, while the leisure use of television is respected. Learners can also choose to take advantage of one device without the other. The scaffolding learning opportunities can aid in acquiring lexicon items and to improve learner's comprehension and listening skills. The textual annotations can facilitate just-in-time support for learning cultural specific knowledge and difficult language items. Finally, TAMALLE supports learners in creating and managing their own personal language knowledge accessible in anytime and anywhere basis.

However, the design of TAMALLE as a dual device learning service raises a number of questions to be addressed in further research. A first question regards the source and nature of the support material. Ideally we would have liked to find guidance in the language teaching literature on selecting individual words or phrases for attention. However, little practical guidance is available to help us make a reasoned choice. Without such rules or guidelines, automating the functionality of TAMALLE, which would be necessary if it is to be widely used and sustainable, will not be possible. In addition, it may well be useful to tailor this support material to the learner's level of competence, motivation, experience and so on. We are currently conducting experiments with language learners to try to derive guidelines in this area.

A second set of issue is concern with the methodology to evaluate the dual interface devices such as TAMALLE and its implications for learning. At the moment we are considering evaluating the system in terms of its usability but will need to develop new techniques tailored to the dual device scenario.

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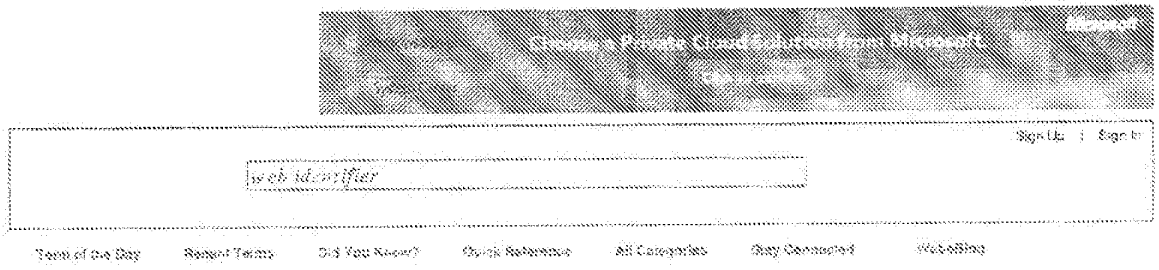
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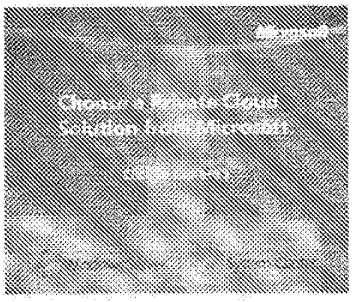

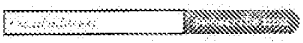

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Mobile Media Content Sharing in UPnP-Based Home Network Environment

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Many modern handheld devices feature functions of taking pictures, shooting video clips, or recording audio sounds. However, such devices are usually equipped with small display panels and poor acoustic equipments. In order to achieve better user experience with high quality panel or audio stereo, users often need to transfer or copy digital media contents to external powerful devices, like personal computers and home theater devices. Nevertheless, it can be awkward or difficult for users to follow up a series of operations of connection setup and media content transfer. In this paper, we present a mobile media content sharing mechanism based the UPnP framework and wireless communication technology in home network environments. As a result, users could conveniently share media contents stored in mobile devices and play them by other home networked player devices. The demonstration result shows that the developed mechanism is attractive and of practicability and ease of use.

Keywords: content sharing, mobile application, multimedia service, handheld device, Universal Plug and Play (UPnP), home network, mobile computing

1. INTRODUCTION

More and more mobile handheld devices, such as mobile phone and personal digital assistant (PDA), are equipped with digital still camera (DSC), audio recording and audio video (AV) processing modules, with that users can take pictures, shoot video clips, or record audio sounds conveniently and effectively. Notwithstanding, due to intrinsic dimensional limitation and power consumption concerns, such devices have smaller display panels and powerless AV playing functions. To enjoy media contents with high performance and quality, users often need to copy or transfer media contents to other external, powerful and professional player devices instead, through complicated manual setup steps with various data cables or connectors – ordinary content transfer operations which are troublesome and unfriendly for end users, empirically.

To mitigate such a circumstance, many research and industrial communities have contributed to realize the digital home vision. Among others are the Digital Living Home Alliance (DLNA)[1] and the Universal Plug and Play (UPnP) Forum[2]. The DLNA interoperability guideline [1] recognizes the UPnP device architecture [2] as the core network-

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[1] Digital Living Home Alliance (DLNA) website: http://www.dlna.org/.
[2] Universal Plug and Play (UPnP) Form website: http://www.upnp.org/.

ing framework used to develop interoperable home networked platforms and devices in home network environments. Particularly, the UPnP framework defines a base set of services for all home networked devices to follow, and conventions for describing devices and services. It is established on the top of IP layer, and leverages existing Internet standards, including TCP/IP, HTTP and Web technologies, to enable peer-to-peer proximity networking, device discovery, event notification, control action, and data transfer functions. Namely, it is independent of operating systems (OS) and hardware platforms. It can work with any type of physical-layer networking medium, in spite of wired or wireless one.

The increasing popularity of the UPnP technology makes clusters of networked devices, such as PC, entertainment equipment, and intelligent appliance, interconnected in home network environments. Hence, substantial interest in research and industrial communities comes into the examination of UPnP methodologies and performance [3-8]. It is noted that the UPnP architecture has a light-weight design and is of simplicity without complicating the system design. Unfortunately, there are still several shortcomings and problems found in different function layers, including problematic addressing transition [8], inefficient UPnP advertisement and power consumption [4], non-scalable M-Search [5], inflexible control action [6], and poor event notification [3, 7], which will be later described in section 2.3.

Over the past years, our work developed a UPnP middleware which successfully passed the UPnP Implementers Corporation (UIC) conformity [9] and was incorporated into BenQ™ home entertainment devices, for example, network TV. In this paper, we describe the design and the development of a mobile media content sharing mechanism in UPnP-based home network environments. We integrate the WLAN technology into the UPnP middleware, and noticeably implement an interesting mobile content sharing scenario on a specific mobile phone platform. In compliance with the DLNA interoperability guideline, we develop a mobile media server which is able to discover, interconnect with, and transfer media files to other UPnP-/DLNA-compliable devices. Accordingly, our developed mobile phones and home networked devices can communicate with each other through UPnP networking. Mobile phones can serve as "temporary" mobile content servers at any time they want to share stored media contents to be processed directly on external media player devices. As a result, users can conveniently and effectively share their favorite media contents anywhere and anytime, without need of unfriendly manual operations of connection setup and data file transfer, in a home network environment where the proposed mechanism is deployed.

The rest of this paper is organized as follows. Section 2 describes background knowledge, potential issues and related works about the UPnP technology. Section 3 mentions the proposed mechanism and its design issues. Section 4 presents the prototype implementation and discussion. Section 5 gives the conclusion and future research topics.

2. BACKGROUND AND RELATED WORK

We inspect several device and service discovery systems in section 2.1 and introduce basic knowledge about UPnP technology and its extension for multimedia services, UPnP AV [10], in section 2.2. Section 2.3 discusses the potential performance problems on UPnP Networking. Some related works are reviewed in section 2.4.

2.1 Device and Service Discovery

Device and service discovery is essential to enable devices and services to properly discover, configure, and communicate with each other. Specifically, *discovery* is a mechanism for dynamically referencing a resource on the network. Clients find resources automatically rather than needing pre-configured bindings to specific resources. Table 1 lists several discovery protocols we peruse to derive which is better designed for deployment in home environments [11, 12]. In terms of four major component categories, *i.e.*, topology, network scope, search and identity, the UPnP is deliberated better for home or small enterprise environments. Explicitly, Service Location Protocol (SLP) is oriented towards enterprise service discovery and heavyweight directories. Salutation is primarily used for special services with directory lookup and hard service states. Bluetooth is based on actual physical proximity rather than closeness in the IP routing domain, and only for profile-defined services are its effect of computation and bandwidth utilization. Jini rests on that all devices throughout a network support Java runtime capabilities, however, difficult to be realized. Bonjour popularized by Apple Inc. is an interesting proprietary solution which meshes closely with existing Internet standards, while operating in the absence of the traditional managed Internet infrastructure. However, its human-readable naming rule is not necessary to home appliances since users prefer automatic control by another intelligent device.

Table 1. Comparison of discovery protocols with major component categories.

System	Topology	Scope	Search	Identity
UPnP	P2P	subnet	simple	unique ID
Jini	P2P & Directory	bridgeable	medium	unique ID
Bonjour	P2P	subnet	simple	non-distinctive
Bluetooth SDP	P2P	subnet	medium	unique UUID
SLP	P2P or Directory	bridgeable	complicated	unique URL
Saluation	P2P or Directory	subnet	medium	unique
Others[a]	P2P or Directory	–	–	unique

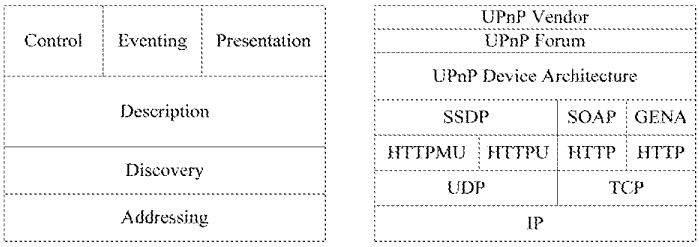
[a] Others: Ninja, INS, eSquirt IR, RFID, and *etc.* [11, 12].

2.2 UPnP Device Architecture and its AV Extension

The UPnP device architecture [2] specifies three entities: *device*, *service* and *control point* (CP). A UPnP device can be any entity implementing the UPnP protocols. Services are functions which devices can provide to users, and what service a device shall implement depends on the device type description. A CP likes a client, while a device acts as a server offering services. A CP can invoke actions on services, and provide any required parameters to and receive any return value from devices.

A UPnP device performs six fundamental function layers, as shown in Fig. 1 (a).

- *Addressing* is an underlying function by which a device gets a unique IP address as newly joining a home network. The UPnP framework uses two address assignment methods: dynamic host configuration protocol (DHCP) [13, 14] and automatic IP con-



(a) UPnP function layers. (b) UPnP communication protocols.

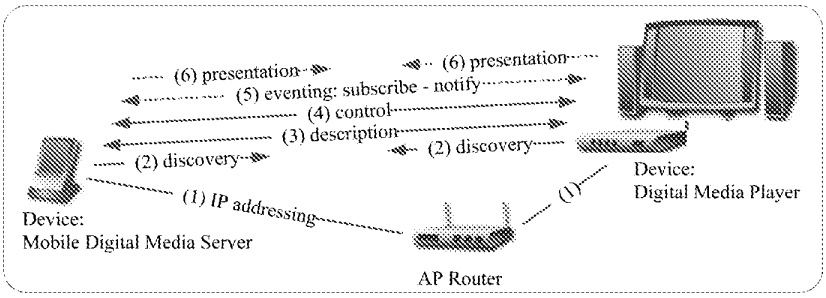
Fig. 1. UPnP function layers and communication protocol stacks.

figuration [15]. The latter is used as the DHCP service is not available.

- *Discovery* is the capability for a device to advertise its appearance and its services in a home network; so, CPs can find the device and its advertisement.
- *Description* is used by a device to present its services and capabilities in a well-defined format; so, CPs can parse its description file and know what it offers.
- *Control* is the capability for a device to handle requests from CPs and to invoke specific actions.
- *Eventing* is used by a device to notify the registered CPs of service state changes.
- *Presentation* is an HTML-based interface provided by a device for users to control or monitor the device directly.

On top of standard TCP/IP protocol stacks, the UPnP networking technology utilizes existing Internet protocols with compliant manipulations to support UPnP functions. Referring to Fig. 1 (b), we address the Simple Service Discovery Protocol (SSDP) [16], Simple Object Access Protocol (SOAP) [17] and General Event Notification Architecture (GENA) [18], as follows. The SSDP is a simple HTTP-based discovery mechanism used to discover local resources in a small, local area network with no need of centralized configuration, management, or administration. Each client directly queries the network, and each resource directly responds to the request. The SOAP integrates both HTTP and XML to provide a Web-based messaging and remote controlling mechanism. Its message body is used to specify control operations, and is expressed by XML and sent via HTTP. The GENA is in essence a publisher-subscriber system. A client (subscriber) registers at a service (publisher) for later notification about any changes of service states. The publisher responds a subscription ID and valid duration to the subscriber. Subsequent operations such as renewal and cancellation use the subscription ID to reference to the specific subscription. When the subscriber or publisher is no longer interested in the subscription, it will be cancelled by either.

Fig. 2 depicts an interaction procedure to ease exposition of UPnP functionality. In general, once a device is powered on, it tries to get an IP address first, organizes its description file, and broadcasts its advertisement by discovery function. When the device is found by a CP, it can be controlled by, send events to, and do presentation to a CP. Meanwhile, a CP can subscribe to services, later receive event notifications, and operate control actions. Note that addressing, description, discovery and control functions must be implemented imperatively; eventing and presentation parts are optional as needed.



1. A device joins in a home network and is assigned with an IP address, either by DHCP or Auto-IP.
2. A device sends SSDP messages for device and service advertisement onto a special multicast address 239.255.255.250:1900.
3. A CP receives device advertisement from 239.255.255.250:1900.
   A CP requests the device for accessing the device and the service descriptions.
   The devices sends both device and service XML-based descriptions to the CP.
4. A CP sends SOAP action messages to control the device. A device responds to SOAP actions.
   For example, a media player (with CP included) can send a *browse* action to obtain the set of meta data of media objects that a media service can provide.
5. A CP subscribes to some services provided by the device.
   The device responds a subscription ID to the CP and later notifies it of GENA event messages (to inform any changes of service statuses).
6. The device may provide a Web page to present itself in a home network.

Fig. 2. The interaction procedure in a UPnP network environment.

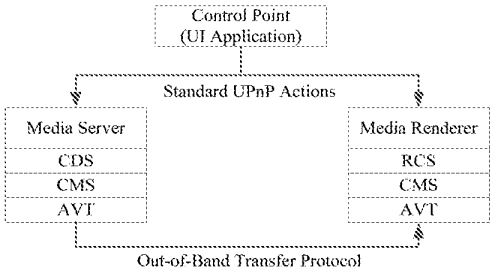


Fig. 3. UPnP AV architecture.

The UPnP AV [10], based on the UPnP framework, further defines three roles, *media server*, *media renderer* and *control point* (CP) in support of AV entertainment in home networks. As depicted in Fig. 3, the following describes each role with its service.

A *media server* serves as a media contents source in a home network. Its primary purpose is to allow CPs to enumerate media contents available for users to render them. Accordingly, three services, Content Directory Service (CDS), Connection Manager Service (CMS) and AV Transport Service (AVT), are defined below.

- *CDS* provides a set of actions that CPs invoke to enumerate media contents. For example, the "browse" action allows CPs to obtain detailed meta-data about media items available on the media server. The meta-data records the supported transfer protocols and data formats, and so CPs use it to determine if an indicated media renderer is able to render a selected media item.
- *CMS* manages the connections associated with a particular device. A CP invokes the primary "preparing-for-connection" action to notify a media server to prepare for upcoming media transfer. This action returns an AVT instance ID to the CP for later controlling the transfer flow and releasing the connection.
- *AVT* controls the player operations, such as stop, pause, seek, *etc.* Specially, it is allowed that AVT can take proprietary out-of-band transfer protocols for media content transfer [10].

A *media renderer* is to render media contents available in a home network. It allows a CP to control what and how media contents are rendered. Accordingly, three services, Rendering Control Service (RCS), Connection Manager Service (CMS) and AV Transport Service (AVT), are defined.

- *RCS* provides rendering actions for a CP to control the rendering of media contents, for example adjustment of brightness, contrast, and volume, for fine tune.

The CMS and AVT are the same as those of a media server. Minor difference in CMS is a CP checks if a media renderer is capable of rendering a specific media item.

2.3 UPnP Potential Problems

Prior works have examined the performance of the UPnP solution and found several problems in terms of discovery, control and eventing. Liong *et al.* [4] manifested that periodic SSDP-based discovery messages can impact network congestion and power dissipation of small electronics in an asymmetric home network where a Bluetooth Personal Area Network is bridged to an Ethernet network or Wireless LAN with higher bandwidth. Though UPnP M-Search can control the jitter bound to avoid implosion caused by huge multicast queries and responses, it may fall in a weak performance in large home networks. Mills *et al.* [5] devised an adaptive jitter control method that characterized performance of various combinations of jitter bound and network size.

As for UPnP control, SOAP was criticized to conflict with the REST principles [19] in designing an ideal Web-based network service. It obscured the semantics of HTTP POST without promotion to the original functionality. To improve SOAP response time, Newmarch [6] designed a REST-based method that can coexist with the existing one. It was shown that this method outperformed the original in aspects of request-response time, size of request/response payload, and memory consumption.

From the view of service-oriented architecture [20], Mazuryk *et al.* [7] examined the UPnP and remarked the scalability problem in discovery, inflexibility of fixed TCP time-out and impractical binding of arguments in control, inefficiency of eventing over TCP, and anonymity in UPnP API. The analytic result showed UPnP eventing was the weakest spot. They decomposed the eventing protocol into UDP-based transport level

and application level protocols, thereof avoiding TCP time-out and tearing down connections. Hu *et al.* [3] devised a compatible multicast complement which improved the efficiency of UPnP eventing without ambiguity and heavy implementation.

2.4 Related Works

Many academic and industrial researches have worked on related areas. Kim *et al.* [21] developed a home network system prototype for networked appliances by UPnP middleware. They focused on controlling traditional home appliances, not mobile devices. Al-Ali *et al.* [22] designed a Java based automation system for home devices. They focused on using Java platform and controlling by PC-based web page, which was different from UPnP middleware. Rich *et al.* [23] designed a collaborative system for home networked devices. They designed an interface for controlling traditional home appliances; however, no mobile or portable devices were involved. Choi *et al.* [24] developed a context-aware middleware for controlling home devices by Open Service Gateway initiative (OSGi) framework. Their work presented a control mechanism based on higher level service structure instead of UPnP technology. H. Kuriyama *et al.* [25] developed a translator for remotely controlling conventional home appliances without networked function, rather than developing a new device type. In this paper, we design a mobile media content sharing mechanism on the mobile phone platform and accordingly introduce a new device type, *i.e.*, mobile media server. The proposed framework is compliant to the UPnP and UPnP AV specifications. Therefore, users enjoy their mobile media contents via any home networked media players in a convenient way.

3. MOBILE MULTIMEDIA SHARING MECHANISM

This section describes the design of the proposed mechanism as well as design issues in course of developing the mobile media server and media renderer devices.

3.1 Design Abstract

The objective of this mechanism design is to make home networked devices interconnected and to enable mobile content sharing anywhere in a household playground. Consider a user scenario: a user can use a mobile device with storage units to easily and conveniently share stored media contents to home networked media player devices. Both mobile device and media player device involved are required to support UPnP and UPnP AV mechanisms, as mentioned in section 2.2. The mobile device is the media server, and the networked player device is the media renderer. A control point can be combined with either of them or as a dedicated device, and so used to interact with them and to negotiate media formats and transfer protocols.

Fig. 4 illustrates the user scenario to be developed and demonstrated in this paper. When a user took media contents, a picture or a video clip for example, and stored it in the mobile device such as mobile phone, the user can share media contents by means of the UPnP protocol via WLAN to a networked player device, for example, a network TV (BenQ™ DTV), which was fulfilled in our previous work [9]. To extend the utility of

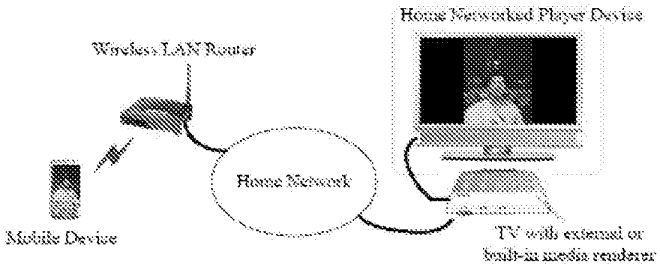


Fig. 4. Proposal of mobile content sharing scenario.

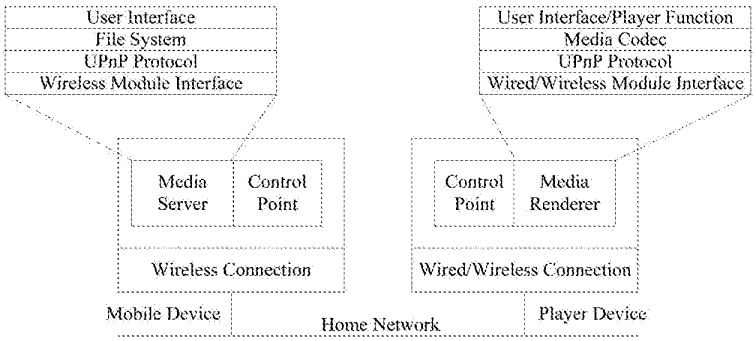


Fig. 5. System block diagram.

each device, the control point function is implemented on both mobile device and player device. In this way, a user can select the desired media item from either mobile server side or player side, therefore making this scenario more effective and convenient.

3.2 Media Server on Mobile Device

The design of the media server on a mobile device follows UPnP AV specification and uses WLAN as its transportation medium. On the top of the UPnP AV are an effective file system and a friendly user interface. As shown in Fig. 5, there are four significant layers: user interface, file system, UPnP protocol, and WLAN networking function. We briefly address design considerations of each layer, as follows.

- User interface (UI) is a top application. The most important design principle is user friendliness. There are two specific UIs: browse UI and control UI. Since a mobile device serves a mobile media server, a user can browse the file system through the browse UI to select the media content directories and files to be shared. The design of browse UI can classify the media content by media types, such as photo, music and video, so that the user can quickly and effectively find out the target media content. In

addition, the control UI displays available media renderers from which the user can select a favorite one to play indicated media contents.

- The file system is often related to the operating system (OS) chosen and is embedded-system-dependent. So, the primary design concern on file system is whether the OS adopted is advisable or whether there is adequate application program interface (API), *e.g.*, file descriptions and access operations, for development. Otherwise, the developer shall implement API porting layers to some extent to integrate the file system onto the target platform.
- The developed UPnP protocol layer herein contains both functions of media server and CP device classes. Significantly, we shall consider several system design issues. First of all, due to the limited memory space on mobile device, the code size should be compact and optimized. Second, task priority and manipulation are crucial because UPnP can invoke a number of tasks to handle different function modules, including web client and server, XML parser, network I/O, *etc.* Third, different sorts of UPnP messages may have various sizes. The UPnP kernel should be sophisticated to manage kernel resource carefully and avoid fatal exceptions like heap overrun and out of memory. Finally, independence design should be clear to maintain concurrence and stability since media server and CP run simultaneously.
- The WLAN function adopts IEEE 802.11b/g technology. In practice, this layer is highly hardware dependent. Its performance strongly depends on wireless chipset solution, embedded hardware architecture, configuration of network input/output interface, and driver implementation.

3.3 Media Renderer on Player Device

The media renderer on a player device is devised according to the UPnP AV in spite of what network medium used. As shown in Fig. 5, the media renderer includes user interface and player function, media codec, UPnP protocol, and physical network layers. Most functions are similar to those in the media server. We specially address several design considerations in user interface and player function, and media codec layers.

- There are two specific user interfaces: browse UI and control UI. The browse UI must be friendly for a user to easily browse or search on-line available media servers on the network. Moreover, browse UI must be *proactive* in transparently distinguishing or filtering out media content of which media formats are not supported by the renderer. So, a user will not inadvertently play unsupported media content and be prompted by exception or warning messages. As for control UI, its design has to support graphic interaction about basic operations, like play, stop and pause, corresponding to the control and decoding progress at media codec layer.
- The design of the media codec module should be extensible to support addition/removal of media formats on the media player device, and to open/close the support of any specific media format. This function layer should develop a structural, uniform interface for media codec management.

Same as the media server, the utilization of system resource is critical. The concurrency control must be considered when CP and media renderer run simultaneously on the

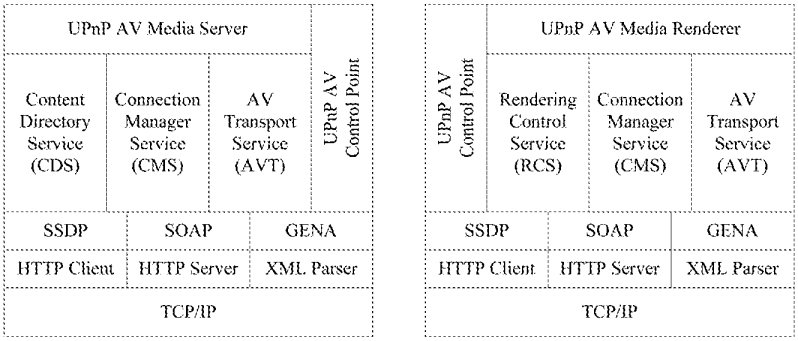
player device. Again, we develop UPnP middleware and applications on software platforms, and performance of network medium layer will be hardware-dependent.

4. PROTOTYPE IMPLEMENTATION AND DISCUSSION

This section presents the prototype implementation and discusses related issues. Sections 4.1 and 4.2 mention the implementation and concerns about mobile device and player device. Section 4.3 exhibits a prototype demonstration. In light of the DLNA interoperability guidelines, section 4.4 addresses several remarks about gateway device, media transport and flow control in UPnP-based home network environments.

4.1 Mobile Device Implementation

As depicted in Fig. 6 (a), the UPnP middleware on the mobile device is built on the base of TCP-IP layer. Upon it, we implement CDS, CMS, and AVT services as well as media server functions as mentioned in sections 2.2 and 3.2.



(a) Middleware stack on mobile device. (b) Middleware stack on player device.

Fig. 6. Middleware stack.

For simplicity and compatibility of AVT function, we develop a proprietary out-of-band media transfer mechanism by means of HTTP communication protocols. It is employed on both media server and media renderer to stream media objects between them. Specifically, the HTTP GET and POST transfer methods are utilized to behave in a request-response manner. One side can send an HTTP GET message to request an indicated media object. The other side responds an HTTP POST message which encapsulates the binary content of that media object. As a result of HTTP communications, the media transfer acts like in an interactively streaming manner.

The CDS service checks all shared media items and summarizes their information into meta-data. Since the representations of object identifier and parent identifier of each media item are not standardized in UPnP AV, we customize CDS service to meet our requirements of media content management.

As for the file system layer, because the native file system, provided by the mobile handheld platform, is usually too simple to satisfy developers' and users' demands, we develop a virtual file system instead with friendly and flexible UI structures for end users to process media content browsing and other operations. Referring to the design of browse UI, the virtual file system can catalog media items into image, audio, or video directories according to their formats rather than putting them into ordinary directories.

4.2 Player Device Implementation

The UPnP middleware implemented on player devices, as shown in Fig. 6 (b), has similar function blocks as those on the media server, except media renderer functions. The CMS and AVT services, and media codec layer are specially addressed below.

Getting protocol information is a key action in CMS. The CMS checks available media codec modules on the media renderer, and specifies supported media formats and file types in CMS protocol information. With CDS and CMS services, a CP negotiates a common media format for the media server and renderer to play an indicated media file.

The AVT service on media renderer is symmetric to that on mobile server. By using the HTTP Range header field to specify the access data range of a content binary file, we implement play, stop and pause actions on mobile devices as well as trick action, like fast forward/backward. Note that the implementation of trick mode is complicated somewhat. The newly launched DLNA v1.5 guideline [26] further specifies two implementing methods: client-oriented HTTP Range method and server-oriented method. The former is that the player device manipulates the values of Range header field in sequential HTTP GET requests to randomly access the target content binary. In the latter, the media server handles the target response according to time seek or play speed specified in the DLNA-defined TimeSeekRange.dlna.org or PlaySpeed.dlna.org header field.

We observe that the performance of HTTP-based method can be degraded by the intrinsic properties of HTTP and limited bandwidth throughput that mobile devices can offer. Relatively, the implementation effort of the server-side method is mostly on media server side. This method is thus applicable if the media server runs on a powerful desktop PC or media gateway device, but may unfortunately make a mobile device overloaded, especially as streaming video content. At present, we fulfill the HTTP-based method to perform the AVT service, and leave the server-side method till the mobile device has enough network capacity and computing resource. Incidentally, as mentioned before, AVT is out-of-band and has less influence on system design. We consider the alternative use of real-time transport protocol, like RTP/RTSP, in the future implementation.

Implementing media codec layer is critical. The following describes the flow of media codec process. In the beginning, the process extracts the HTTP MIME-type (data format) and file extension of the media item from parsed meta-data. Only mime-type is enough to identify its data format in most cases. For reliability, our implementation double checks the file extension to avoid an unwarned application break or fatal exception. Then, the process maps the resolved format to a specific program-defined value, instead of using the originally extracted string of data format, to facilitate program processing. The media codec checks what type the received data stream is, image, audio or video, and in turn calls the proper media codec to process the media item. Otherwise, the error handler will be called if the incoming data type is unknown or unsupported. After the

media codec finishes decoding the incoming data stream, the player outputs the decoded data to the target rendering devices such as display or audio speaker.

4.3 Prototype Demonstration

We describe the development environments and show the mobile media content sharing architecture in reference to the user scenario aforementioned in section 3.1.

4.3.1 Prototype development environment

Our development takes into account two situations. First, we have to make reuse of UPnP code module and platform migration (exporting UPnP source library onto different target platforms). Second, only C software development environments most embedded devices support. Thus, we implement the UPnP and UPnP AV code modules in ANSI C language, and port them onto target mobile media server and media player devices.

The prototype of mobile media server is implemented on the Windows PocketPC 2005 environment. We use Microsoft MFC to develop UI components. All source components are synchronized to BenQ™ P51 PDA phone as an experimental device with IntelPXA27x with WMMX, 520 MHz CPU, 128 MB RAM and Windows PocketPC 5.1 Operating System. Incidentally, we experience depreciated UI in small part when we integrate the MFC UI into Windows PocketPC 2005. It is because GUI and graphic library packets are practically platform-dependent.

For the role of media renderer, we use a previously developed media renderer [9] with Phillips PNX1500, 300 MHz CPU, 64 MB Flash RAM and pSOS Operating System. Our media renderer device currently supports several media formats, including (image) JPEG, PNG, BMP and TIF, (audio) LPCM, MP3, MPEG1-L2, (video) MPEG1, and MPEG2. As for the establishment of demonstration context, any wireless AP router with support of IEEE 802.11 a/b/g and DHCP server function can be adopted to interconnect the mobile media server and media renderer devices in a home network.

4.3.2 Scenario demonstration

Fig. 7 presents the snapshots of scenario demonstration. We run a mobile media server on BenQ™ P51 PDA phone. Through the browse UI, a user can select to share media contents stored in the phone or external memory card. As the storage unit is indicated, media contents are classified by their media formats into image, audio and video categories. In this way, users can have a friendly content browsing experience.

The capability of CP is respectively integrated with the media server and the media renderer, as mentioned before, to facilitate user's operations. There are two ways to play a media item. First, a user with a mobile media server in P51 can browse the local media contents, through the browse UI on the CP functions, and *push* a media item to the indicated renderer devices. Second, a user with a media renderer can browse the remote media contents in P51. As the play action is activated, the target renderer device can immediately *pull* a media item for rendering.

As illustrated in Fig. 7, on the media renderer side (output to TV screen), a user can use a remote IR controller to operate the CP to search available media servers on the net work. The mobile media server on P51 is highlighted. The user can further browse the

Fig. 7. Scenario demonstration.

media contents and select an interested media item. For example, a user shows a picture, stored in the mobile media server, on the TV screen, outputted by the media renderer. There are not manual operations of connection setup and media content copy/transfer.

4.4 Additional Remark

The above has mentioned in place several design and development challenges and issues. We further take some remarks about the gateway device and flow control below.

4.4.1 Gateway device in transcoding, transrating, or scaling

In light of the UPnP and DLNA specifications, the task of decoding media is indeed acted at the play device side. A mobile device can just stream media items to the player device which takes charge of decoding service. In practice, this behavior is much similar to the media file transfer. On the other hand, the role of home gateway service (on a powerful PC or dedicated device) is attractive in digital home vision. Mobile devices with limited computing and storage resource can leverage its content transformation ability, like transcoding, transrating or scaling of content binary, in distributing media content. Therefore, the newly launched DLNA interoperability guideline v1.5 [26] defines the home infrastructure device (HID) category that includes two device classes, mobile network connectivity function (M-NCF) and media interoperability unit (MIU), to support network interoperability and media format interoperability. Notwithstanding the design of a home gateway device is orthogonal to the proposal in this paper, it is complementary to mobile media content sharing scenarios.

4.4.2 Quality of service (QoS) in flow control

Since the DLNA interoperability guideline v1.0, the HTTP communication protocols are used as the media transport baseline for media transfer across a home network [1]. With the support of standard Multipurpose Internet Mail Extension (MIME), the content receiver is able to identify the type of binary data contained in a streaming file, and invoke the corresponding decoding function to process the received data. However, due to device differentiation about system designs and restrictions, UPnP allows the use of proprietary out-of-band media transport protocols for AVT Service. The DLNA v1.5 hence adds the RTP as an optional media transport [26]. At present, we deliberate the parallel development of RTP protocols onto other target devices, subject to the significant limitations of embedded device system and resources.

In accordance with the DLNA v1.0, our design delivers the media file in a default, best-effort quality of service (QoS) fashion for immediate playback over the HTTP communications. To support the increasing system usages, the DLNA v1.5 defines a structure of priority-based QoS control and a set of transfer modes. There are three basic media transfer modes: streaming, interactive and background modes. Each transfer mode can be associated with different priority levels. A DLNA-defined application-level QoS tag, *i.e.*, DLNAQS_UP = 0, 1, 2 or 3, is so used to correlate the underlying settings of "802.1Q user priority," "Wi-Fi wireless multimedia access category," and "differentiated services code point" to a particular DLNA traffic type. We notice that the media transfer in the DLNA v1.0 is closely mapped to a streaming transfer mode in terms of functionality.

5. CONCLUDING REMARK AND FUTURE WORK

Many modern mobile handheld devices enable users to take pictures, shoot video clips, or record audio sounds, and to store them in mobile devices. However, due to the intrinsic dimensional limitation and resource and power limitation, mobile devices cannot offer users high-performance and high-quality multimedia enjoyment. Although us-

ers can have external, powerful or professional media player devices, unfortunately, they often suffer from an awkward, inconvenient way to share and transfer multimedia contents stored in mobile devices to external high-end media player devices. To resolve this situation, in this paper we have developed an efficient mobile content sharing architecture that is based on the UPnP and UPnP AV technologies and is compliable with the DLNA interoperability guidelines. It is appealing that our architecture supports a convenient and effective way for users to share their media contents on mobile devices to other home networked devices. We have demonstrated that with the control point design, users can browse and select media items on mobile devices and render them on the player devices; meanwhile, through the friendly UI design, the network connection and media streaming are transparent to users.

Currently, we are investigating several design issues, development challenges and requirements on our mobile content sharing architecture. The future work will include several aspects. First, we will study those UPnP essential issues and propose solutions to upgrade the performance and robustness of UPnP technologies. Second, we will continue to extend the provision of more effective media codec functions on either the media server or media renderer, associated with high-definition content formats for the upcoming trend of high-quality multimedia. Third, we will develop suitable media streaming protocols, such as RTP/RTSP, deployed on both media server and media renderer sides to support various playing operations, hereby satisfying user requirements. Finally, premium content protection, such as Digital Rights Management (DRM) on content source or Digital Transmission Contents Protection over IP (DTCP-IP) [27] on transmission channel, is not supported yet. The future work will incorporate the above into our developed home-networked multimedia content sharing architecture.

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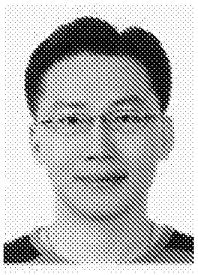

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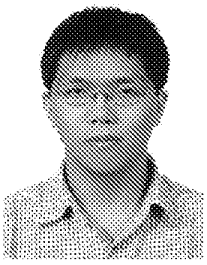

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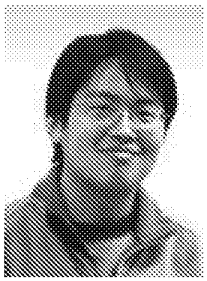

Yen-Ju Huang (黃彥儒) received the B.S. and M.S. degrees in Electrical Engineering from Yuan Zu University in Taiwan and then joined BenQ Mobile System Company, Hsinchu, Taiwan from 2003 to 2004 to be an engineer in Digital Signal Processing Department. Afterward, at the end of 2004, he joined BenQ Advanced Technology Center, Taipei, Taiwan as a senior engineer until 2007. His research interests include wireless communication, mobile communication network and home networking technology.

Electronic Acknowledgement Receipt

EFS ID:	38016859
Application Number:	15687249
International Application Number:	
Confirmation Number:	4059
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Customer Number:	149550
Filer:	Keith Joshua Bae/Traci Burke
Filer Authorized By:	Keith Joshua Bae
Attorney Docket Number:	41197.278581
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Application Type:	Utility under 35 USC 111(a)

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/687,249	Filing Date 08/25/2017	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	12/12/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/VIKKI GRAY/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

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NOTICE OF ALLOWANCE AND FEE(S) DUE

149550 7590 04/02/2020
SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

EXAMINER
HOPE, DARRIN

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 04/02/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	08/25/2017	David Strober	41197.278581	4059

TITLE OF INVENTION: PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	07/02/2020

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

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I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

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149550 7590 04/02/2020
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	08/25/2017	David Strober	41197.278581	4059

TITLE OF INVENTION: PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

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nonprovisional	SMALL	$500	$0.00	$0.00	$500	07/02/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
HOPE, DARRIN	2173	715-716000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

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5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	08/25/2017	David Strober	41197.278581	4059

149550 7590 04/02/2020

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

EXAMINER	
HOPE, DARRIN	
ART UNIT	**PAPER NUMBER**
2173	

DATE MAILED: 04/02/2020

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 15/687,249	Applicant(s) Strober, David	
	Examiner DARRIN HOPE	Art Unit 2173	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 12 December 2019.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-20 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 12/12/2019.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/DARRIN HOPE/ Examiner, Art Unit 2173	/TADESSE HAILU/ Primary Examiner, Art Unit 2173

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

2. This Office Action is responsive to the communications filed on 12 December 2019.

Allowable Subject Matter

3. Claims 1-20 are allowed.

4. The following is an examiner's statement of reasons for allowance:

The present invention is directed to a computer-implemented method and device for presenting and controlling content on a display device.

The prior arts fails to show individually or in combination the elements recited in independent claim 1.

Specifically, the prior art references fail to show, in part, "**obtaining a synchronization code associated with the first computing device,** wherein the associated synchronization code is stored on a remote server device; **providing the synchronization code to a second computing device in communication with the remote server device, wherein the provided synchronization code causes the remote server device to store an association between the first computing device and the second computing device;** receiving, from the remote server device, a first message that includes at least one command in a first format, the first message being received **based at least in part on the stored association and on a second message including at least one command in a second format having been sent from the associated second computing device; selecting a first media player application from a plurality of media player applications based at least in**

part on the first format of the first message, the first media player application being selected to play a first piece of content referenced in the received first message; and **controlling how the selected first media player application plays the referenced first piece of content** based on a first command of the at least one command in the first format having been included in the received first message" as recited in independent claim 1. At least based on the above distinctions, the Examiner submits that independent claim 1 is patentable over the combination of the cited references. Independent claims 12 and 17 include similar limitations to that of claim 1 and are also patentable over the cited prior art for at least the same reasons described above with respect to claim 1. At least by virtue of their dependency, the Examiner submits that the remaining claims are also patentable over the combination of the cited references.

Accordingly, Claims 1-20 are allowed.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRIN HOPE whose telephone number is (571)270-5079. The examiner can normally be reached on Mon-Thr - 7-4:30, Fri - 7-3:30, Alt. Fri Off.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an

interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu D Vu can be reached on (571)272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DARRIN HOPE
Examiner
Art Unit 2173

/TADESSE HAILU/
Primary Examiner, Art Unit 2173

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	**Art Unit**
	DARRIN HOPE	2173

CPC						
Symbol					**Type**	**Version**
G06F	/	16	/	74	F	2019-01-01
G06F	/	16	/	951	I	2019-01-01
G06F	/	9	/	452	I	2018-02-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

/DARRIN HOPE/ Examiner, Art Unit 2173	25 March 2020	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/TADESSE HAILU/ Primary Examiner, Art Unit 2173	27 March 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office — Part of Paper No.: 20200305

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	**Art Unit**
	DARRIN HOPE	2173

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G06F	/	17	/	30
G06F	/	9	/	44

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
715	716

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

/DARRIN HOPE/ Examiner, Art Unit 2173	25 March 2020	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/TADESSE HAILU/ Primary Examiner, Art Unit 2173	27 March 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office — Part of Paper No.: 20200305

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	**Art Unit**
	DARRIN HOPE	2173

☑ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10	19	19										
2	2	11	11	20	20										
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6	6	15	15												
7	7	16	16												
8	8	17	17												
9	9	18	18												

/DARRIN HOPE/ Examiner, Art Unit 2173	25 March 2020	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/TADESSE HAILU/ Primary Examiner, Art Unit 2173	27 March 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office — Part of Paper No.: 20200305

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	Art Unit
	DARRIN HOPE	2173

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G06F17/30846 G06F9/452 G06F17/30864	12/26/2018	DH

US Classification - Searched*			
Class	Subclass	Date	Examiner
715	716	12/26/2018	DH

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
EAST	12/26/2018	DH
EAST	05/30/2019	DH
EAST	03/25/2020	DH

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
715	716	03/25/2020	DH
G06F17	30846	03/25/2020	DH
G06F9	452	03/25/2020	DH
G06F17	30864	03/25/2020	DH

/DARRIN HOPE/ Examiner, Art Unit 2173	

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2361	(G06F17/30846 G06F9/452 G06F17/30864).cpc.	US-PGPUB; USPAT	OR	OFF	2020/03/25 12:57
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L19	46	L16 and universal with command	US-PGPUB; USPAT	OR	OFF	2020/03/25 13:01
L20	7	L1 and universal with command	US-PGPUB; USPAT	OR	OFF	2020/03/25 13:01
L21	2	("20170351757").PN.	US-PGPUB; USPAT; USOCR; DERWENT	OR	OFF	2020/03/25 13:02
L22	66585	(play$3 same control$4 same (content media) same (display TV television))	US-PGPUB; USPAT	OR	OFF	2020/03/25 13:05
L23	4873	L22 and ((synchronization synch identifier QR) with code)	US-PGPUB; USPAT	OR	OFF	2020/03/25 13:09
L24	36	L1 and L23	US-PGPUB; USPAT	OR	OFF	2020/03/25 13:09

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L25	198534	((synchronization synch identifier QR) with code)	US-PGPUB; USPAT	OR	OFF	2020/03/25 13:13
L26	66585	(play$3 same control$4 same (content media) same (display TV television))	US-PGPUB; USPAT	OR	OFF	2020/03/25 13:13
L27	2361	(G06F17/30846 G06F9/452 G06F17/30864).cpc.	US-PGPUB; USPAT	OR	OFF	2020/03/25 13:13
L28	3381	(715/716).ccls.	US-PGPUB; USPAT	OR	OFF	2020/03/25 13:13
L29	187	(play$3 same control$4 same (content media) same (display TV television)) same ((synchronization synch identifier QR) with code)	US-PGPUB; USPAT	OR	OFF	2020/03/25 13:14

3/25/2020 1:17:56 PM
C:\Users\dhope\Documents\EAST\Workspaces\15687249.wsp

Bibliographic Data

Application No: 15/687,249

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /DARRIN HOPE/ Examiner's Signature | Initials

Title: PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
08/25/2017	715	2173	41197.278581
RULE			

APPLICANTS

Touchstream Technologies, Inc., Valhalla, NY,

INVENTORS

David Strober Rye, NY, UNITED STATES

CONTINUING DATA

This application is a CON of 13532546 06/25/2012 PAT 9767195

13532546 is a CIP of 13157821 06/10/2011 PAT 8904289

13157821 has PRO of 61477998 04/21/2011

FOREIGN APPLICATIONS

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Application Number	15687249
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Attorney Docket Number	41197.278581

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	137	20030005000	A1	2003-01-02	Landsman et al.	
	138	20030004804	A1	2003-01-02	Landsman et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

	139	20020198778	A1	2002-12-26	Landsman et al.	
	140	20020146122	A1	2002-10-10	Vestergaard et al.	
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	142	20020129102	A1	2002-09-12	Landsman et al.	
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	144	20020083147	A1	2002-06-27	Ripperger	
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	146	20020034193	A1	2002-03-21	Patki et al.	
	147	20020021289	A1	2002-02-21	Combs et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

	1	101534449	CN	A	2009-09-16	ZHAN WU		
	2	101577650	CN	A	2009-11-11	GUANGZHOU HKUST R & D CORP LTD		
	3	101778198	CN	A	2010-07-14	SHANGHAI XIANGYUN INFORMATION SYSTEM CO., LTD		
	4	101815073	CN	A	2010-08-25	CHANGCHUN OPTICS FINE MECH		
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	6	2004356695	JP	A	2004-12-16	SONY CORP		
	7	2004100500	WO	A2	2004-11-18	THOMSON LICENSING S.A.		
	8	2008070050	WO	A2	2008-06-12	SWARMCAST, INC.		

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T5
	1	Ask Search Internet Search, session identifier random, printed on 11/19/11	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

	2	Webopedia computer dictionary, session cookie, printed on 11/19/11	
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	6	Hachman, M. "Snapstick's Media Streaming App/Box: Hands On," www.pcmag.com/article2/0,2817,2375455,00.asp, 2 pages (January 8, 2011).	
	7	Dolcourt, J., CES: Snapstick takes on Apple TV, Google TV," http://news.cnet.com/8301-17938105-20025100-1.html, 3 pages. (December 9, 2010).	
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	11	Cheng, J., "Stream AirPlay video to regular TV? Apple might make it happen," http://arstechnica.com/apple/news/20ll/03/stream-airplay-video-to-a-regular-tv-apple-might, 5 pages, 3/23/2011.	
	12	"Using the Play To feature to stream media", http://windows.microsoft.com/en-US/windows7/using-the-play-to-feature-to-stream-media, 3 pages, printed on 6/7/2011.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

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	15	Fallahkhair, S., et al., "Dual Device User interface Design for Ubiquitous Language Learning: Mobile Phone and Interactive Television (iTV)," Proceedings of the 2005 IEEE Int'l Workshop on Wireless and Mobile Technologies in Education, 8 pages, 2005.	
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	17	bing search q=phone+server+television+control&qs 6-26-2014	
	18	bing search q=phone+server+television+control+me 6-26-2014	
	19	bing search q=mobile+server +television+control+m 6-26-2014	
	20	Webopedia computer dictionary, web identifier, printed on 11/19/11.	

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EXAMINER SIGNATURE

Examiner Signature	/DARRIN HOPE/	Date Considered	03/25/2020

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/KEITH J. BAE/	Date (YYYY-MM-DD)	2019-12-12
Name/Print	Keith J. Bae	Registration Number	64633

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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To: docket.shb@clarivate.com,IPDOCKET@SHB.COM,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 149550

Apr 02, 2020 09:51:45 AM

Dear PAIR Customer:

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613
UNITED STATES

The following USPTO patent application(s) associated with your Customer Number, 149550 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

Disclaimer:
The list of documents shown below is provided as a courtesy and is not part of the official file wrapper. The content of the images shown in PAIR is the official record.

Application	Document	Mailroom Date	Attorney Docket No.
15687249	NOA	04/02/2020	41197.278581
	1449	04/02/2020	41197.278581

To view your correspondence online or update your email addresses, please visit us anytime at https://sportal.uspto.gov/secure/myportal/privatepair.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

Document Description: Issue Fee Payment (PTO-85B)

Issue Fee Transmittal Form

Application Number	Filing Date	First Named Inventor	Atty. Docket No.	Confirmation No.
15687249	25-Aug-2017	David Strober	41197.278581	4059

TITLE OF INVENTION :

PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

Entity Status	Application Type	Art Unit	Class - Subclass	EXAMINER
Small	Utility under 35 USC 111(a)	2173	716000	DARRIN HOPE

Issue Fee Due	Publication Due	Total Fee(s) Due	Date Due	Prev. Paid Fee
$500	$0	$500	02-Jul-2020	$0

1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)

Current Correspondence Address:	Current Indicated Fee Address :
149550 SHOOK, HARDY & BACON LLP (Touchstream Technologies, Inc.) 2555 GRAND BLVD KANSAS CITY MO 64108-2613 UNITED STATES 816-474-6550 IPDOCKET@SHB.COM	
☐ Change of correspondence address requested, system generated AIA/122-EFS form attached	☐ Fee Address indication requested, system generated SB/47-EFS form attached

2.Entity Status

Change in Entity Status

○ Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.
Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment. If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.

◉ Applicant asserting small entity status. See 37 CFR 1.27.
Note: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

○ Applicant changing to regular undiscounted fee status.
Note: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

Doc Code: IFEE PTOL/85B-EFS

Document Description: Issue Fee Payment (PTO-85B)

3.The Following Fee(s) Are Submitted:

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4.Firm and/or Attorney Names To Be Printed

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1. SHOOK, HARDY & BACON L.L.P.
2.
3.

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Name	City	State	Country	Category
TOUCHSTREAM TECHNOLOGIES, INC.	VALHALLA	NEW YORK	united states	corporation

6.Signature

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

Signature	/KEITH J. BAE/	**Date**	06-30-2020
Name	Keith Joshua Bae	**Registration Number**	64633

WEB IFEE 1.0

Electronic Patent Application Fee Transmittal

Application Number:	15687249
Filing Date:	25-Aug-2017
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Filer:	Keith Joshua Bae/Traci Burke
Attorney Docket Number:	41197.278581

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY APPL ISSUE FEE	2501	1	500	500
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**500**

Electronic Acknowledgement Receipt	
EFS ID:	39876959
Application Number:	15687249
International Application Number:	
Confirmation Number:	4059
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Customer Number:	149550
Filer:	Keith Joshua Bae/Traci Burke
Filer Authorized By:	Keith Joshua Bae
Attorney Docket Number:	41197.278581
Receipt Date:	30-JUN-2020
Filing Date:	25-AUG-2017
Time Stamp:	17:45:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$500
RAM confirmation Number	E20206TH44585834
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Web85b.pdf	46292 f75d70e5f09af2b07cd57683ff67db025085f226	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32044 0de00a12638ef96dcbc54c254c62620770977ccf	no	2
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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	08/11/2020	10740393	41197.278581	4059

149550 7590 07/22/2020

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

David Strober, Rye, NY;
Touchstream Technologies, Inc., Valhalla, NY;

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IR103 (Rev. 10/09)

PTO/SB/30EFS (02-18)
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	15687249	Filing Date	2017-08-25	Docket Number (if applicable)	41197.278581	Art Unit	2173
First Named Inventor	David Strober			Examiner Name	Darrin Hope		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☐ Amendment/Reply
- ☒ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 192112

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

PTO/SB/30EFS (02-18)
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Signature of Registered U.S. Patent Practitioner			
Signature	/KEITH J. BAE/	Date (YYYY-MM-DD)	2020-07-22
Name	Keith J. Bae	Registration Number	64633

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc Code: QPIDS.REQ
Document Description: QuickPath Information Disclosure Statement

PTO/SB/09 (09-18)

CERTIFICATION AND REQUEST FOR CONSIDERATION OF AN INFORMATION DISCLOSURE STATEMENT FILED AFTER PAYMENT OF THE ISSUE FEE UNDER THE QPIDS PROGRAM

Non-Provisional Application Number: 15/687,249	Filing Date: 2017-08-25
First Named Inventor: David Strober	Title of Invention: PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

THE UNDERSIGNED HEREBY CERTIFIES AND REQUESTS THE FOLLOWING FOR THE ABOVE-IDENTIFIED APPLICATION.

1. Consideration is requested of the information disclosure statement (IDS) submitted herewith, which is being filed after payment of the issue fee.
2. Check the box next to the appropriate selection:

   ☐ Each item of information contained in the IDS was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the IDS. See 37 CFR 1.97(e)(1).

   OR

   ☑ No item of information contained in the IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the IDS. See 37 CFR 1.97(e)(2).

   OR

   ☐ See attached certification statement in compliance with 37 CFR 1.97(e).
3. Please charge the IDS fee set forth in 37 CFR 1.17(p) to Deposit Account No. 192112.
4. A Petition to Withdraw from Issue After Payment of the Issue Fee (37 CFR 1.313(c)(2)), including the petition fee set forth in 37 CFR 1.17(h), is submitted herewith as a **Web-based ePetition**. **WARNING:** Do not submit the petition as a follow-on paper via EFS-Web. Submit the petition as a Web-based ePetition by signing on to EFS-Web as a registered user, selecting the radio button next to "Existing application/patent," and then selecting the radio button next to "ePetition (for automatic processing and immediate grant, if all petitions requirements are met)." Failure to use the Web-based ePetition interface will result in automatic entry of the RCE.
5. A request for continued examination (RCE) under 37 CFR 1.114 and the RCE fee under 37 CFR 1.17(e) are submitted herewith.
6. The RCE will be treated as a "conditional" RCE. In the event the examiner determines that any item of information contained in the IDS necessitates the reopening of prosecution in the application, the undersigned understands that (i) the RCE will be processed and treated as an RCE under 37 CFR 1.114 and therefore (ii) the IDS fee under 37 CFR 1.17(p) will be returned in accordance with 37 CFR 1.97(b)(4). In the event that no item of information in the IDS necessitates reopening prosecution, the undersigned understands that the RCE will not be processed and the RCE fee under 37 CFR 1.17(e) will be returned.
7. This certification and request is being filed as a **Web-based ePetition** and is not accompanied by an amendment to the application. Inclusion of an amendment will result in automatic entry of the RCE.

Signature /KEITH J. BAE/	Date 2020-07-22
Name (Print/Typed) Keith J. Bae	Practitioner Registration Number (If applicable) 64633

Note: *Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature. If necessary, submit multiple forms for more than one signature, see below.**

☑ *Total of ONE forms are submitted.

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PTO/SB/08a (02-18)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	15687249
Filing Date	2017-08-25
First Named Inventor	David Strober
Art Unit	2173
Examiner Name	Darrin Hope
Attorney Docket Number	41197.278581

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	1	8060631	B2	2011-11-15	Collart et al.	
	2	8614625	B2	2013-12-24	Alsina et al.	
	3	8671440	B2	2014-03-11	Damola et al.	
	4	8782262	B2	2014-07-15	Collart et al.	
	5	8875180	B2	2014-10-28	DEMCHENKO et al.	
	6	8880491	B2	2014-11-04	Morris	
	7	9071792	B2	2015-06-30	Alsina et al.	
	8	9420025	B2	2016-08-16	Park	

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	9	8238887	B2	2012-08-07	Filipov	
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	2	20090172780	A1	2009-07-02	Sukeda et al.	
	3	20090193466	A1	2009-07-30	Ehreth et al.	
	4	20100138780	A1	2010-06-03	Marano et al.	
	5	20100241699	A1	2010-09-23	MUTHUKUMARASAMY et al.	
	6	20110296465	A1	2011-12-01	Krishnan et al.	

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	7	20120114313	A1	2012-05-10	Phillips et al.	
	8	20120192225	A1	2012-07-26	Harwell et al.	
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	1	2008108718	WO	A1	2008-09-12	Telefonaktiebolaget LM Ericsson		
	2	2007078745	WO	A1	2007-07-12	UNITED VIDEO PROPERTIES, INC.		

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	Application Number	15687249
	Filing Date	2017-08-25
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	Art Unit	2173
	Examiner Name	Darrin Hope
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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/KEITH J. BAE/	Date (YYYY-MM-DD)	2020-07-22
Name/Print	Keith J. Bae	Registration Number	64633

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
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(43) International Publication Date
12 September 2008 (12.09.2008)

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(51) International Patent Classification:
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PCT/SE2008/050141

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(71) Applicant *(for all designated States except US):* **Telefonaktiebolaget LM Ericsson** [SE/SE]; S-164 83 Stockholm (SE).

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available):* AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, **BR,** BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, **HR,** HU, **ID,** IL, IN, IS, **JP,** KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW

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Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(54) Title: PERSONALIZED INTERACTION USING CODES

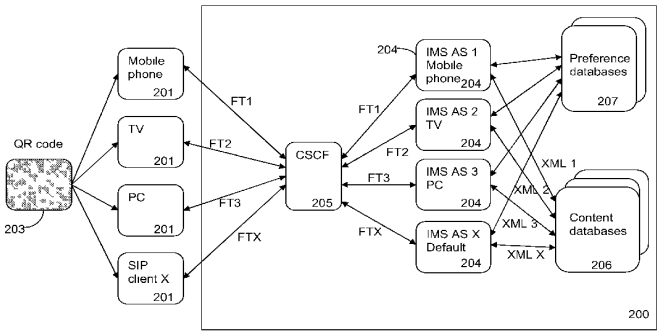


Figure 2

(57) Abstract: A method and nodes adapted to provide personalized multimedia services for users having registered a media player (300, 400, 401, 501, 502, 606) to a multimedia network, on the basis of the content (301, 500) read by a code reader (302, 405, 503),connected to or integrated with the media player. Content decoded from a code is used for creating or updating a user preference data record (700, 701) linked to by the identity with which the respective media player is registered. An application server (305, 402, 506, 600) being responsible for personalizing a requested service is interconnected with one or more preference databases (306, 407, 603), and one or more content databases (308, 408, 605) and/or dedicated servers (507). Upon receiving a service request, the application server, access relevant data from the mentioned nodes and assembles personalization instructions, adapted to trigger the requested personalized servicein the requesting media player.

WO 2008/108718 A1

PERSONALIZED INTERACTION USING CODES

TECHNICAL FIELD

The present invention relates generally to the field of personalizing a service in a multimedia network and specifically to personalization on the basis of information read from a code.

BACKGROUND

Personalization, interactivity, combined services and fixed-mobile convergence can be achieved in several ways, but to succeed in the development of new services and in achieving interoperability between technologies, the industry must agree on an approach that is based on open standards and interfaces. One of the most promising approaches is to use the IP Multimedia Subsystem (IMS) framework. IMS was originally designed to enable multimedia services for third-generation mobile terminals, but it has already been extended to handle access also from public Wireless Local Area Networks (WLAN) and Private Networks, and is continuing to be extended into an access-independent platform for service delivery, including broadband fixed-line access. IMS provides seamless roaming between mobile, public WLAN and private networks for a wide range of services, such as gaming and interactive IP television (IPTV) and devices, such as set-top boxes, multimedia players and digital cameras.

The ability of IMS to deliver combined services enables a seamless integration of TV, communication, and internet services to create a more convenient and attractive experience to the consumers. IMS-based IPTV also inherits all the capabilities of IMS for service roaming, thus linking the IPTV experience to a user profile, not limited to a particular device, as with traditional set-top-boxes. An IPTV service can

therefore be delivered to any device adapted with an IMS interface and located within the range of the IMS domain.

Consumers want greater control over TV services and delivered content anytime, anywhere, and on any device. Personalization will enable them to customize TV and Video-on-Demand (VoD) packages according to individual preferences, and to exert greater control over the channel content. The increasing popularity of SMS-based voting and chat services in TV programs also points to strong business opportunities in the area of interactive services.

IMS-enabled IPTV uses the Session Initiation Protocol (SIP), which provides a unified control scheme that can be used to control all types of media sessions as well as application services. It thus supports combined services and interactivity by joining different communications paradigms into a complete multimedia user experience.

The QR-code (Quick Response Code) is a matrix code, or two-dimensional bar code, which was created with the purpose of deriving a code which allowed its contents to be decoded at high speed. QR-codes are now used for inventory management in a wide variety of industries and has become the most popular type of two dimensional codes in Japan. Although initially used for tracking parts in vehicle manufacturing, the inclusion of the QR-Code as a reading software on camera phones in Japan, has led to a wide variety of new, consumer-oriented applications, aimed at relieving the user of the tedious task of entering data into their mobile phone. QR-codes storing addresses and URLs are becoming increasingly common in magazines and advertisements in Japan. The addition of QR-codes on business cards is also becoming common, greatly simplifying the task of entering the personal details of a new acquaintance into the address book of a users mobile phone. Consumers with capture programs and a PC with an RS-232C-interface may use a scanner to acquire data from a QR-code.

A user may build a personal profile by registering (bookmarking) products which are of interest. To bookmark a product, the user registers a code attached to the product by way of scanning a QR-code or, alternatively, by reading an RFID tag, colorcode or matrix code etc, and stores an associated product identity. Information related to the product may be stored in a database and/or on a media player, such as, e.g., a Network Personal Video Recorder (NPVR) . If such information comprises personalized advertisements, these may be viewed on, e.g., a TV, PC or a mobile device on a later occasion according to personal preferences.

One way of delivering personalized advertisements, which is applied in many of the commercial systems available today, is based on analysis of data entered by a user. Personalized advertising brings more value both for the user and for the content provider. In existing technology the personalization of the delivered content is based on previous searches that the user has performed, or on messages written earlier. The fact that this information is stored may also be transparent to the user.

A three-dimensional code system that integrates both online and offline, and analog, as well as digital components is based on the use of colorcodes. In this system a camera recognizes indexed codes, comprising specific data. A matrix of blocks and analog data pertaining to the number of colors are digitized and processed by a dedicated server, using unique addresses registered for each of the codes. A typical colorcode interaction flow starts with the authentication of a colorcode by a media player. A number associated with the colorcode is then transferred to a server. Finally, content or a set of actions represented by the colorcode, and associated with the number are transferred to the media player for further processing.

Figure 1 illustrates an IMS-based IPTV architecture which provides combined services and fixed-mobile convergence. Although specified for IPTV services, a similar architecture could be used for other interactive services as well, which are accessed via a common IMS system. The architecture of figure 1 includes an IMS Client environment 100, IMS application servers 101, a common IMS system 102, a transport layer 103 and a Service Delivery Platform (SDP) 104. The Service Delivery Platform offers a standardized set of support functions that can be shared among various service components.

The main functional blocks in the IMS client environment are the IPTV applications 105, other applications 106, such as combinational IMS services, the media client 107, the SIP client 108.

In the client environment, the IPTV applications are responsible for all interactions between IPTV services and users on their media players 110, for instance a set-top box/ TV, PC or cellular telephone. Each media player also hosts a media client, which receives and decodes the video and audio streams that make up the digital TV signals, and a SIP client which provides the control interface to the IMS core.

Depending on the application, media players will be required to support specific hardware 111, such as a camera, a scanner or a microphone, which may be attached to, or integrated with the media player.

The IPTV Application servers 112, being the central point of the IPTV service, manage all IPTV-specif ic functions not provided through IMS interfaces, and are connected to content providers 113. Each IPTV application server interfaces with the IMS core and functions provided by the service delivery platform.

The common IMS system includes the IMS core 114, comprising Call Session control Functions (CSCF's) 115, the Home Subscriber Server (HSS) 116 and IMS enablers 117. The IMS

core provides a control layer that controls services provided over fixed and mobile access networks. The Call Session control Function (CSCF), which is the central control point in IMS, provides SIP routing services and enforces Authentication and Authorization (AA). The HSS generally stores and provides user data in IMS. Additional complexity may be contained in additional databases. The most relevant IMS enablers for personalized TV service are the Presence and Group Management (PGM), and the IMS messaging (IMSM).

The Service Delivery Platform (SDP) provides a variety of support functions that can be shared along different types of services. The support functions comprises service provider support functions, such as different charging models (Charging) 118, Operation and Maintenance (O&M) 119 support functions and content related support functions, such as Electronic Service Guides (ESG) 120. ESGs provide information about available services and contain an electronic program guide that enables viewers to navigate, discover, and select programs and content by time, title, channel and genre.

A problem with existing solutions is that information collection associated with a user using a service is often done automatically, without actively involving the user. The user might even be unaware of the information collection taking place during the execution of a service. This kind of information collection does not encourage the user to update and to reuse the stored information for e.g. personalization purposes .

Another problem is that information collection is also often limited to Internet searches and ordering, while other activities which are associated with the human behaviour are not captured.

In addition, it is not always appropriate that immediate actions are triggered upon having collected information from a scanned code or a read RFID tag. This

problem raises the question of how to enable updating of information related to a certain activity, and a triggering of said activity, so that the activities can be scheduled in various different ways on the basis of personalized information stored and processed over time.

Yet another problem with presently used systems is how to execute personalized interaction of individual users, e.g. when different family members are watching content displayed on a shared device, such as a TV. Today this type of problem entails the use of an active login procedure for each family member, wherein each family member may authorize oneself by entering a secret PIN code to a shared TV remote control. This approach does neither provide for a flexible method for updating of user preferences, nor does it encourage user personalization associated with individual user interactivity.

SUMMARY

The object of the present invention is to address at least some of the problems outlined above. In particular, it is an object to provide personalized services for users having registered a media player in a multimedia network, such as IMS. This object and other are obtained by providing a method and an application server for providing personalized service instructions on the basis of information retrieved from a code, e.g. a colorcode, a QR-code or an RFID-tag.

In a first embodiment, a media player, e.g. a mobile telephone, is used for creating or updating personal data stored in a preference database. A user may request for a service from a second media player, wherein the personal data, stored in the preference database is used for the personalization .

A first user which has registered a first media player (UE A) to a multimedia network with a first identity

(ID_1), reads a code using a visual interface, integrated with or connected to the first media player. The code is decoded in the media player and a user preference message, comprising the content of the code and at least one identity, is created by an application of the media player, and forwarded to an application server, adapted to provide personalized services according to the claimed invention. In the application server, one user preference data record for each identity of the user preference message is created, or, if already existing, updated, on the basis of the content of the user preference message. A user wanting to activate a personalized service, sends a service request, comprising a request for a personalized service and the first identity, is received from a second, registered media player (UE B). In the application server, the user preference data record is retrieved from the preference database. On the basis of the content of the service request and the content of the user preference data record, the application server is requesting for a personalization message, comprising personalized instructions on the service, from a content database. The personalization message is then sent to the second media player for execution of the requested service.

In a second embodiment, a first media player, e.g. a mobile telephone, registered in a multimedia network with a first identity, is used for interacting with a service displayed on second media player, e.g. a set-top-box/TV.

A request for a personalized service is sent from a second media player (UE B) to an application server. In case of a unicast service distribution, service specific content, associated with the requested service, and a second user identity, with which the second media player has been registered, is encoded into a code and forwarded to the second media player where it is displayed. In case of a multicast service delivery, however, only content specific data is

forwarded to the second media player, where a colorcode, comprising the content specific data, encoded with the second identity (group_ID), is presented on the second media player.

A user may interact with the service by reading the code via a visual interface of a first media player (UE A). The content of the code is then decoded by an application adapted therefore and a user preference message, comprising the content of the code and a first identity (ID_1), to which the first media player is registered, is created and forwarded to the application server. This action may be followed by additional interactions between the first media player and the application server. Upon termination of the interaction, user preference data records, associated with, and linked to by the first identity and the second identity are then created, or, if already existing, updated in a preference database.

In a next step a personalized feedback message is created, according to the respective user preference data record and the content associated with the service request. The personalized feedback message is then forwarded to the first media player for invoking an application, adapted to execute the requested service. Depending on the selected service, the forwarded personalized feedback message may also trigger one or more additional interactions between the first user device and the application server, resulting in the creation and forwarding of an additional personalized feedback message to the first media player and/or to the second media player for a continuous, interactive service execution.

In a third embodiment, a first user, having a first media player wants to get access to presence information of a second user, having a second media player, and a code, e.g. a colorcode, comprising a personal identity. By reading the code, the first user may initiate a process for updating of a personal group-list, and for accessing the presence information of the second user.

A code, comprising a second identity of a second media player, registered in a multimedia network, is read via a visual interface of a first media player, registered in the multimedia network with a first identity. The code is decoded in the first media player and a user preference message, comprising the first and the second identity, representing a request for presence information associated with said second media player, is created and forwarded to the application server. At the application server a group-list is created or, if already existing, updated in the user preference data record linked to by the first identity.

For security reasons, the first user requests for authorization to access presence information of the second user from the second media player. Upon receiving a successful authorization, a subscription for the requested presence information may be initiated and the second media player is added to the group list.

The media players mentioned in this document may be any type of devices adapted for executing personalised services according to any of the embodiments described above, such as e.g. a mobile device, a PC, a laptop, a set-top-box connected to a TV or a PDA. The multimedia network, suitable for providing personalization of services according to any of the described embodiments, may be any type of network having the capabilities of handling the described signalling and of handling coded information, such as e.g. an IP Multimedia Subsystem (IMS).

The claimed invention also refers to an application server adapted to provide a personalized multimedia service to a user, having registered at least one media player in a multimedia network.

The application server comprises a communication means, adapted to communicate with a media player, registered in the multimedia network via at least one identity. The

communication means of the application server also is adapted to communicated with a preference database, comprising personalization content, associated with the registered media player. The personalization content is stored in a user preference data record, and the identity is linking the media player to the record.

The application server also comprises a preference data controlling means, which is adapted to either create or update a user preference data record when a user preference message, comprising the content of a code read by said media player, and an identity, is received from the media player. If no user preference data record linked to by the identity already exists, a user preference data record is created on the basis of the content of the code. If, however, a user preference data record is linked to by the identity, that user preference data record is updated on the basis of the content of the code.

The application server is also adapted to communicate with one or more content providers, comprising service specific data. A content provider may be defined as a content database, comprising service specific instructions, or a dedicated server, such as, e.g. a presence server.

A service controlling means of the application server is adapted to create personalized instructions on the basis of a service request received from a registered media player, the content of the user preference data record, and data retrieved from a content provider. The service controlling means finally forwards the created instructions to the media player, where the instructions may invoke a specific application.

A preference database according to any of the described embodiments may be distributed from, or integrated with the application server to which it is connected.

BRIEF DESCRIPTION OF THE DRAWINGS

-Figure 1 is a block diagram schematically illustrating an IMS-based IPTV architecture for combined services and fixed-mobile convergence according to the prior art.

-Figure 2 is a block diagram schematically illustrating an IMS-based system which provides interactive services according to one embodiment.

-Figure 3 is a signalling diagram where a user registered in an IMS network subscribes to an interactive, personalized service and wherein the personalization is dependent on information previously retrieved from a QR-code, according to another embodiment.

-Figure 4, is another signalling diagram where interactive, personalized services are provided both to an individual user and to a group of users, and where the services are personalized in dependence of information retrieved from a colorcode, according to yet another embodiment.

-Figure 5 is another signalling diagram, illustrating how a first user registered in an IMS network can add a second IMS registered user to a group-list in order to get access to the second users presence information, wherein the second user is identified from a colorcode, according to another embodiment.

-Figure 6 is a block diagram, schematically illustrating an application server adapted to create and update user preference data records, and to provide personalized services to users .

-Figure 7 is a schematically illustration of user preference data records, each being linked to by a user identity.

DETAILED DESCRIPTION

Briefly described, the present invention provides a method and an application server for providing personalized services to a media player, registered in a multimedia

network, on the basis of a the content of a code, read with a code reading entity attached to or integrated with a media player .

A common IMS-based system 200 providing personalized services to media players 201 in accordance with one embodiment of the claimed invention is described in figure 2. Different types of media players, each comprising a SIP client (not shown) , provide the media players access to the common IMS system. A media player adapted for interaction with the common IMS system may be any kind of electronic equipment suitable for hosting SIP client functionality, such as e.g. a mobile device, a set-top-box/TV (STB/TV), a PC or a PDA. Each media player may have one or more applications stored on a memory space, which are invoked by a personalization message, sent from an application server in response to a service request. The respective application may be invoked as a result from a communication between the media player and the application server, dedicated to provide a service requested, either from a media player, or from a content provider. A user of a media player who has the intention of personalizing a service, may initially read a code, carrying service specific information and/or one or more identities, via a code reading entity, e.g. a scanner or a camera. Each media player in the figure has means for reading and decoding a code 203, e.g. a QR-code, a colorcode or an RFID-tag.

When a code has been read, the media player establishes a connection with an IMS application server 204, via the CSCF of the IMS core. The IMS system illustrated in the figure comprises a number of IMS application servers, each adapted to service different types of media players. IMS application server 1, provides services to mobile telephones, IMS application server 2, provides television services, while IMS application server 3, provides services adapted for PC's, and a default server, IMS AS X, may provide services to other

types of specially adapted media players. Via the IMS core, one of the IMS application servers (204, IMS AS 1-X), responsible for a requested service is addressed, wherein the content of the code, together with a personal identity to which the respective media player has been registered, is decoded and forwarded to the respective IMS application server. The IMS application server creates a user preference data record, which is stored in a preference database (207). The preference database may be located in the IMS core or at the content provider premises, depending on e.g. the business model and the O&D structure chosen by the respective service provider. The preference database, will be further described below with reference to figure 6.

The IMS application server also have access to one or more content providers 206, comprising service specific content, to be used when setting up personalized instructions to a media player from which a personalized service, e.g. specified advertisements. The content provider may also be accessed from the IMS application server, upon receiving a request for a personalized service from a media player.

A personalized service may be actively requested by a user of media player, or triggered by a predetermined, condition such as time of day. According to one embodiment of the invention, a request for a service is sent from a media player as a SIP message, comprising a feature tag, specifying instructions associated with the requested service. In case no feature tag is attached to the SIP message, a default instruction may be attached to the body of the SIP message. Upon receiving the SIP message, including a feature tag or a default instruction by an IMS application server adapted to distribute the requested service, the IMS application server requests for information from the respective user preference data record, stored in the preference database. Depending on the content of the service request and the content of the user

preference data record, relevant content, sent from a content provider is assembled, forming a personalization message by an application in the IMS application server. The content retrieved from the content provider may have the form of an Extensible Markup Language XML. The IMS application server attaches a feature tag (FT1-FTX) , corresponding to the service request, to the XML. The message, now comprising an XML and a feature tag, is then forwarded to the respective media player for which the requested service is intended, and a personalized service is delivered to the media player.

A strolling user may come across a product he or she finds interesting. By reading a QR-code, comprising a product identity, which is attached to the product, with a QR-code reader, attached to or integrated with the IMS registered media player, the content retrieved with the QR-code reader triggers a procedure for creating or updating a user preference data record linked to, and associated with the personal IMS identity to which the media player is registered. The information retrieved from the QR-code described above may also be used for updating the user preference data record in such a way that the user preference data record is modified according to the behaviour of the user of the media player. By linking each user to a specific user preference data record by the identity of the user, a media player may be shared by a plurality of users. Each user, wanting to personalize a service may register the media player using a personal identity. This identity will then be linking the user to a dedicated user preference data record, in which personalized data, associated with that user is stored and updated.

How the user preferences, read from a code, is effecting the content retrieved from the content provider, is not the scope of the claimed invention and, thus, this process will not be described any further in this document.

A signalling procedure illustrating one embodiment of the claimed invention where a user, having registered a media player in an IMS network, subscribes to an interactive, personalized service, will now be described with reference to the signalling diagram in figure 3. In the figure, a first media player, UE A 300, e.g. a mobile terminal, is registered to a personal IMS identity (ID_1), e.g. SIP:user@net.com. In a first **step 3:1,** the user reads a QR-code 301 with an integrated or attached code reader 302, wherein an application is decoding the content of the QR-code and creates a message, comprising the content of the QR-code and ID_1 in **step 3:2.** In UE A, A SIP client 303 initiates a communication with the IMS network (IMS core), via CSCF 304, by creating a user preference message, using a SIP MESSAGE method with a feature tag, QR_AD, for transmission of the content of the QR-code and ID_1 to CSCF in **step 3:3,** and further to an IMS application server 305 in **step 3:4.** Upon receiving the scanned information at the IMS application server, a user preference data record linked to by ID_1, is created in a preference database 306 in **step 3:5,** or if already existing, relevant parts of the user preference data record is updated according to the content of the received user preference message. The creating/updating process is verified with a 200 OK message sent to CSCF in **step 3:6,** and terminated in UE A in **step 3:7.**

A user wanting to receive personalized services via another media player, UE B 307, i.e. an STB/TV, which depends on the information earlier retrieved from the QR-code, may request for a personalized service upon having registered UE B to IMS. By registering UE B to the same personal IMS identity as UE A, i.e. SIP:user@net.com, both media players will be linked to the same user preference data record. By forwarding the service request, comprising specific instructions within a feature tag, from UE B, to the IMS application server, the user instructs the IMS application server to deliver

personalized services to the TV-screen of UE B. This instruction could for example indicate the desire to receive a certain category of advertisements on the families TV screen at certain, predefined occasions. The message is assembled as an SIP REGISTER message and the requested service is specified by the attached feature tag, TV_QR_AD. In **step 3:8** the message is sent to the IMS application server. The IMS application server receiving the service request from UE B, requests for the user preference data record linked to by personal ID_1 in **step 3:9,** from a preference database. Next, in **step 3:10,** the IMS application server requests for servive specific instructions, e.g. XML instructions, from a content database 308. In the requesting IMS application server, a SIP MESSAGE, forming a personalization message, comprising the feature tag, TV_QR_AD and an XML description, adapted according to the content of the respective preference data record and the service request, is assembled. In **step 3:11,** the personalization message is sent to CSCF, and in **step 3:12** it is forwarded to UE B. In UE B, an application interprets the received personalization message and the requested service is executed in a personalized manner.

In a home with a media player, i.e. an STB/TV, which is registered to IMS via a family IMS identity (a group IMS identity), several individuals, e.g. family members, may share the same STB/TV. A plurality of the family members may also have individual media players, e.g. mobile telephones, each being registered to IMS via different individual personal IMS identities. In order to be able to simultaneously provide personalized services to a plurality of users wherein content is displayed on a shared device, e.g. a TV screen, and in order to provide automatic creation/updating of individual, as well as group user preferences, stored in the respective user preference data record, an alternative embodiment will be

required. Such an alternative embodiment will now be described with reference to figure 4.

In the exemplary embodiment of figure 4, a first media player 400, e.g. a mobile terminal, denoted UE A, and a second media player 401, e.g. an STB/TV, denoted UE B, are both registered to IMS, linking the respective media player to a respective user preference data record via a group IMS identity, i.e. SIP:groupl@net.com, for UE B, and an individual IMS identity, i.e. SIP:userl@net.com for UE A. A plurality of additional media players could be registered to individual IMS identities as well, and, thus, personalized services could be provided for additional users. A user selects a service, e.g. a TV show, by inputting instructions into UE B, which are forwarded to a dedicated IMS application server 402, via CSCF 403.

In case of a unicast service distribution, where the group IMS identity, to which UE B is registered, is included in the service request, a colorcode, carrying both content specific information and the group IMS identity, is generated by an IMS application server, capable of providing said service. The colorcode is forwarded to UE B in an initial **step 4:1a,** and presented on the display of UE B.

In case of a multicast service delivery scenario, however, only the content specific data is sent to UE B by the respective IMS application server for presentation on the TV screen. For a multicast service delivery, the colorcode itself is generated by an IPTV code generating application 404 in UE B, where the group IMS identity, to which UE B is registered also is encoded into the colorcode in an alternative **step 4:1b.**

The colorcode, displayed on the TV screen, will now comprise content specific information, i.e. voting information, which is associated with the respective show on display. Via a visual interface, e.g. a camera, which is

integrated with, or attached to UE A, the colorcode is registered in by a code reading application 405 in **step 4:2. In step 4:3,** a SIP Client 406 in UE A decodes the colorcode, and forms a user preference message, containing the code specific information and the personal IMS identity, ID_1. Upon terminating the interaction with the record, a feature tag, TV_CC_1, is attached to the user preference message, forming a SIP MESSAGE, which is forwarded to CSCF in **step 4:4. In step 4:5,** the message is forwarded to the IMS application server. The graphic user interface (GUI) of UE A also enables the user to interact with IMS application server. This optional interaction, which may result in a varying number of messages sent between UE A and the IMS application server, is illustrated with **step 4:6.** Such an interaction may introduce additional personalization of a particular service. In the IMS application server, both the personal IMS identity and the group IMS identity are extracted during the interaction. Depending on the result from the interaction, the relevant sections of one or both of the user preference data records, linked to by the respective IMS identities, are updated in **step 4:7,** accessing the respective records from a preference database 407. If no preference data record linked to by the respective identity already exists, such a record is instead created upon receiving the user preference message.

In the IMS application server, the content of the respective one or both user preference data records triggers an application to create a personalization message in **step 4:8,** wherein relevant service specific content is retrieved from a content database 408. The personalization message is forwarded to CSCF in **step 4:9,** and **to UE A in step 4:10,** where the SIP client of UE A is triggering an application to execute the requested, personalized service.

Optionally, the personalized service could involve also UE B, registered with the group IMS identity. Such a

personalization message, which is forwarded to UE B in a final, optional, **step 4:11** may comprise the same information as the one sent to UE A, or it may comprise information according to another configuration, depending on the content of the user preference data record associated with the group IMS identity. In UE B SIP, client 409 of UE B is triggering an application to execute the requested service, according to the received personalization message.

If a service involving a business transaction is chosen from any of the registered media players, additional steps may be required. Such an interaction may e.g. enable interconnection between the respective media player and a third party business application.

In yet another embodiment, which will now be described with reference to figure 5, the content of a read code, e.g. a color code 500, may give a first user A, using a media player (UE A) 501, access to presence information of a second user, B, using a second media player (UE B) 502, wherein both media players are registered to IMS. UE A is registered to ID_A, e.g. SIP:userA@net.com, and UE B is registered to ID_B, e.g. SIP:userB@net.com. The colorcode, being attached to user B, comprising user B's user identity, ID_A, is read by a code reader 503, e.g. a scanner, by user A in a first **step 5:1. In step 5:2,** the read content is decoded by a decoding application, stored in UE A, and ID_A is appended to the colorcode. A SIP message, SIP MESSAGE FT:GLM_AS, comprising a feature tag, is then formed by the SIP client 504 in UE A. The SIP MESSAGE is forwarded to CSCF 405 in **step 5:3,** and to the respective IMS application server 406 in **step 5:4.** At the IMS application server, an existing group-list is to by ID_A and stored in a preference data record in a preference database (not shown), which may be distributed from, or integrated with the IMS application server, is updated with data related to user B (ID_B) in **step 5:5.** Next,

a notification is sent as a 200 OK message to CSCF in **step 5:6,** and to UE A in a next **step 5:7.** Before user A get access to user B's presence information, an authorisation request has to be approved by user B. Such an authorisation is executed in **step 5:8,** involving the SIP client of UE A and of UE B 507. When authorised, user A will have access to user B's presence information, by way of accessing a presence server 508, which is illustrated with **step 5:9.**

An IMS application server adapted to provide personalized services to users according to one embodiment of the claimed invention will now be described with reference to figure 6.

An IMS application server 600 adapted to provide personalized multimedia services to users registered in a multimedia network (607) according to one of the embodiments described in this document is schematically illustrated in figure 6. A user preference message, comprising content retrieved from a code and at least one identity, is received by a communication means 601 of the IMS application server. The communication means is communicating with one or more preference databases 603, in which personalization content is stored in a user preference data record. The identity with which a media player (606) has been registered is linking the user preference message to the respective user preference data record. The communication means also is in connection with one or more content databases, from which service related information may be retrieved, for setting-up a personalized instruction, i.e. a personalization message, to be used for personalizing a service. Alternatively, the IMS application server may access a dedicated server, such as e.g. a presence server, from which service specific information, associated with the respective requested service may be retrieved.

The content of the user preference message is forwarded to a preference data controlling means 602, adapted

to create a user preference data record associated with, and linked to by the identity, included in the user preference message. The content of the created user preference data record will be based on the content of the code. If a preference data record already exists, the preference data controlling means is instead adapted to update the respective record on the basis of the content of the code. The IMS application server have access to one or more preference databases 603, wherein the user preference data records are stored. As illustrated with the dotted box, the preference database may be integrated with the IMS application server.

The solid box illustrates another alternative architecture wherein the preference database is distributed from the application server.

In an alternative embodiment, illustrated with a dotted arrow, the preference data controlling means may be in direct contact with the preference database, instead of being connected via the communication means.

According to one embodiment, a request for a personalized service, received by communication means, 601, is forwarded to a service controlling means 604, adapted to personalize the requested service on the basis of the service request, the content of the user preference data linked to by the identity of the request, and data retrieved from a connected content provider 605. The content provider may be a content database, comprising service specific instructions, or a dedicated server, such as e.g. a presence server. A dedicated server may initiate a personalized service according to predetermined rules such as, e.g. time if the day, and, thus, will under certain circumstances be able to act in a manner similar to a registered media player. By taking the content retrieved from the service request, the respective preference data record, and the content from the content provider into consideration, according to certain applications

of the service controlling means, personalized instructions in the form of a personalized message is assembled and forwarded to the communication means for further distribution to the requesting media player.

Figure 7 schematically illustrates the content of a preference database 603. One or more preference databases, may be accessed from the IMS application servers of the IMS network according to any of the embodiments proposed in this document. When a preference message, comprising content read from a code and a previously unknown identity (ID_1,ID_2), is received by an IMS application server, a user preference data record (700,701) is created by means of the IMS application server. If, however, a link to a user preference data record already exists, relevant content of the user preference data record is updated in the preference database. Each user preference data record may comprise user preference data (702), represented by trigger rules set by certain feature tags. The rules stored in the user preference data records may be triggered upon receiving a service request or may be triggered automatically to deliver a personalized service to a media player registered with a user identity according to a predetermined rule such as i.e. on a specified time of the day.

While the present invention has been described with reference to exemplary embodiments, the description is generally only intended to illustrate the inventive concept and should not be taken as limiting the scope of the invention, which is defined by the appended claims.

CLAIMS

1. A method of personalizing a multimedia service for a first user, wherein said first user has registered a first media player (UE A, 300, 400, 501) in a multimedia network, comprising the following steps:
-reading a code (3:1,4:2,5:1) via a visual interface of said first media player,
-decoding in said first media player said code and creating a user preference message (4:3,5:2), comprising the content of said code and at least one identity,
-forwarding said user preference message (3:3,3:4,4:4,4:5, 5:3,5:4), to an application server (IMS AS, 305, 402, 506, 600), capable of providing said service,
-creating or updating at least one user preference data record (3:5,4:7,5:5), each linked to by one of said at least one identity, on the basis of the content of said code, and,
-personalizing in said application server a service (3:10, 4:8,5:9), according to one of said at least one created or updated user preference data records linked to by one of said at least one identities.

2. A method according to claim 1, wherein:
-in said decoding and creating step, said at least one identity is a first identity (ID_1), with which said first media player has been registered,
-in said forwarding step, said user preference message is a user preference message, and,
-in said creating or updating step, a first user preference data record, linked to by said first identity, is stored in a preference database (306).

3. A method according to claim 2, wherein said personalizing step comprises the further steps:

-receiving a service request (307) from a second media player (UE B,307), registered with said first identity, wherein said service request comprises a request for a personalized service and said first identity,
-requesting for said user preference data record (3:9) from said preference database (306),
-requesting for service specific instructions (3:10) from said content database (308),
-creating, on the basis of the content of said service request, the content of said user preference data record and said service specific instructions a personalization message, and,
-forwarding said personalization message (3:11,3:12) to said second media player for execution of said requested service .

4. A method according to claim 1, wherein:
-in said code reading step, said code is displayed on a second media player (UE B,401) (400b), which has been registered with a second identity (ID_2), said second identity being encoded into said code,
-in said decoding and creating step, said at least one identity is a first identity, with which a first media player is registered, and said second identity, and,
-in said forwarding step, said user preference message is a user preference message.

5. A method according to claim 4, wherein prior to said code reading step the following steps are executed:
-requesting from said second media player for a personalized service (4:Ia),
-encoding service specific content, associated with the requested service, and said second user identity into a code

in said application server, capable of providing said service, and,

-forwarding said code to said second media player.

6. A method according to claim 4, wherein prior to said code reading step, the following steps are executed:

-requesting from said second media player for a personalized service, and,

-forwarding service specific content, associated with said requested service, from said application server, capable of providing said service, to said second media player, where said content is encoded into a code together with said second user identity (4:1b).

7. A method according to claim 5 or 6, wherein:

-in said forwarding step, after forwarding said user preference message, said first user is interacting with content associated with said service in said application server (4:6), via a user interface of said first media player .

8. A method according to claim 6 or 7, wherein:

-said creating or updating comprises creating or updating user preference data records associated with said first and said second identity.

9. A method according to claim 8, comprising the further steps:

-creating a personalized message according to said at least one user preference data record, and content associated with said service, and,

-forwarding said personalized feedback message to said first media player (4:9,4:10) for invoking an application, triggered by said requested service.

10. A method according to claim 9, wherein said forwarded personalized feedback message triggers at least one additional interaction between said first user device and said application server, and wherein said at least one interaction results in the creation and forwarding of another personalized feedback message to said first media player for a continuous, interactive service execution .

11. A method according to claim 9 or 10, comprising the further step :

-creating an additional personalized feedback message in accordance with the result from said at least one additional interaction, and forwarding said additional personalized feedback message (4:11) to said second media player for execution of said service.

12. A method according to any of claims 4-11, wherein said first identity is an individual identity and said second identity is a group identity.

13. A method according to claim 1 wherein:

-in said code reading step, said code comprises a second identity, with which a second media player (UE B,502) is registered,

-in said decoding and creating step, said at least one identity is a first identity, with which said first media player is registered, and said second identity,

-in said forwarding step, said user preference message is a request for presence information associated with said second media player, and,

-in said creating or updating step, said creating or updating comprises creating or updating a group-list in said user preference data record, linked to by said first

identity .

14. A method according to claim 13, comprising the following further steps:
-requesting from said first user device for authorization (5:8) to access presence information of said second user device from said second media player, and,
-upon receiving a successful authorization, initiating a subscription for said presence information and adding said second media player to said group-list (5:9).

15. A method according to any of the preceding claims, wherein said first media player is any of a mobile device, a PC, a laptop, a set-top-box/TV or a PDA.

16. A method according to any of claims 3-14, wherein said second media player is any of a mobile device, a PC, a laptop, a set-top-box/TV or a PDA.

17. A method according to any of the preceding claims, wherein said visual interface is attached to said first user interface .

18. A method according to any of claims 1-16, wherein said visual interface is integrated with said first user interface .

19. A method according to any of the preceding claims, wherein said multimedia network is a IP Multimedia Subsystem (IMS)..

20. An application server (600) in a multimedia network (607), adapted to provide a personalized multimedia service to a user having registered at least one media player (606) in said multimedia network, said server comprising:

-communication means (601) adapted to communicate with:

-a media player, registered in said multimedia network via at least one identity, and,

-at least one preference database (603), comprising personalization content associated with said registered media player, said personalization content being stored in a user preference data record (700,701), and wherein said user preference data record is linked to by one of said at least one identities, and,

-preference data controlling means (602) adapted to perform either of the following steps upon receiving a user preference message from said media player, comprising the content of a code read by said media player, and one of said at least one identities:

-create a user preference data record on the basis of the content of said code if no preference data record linked to by said identity already exists,

or,

-update a user preference data record on the basis of the content of said code if said user preference data record linked to by said identity already exists.

21. An application server according to claim 20, wherein said communication means further is adapted to communicate with at least one content provider (605) ,comprising service specific data, and, wherein said application server further comprises :

-service controlling means (604) adapted to:

-create personalized instructions on the basis of a service request received from a registered media player, the content of said user preference data record, and data retrieved from said at least one content provider,

-forward the created instructions to said media player.

22. An application server according to claim 20 or 21, wherein said preference database is distributed.

23. An application server according to claim 20 or 21, wherein said preference database is integrated with said application server.

24. An application server according to any of claims 20-23, wherein said content provider is a content database.

25. An application server according to any of claims 20-23, wherein said content provider is a presence server.

26. An application server according to any of claims 21-25, wherein said personalized instructions invoke an application in said media player.

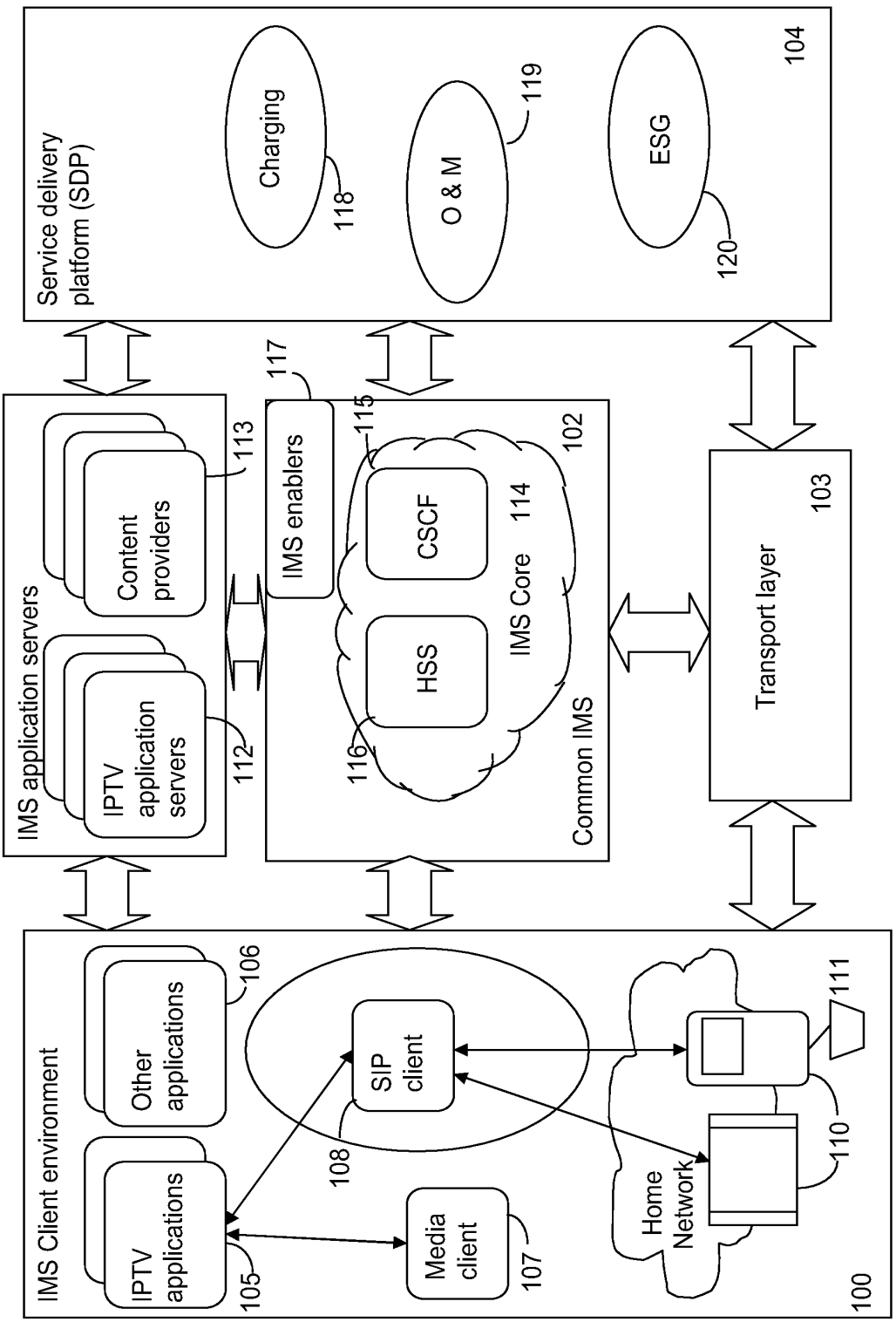
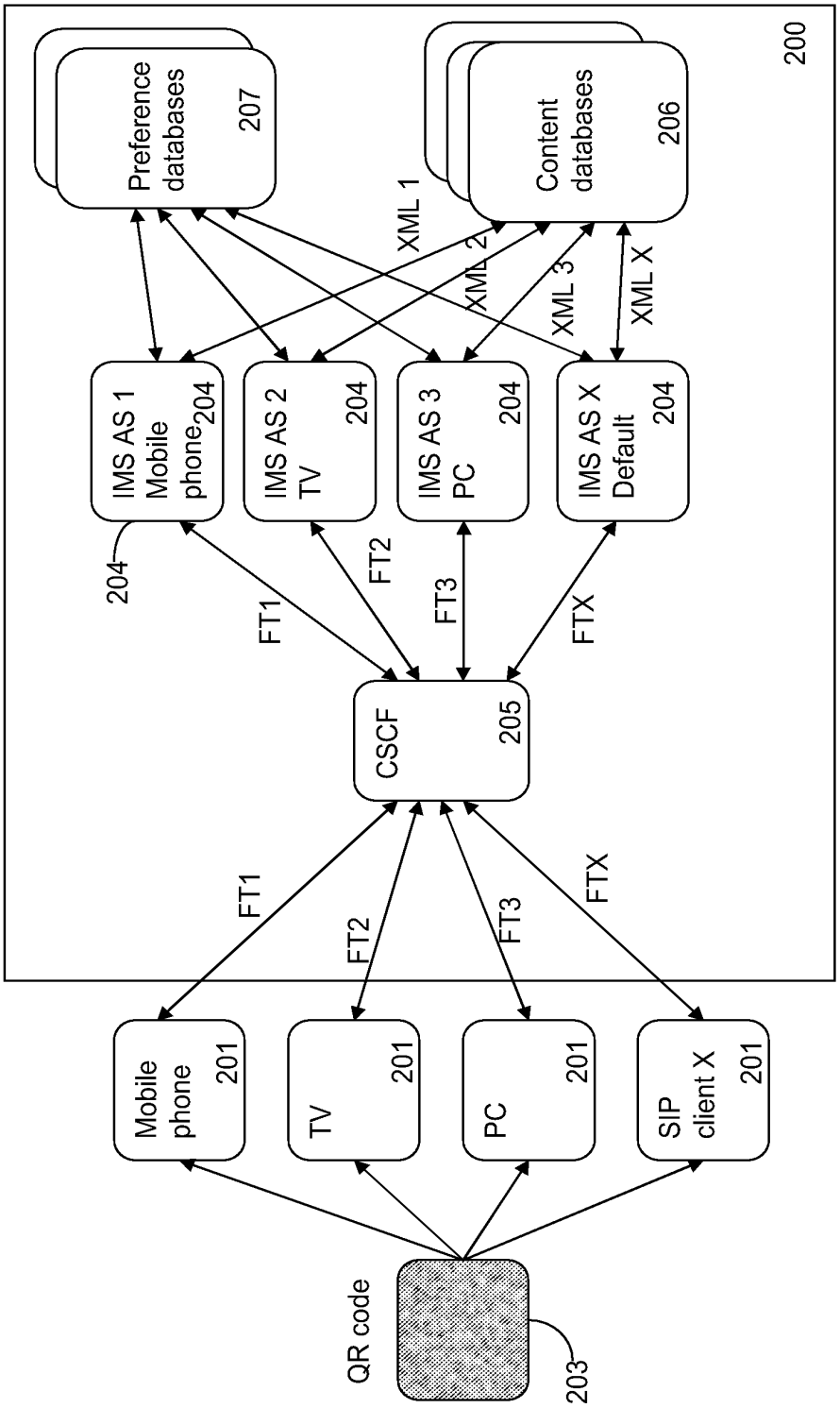

Service delivery platform (SDP)
104
Charging
118
O & M
119
ESG
120
IMS application servers
IPTV application servers
112
Content providers
113
IMS enablers
117
115
CSCF
HSS
116
IMS Core
114
102
Common IMS
Transport layer
103
IMS Client environment
IPTV applications
105
Other applications
106
SIP client
108
Media client
107
Home Network
110
111
100

Figure 1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Preference databases 207
Content databases 206
XML 1
XML 2
XML 3
XML X
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IMS AS 2 TV 204
IMS AS 3 PC 204
IMS AS X Default 204
204
FT1
FT2
FT3
FTX
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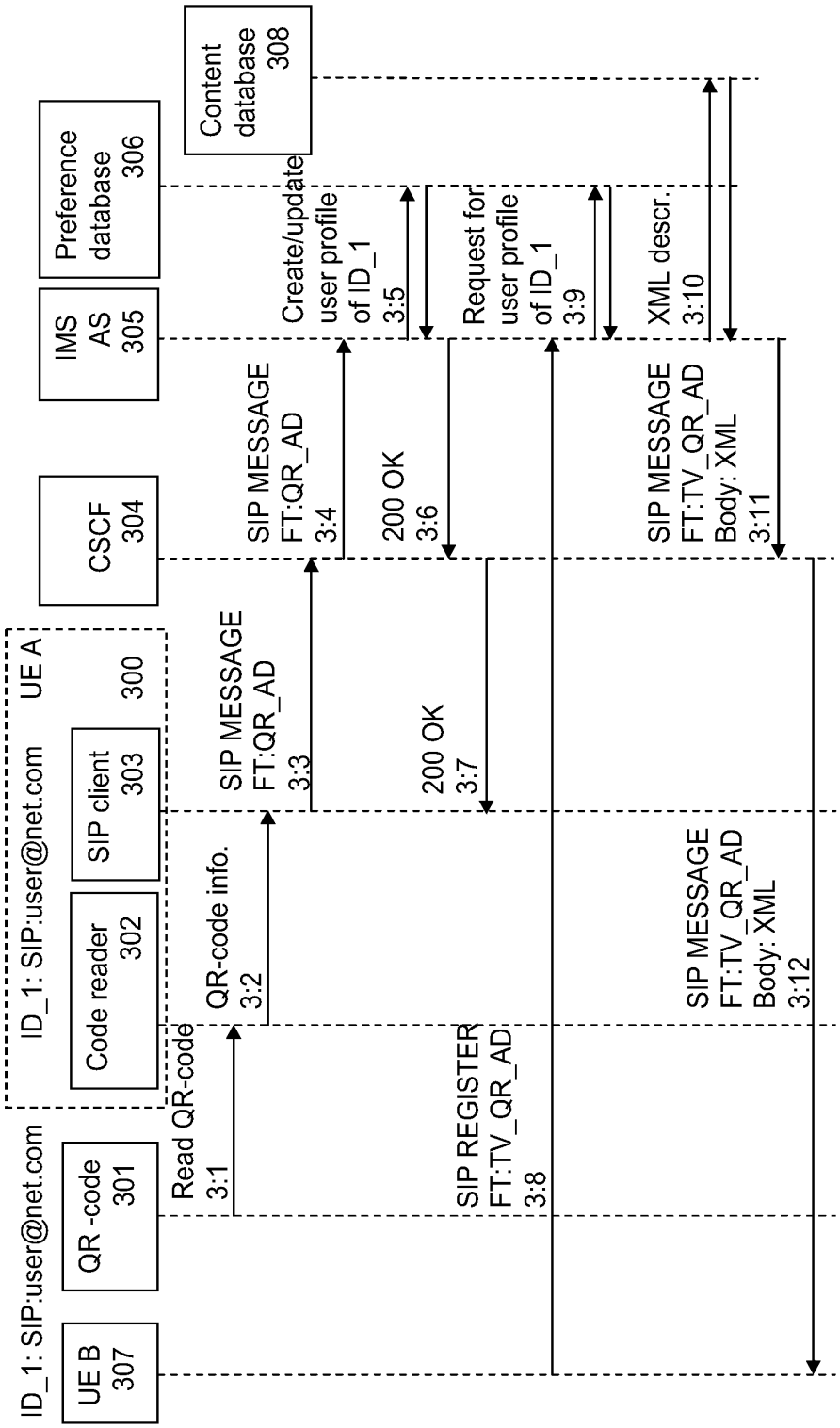
FT1
FT2
FT3
FTX
Mobile phone 201
TV 201
PC 201
SIP client X 201
QR code
203

Figure 2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Code reader 302
SIP client 303
ID_1: SIP:user@net.com
UE A
300
CSCF 304
IMS AS 305
Preference database 306
Content database 308
Read QR-code 3:1
QR-code info. 3:2
SIP MESSAGE FT:QR_AD 3:3
SIP MESSAGE FT:QR_AD 3:4
Create/update user profile of ID_1 3:5
200 OK 3:6
200 OK 3:7
SIP REGISTER FT:TV_QR_AD 3:8
Request for user profile of ID_1 3:9
XML descr. 3:10
SIP MESSAGE FT:TV_QR_AD Body: XML 3:11
SIP MESSAGE FT:TV_QR_AD Body: XML 3:12

Figure 3

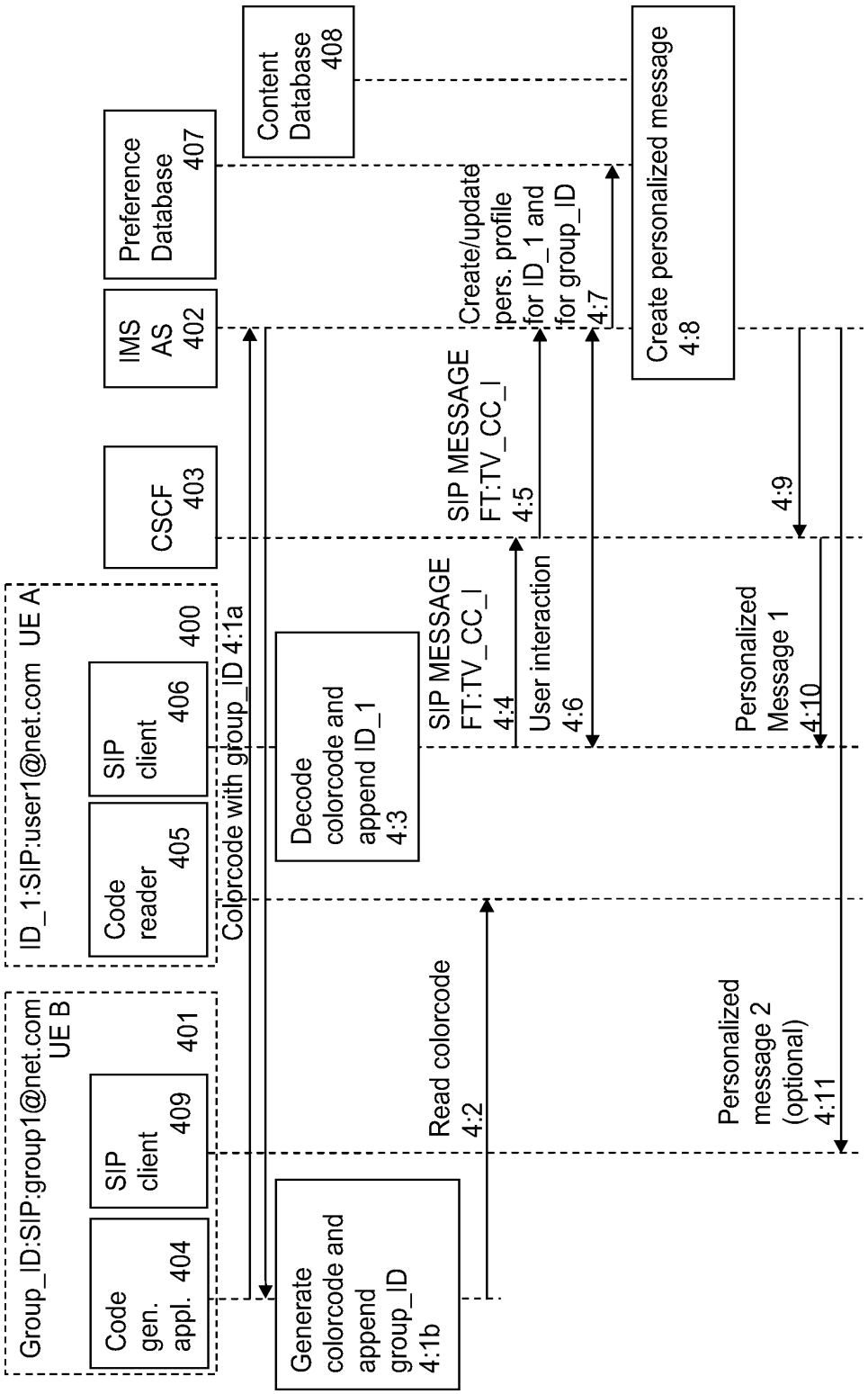
Group_ID:SIP:group1@net.com
UE B
Code gen. appl. 404
SIP client 409
401
ID_1:SIP:user1@net.com UE A
Code reader 405
SIP client 406
400
CSCF 403
IMS AS 402
Preference Database 407
Content Database 408
Colprcode with group_ID 4:1a
Generate colorcode and append group_ID 4:1b
Read colorcode 4:2
Decode colorcode and append ID_1 4:3
SIP MESSAGE FT:TV_CC_I 4:4
User interaction 4:6
SIP MESSAGE FT:TV_CC_I 4:5
Create/update pers. profile for ID_1 and for group_ID 4:7
Create personalized message 4:8
4:9
Personalized Message 1 4:10
Personalized message 2 (optional) 4:11

Figure 4

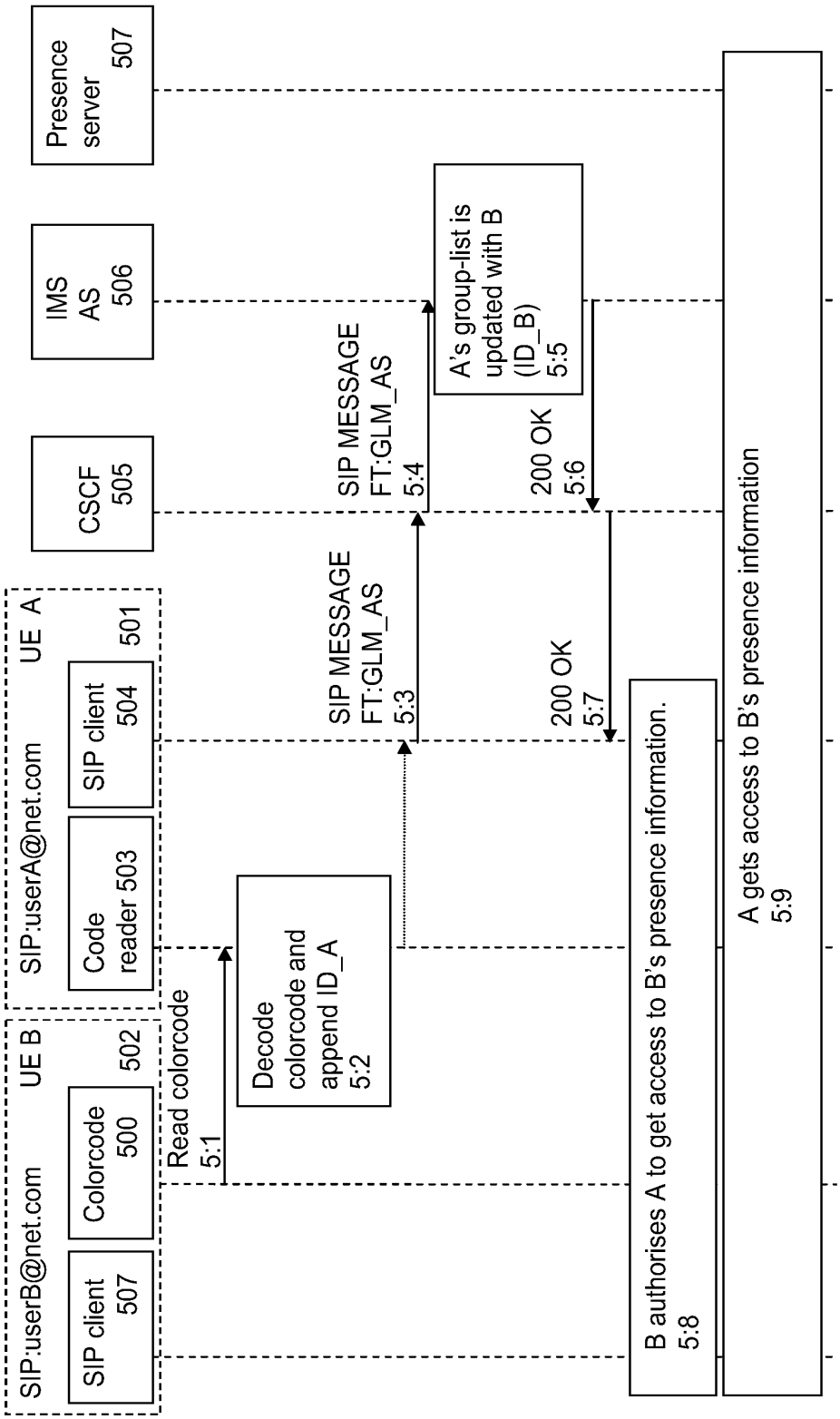
Presence server 507
IMS AS 506
CSCF 505
UE A
SIP:userA@net.com
Code reader 503
SIP client 504
501
UE B
SIP:userB@net.com
SIP client 507
Colorcode 500
502
Read colorcode 5:1
Decode colorcode and append ID_A 5:2
SIP MESSAGE FT:GLM_AS 5:3
SIP MESSAGE FT:GLM_AS 5:4
A's group-list is updated with B (ID_B) 5:5
200 OK 5:6
200 OK 5:7
B authorises A to get access to B's presence information. 5:8
A gets access to B's presence information 5:9

Figure 5

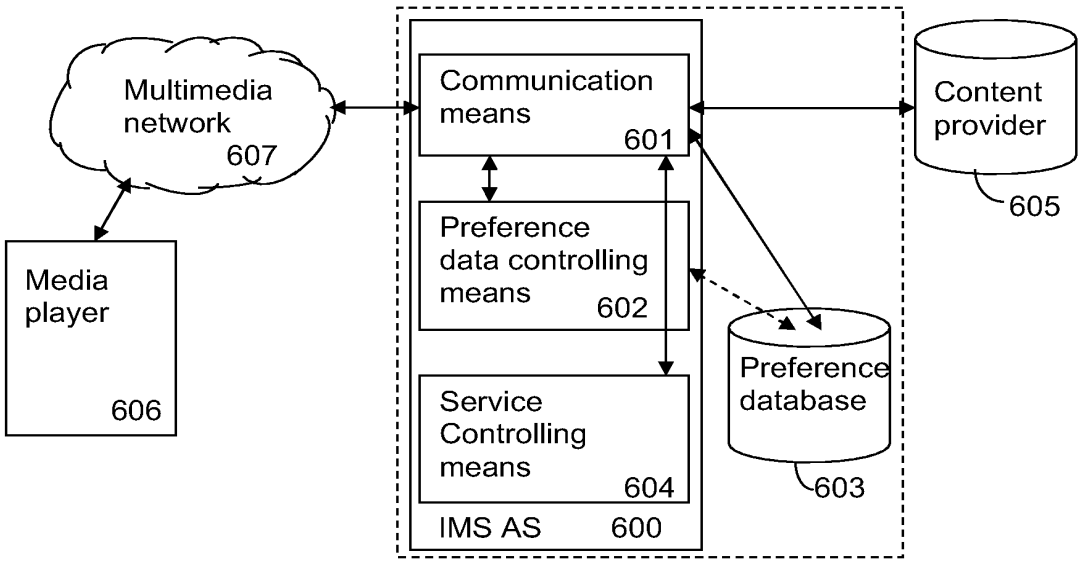

Figure 6

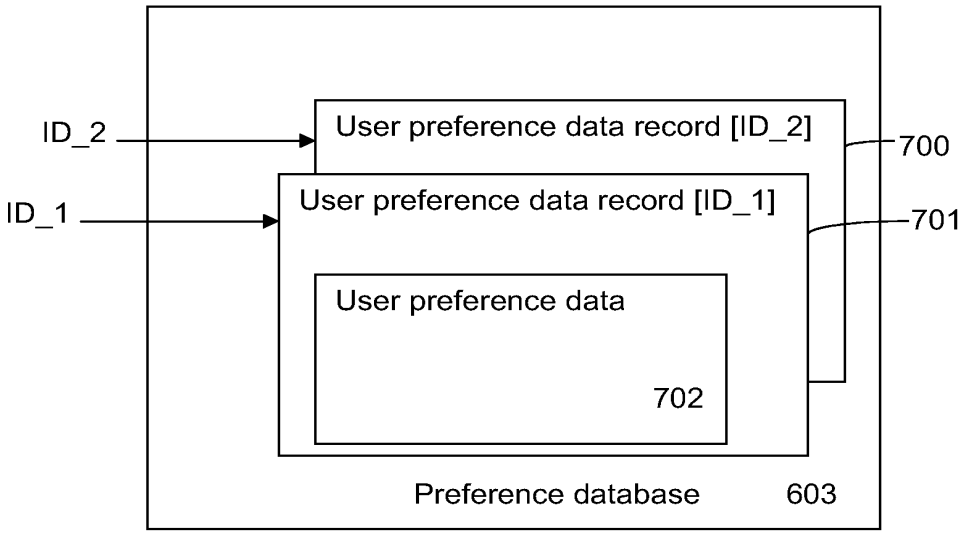

Figure 7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2008/050141

A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: H04N, H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE, DK, FI, NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category"	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	WO 2008033552 A2 (IWATCHNOW INC.), 20 March 2008 (20.03.2008), abstract --	1-26
A	US 20030093507 A1 (SHAPIRO, J J), 15 May 2003 (15.05.2003) --	1-26
A	US 6934837 B1 (JAISIMHA, M Y ET AL.), 23 August 2005 (23.08.2005) --	1-26
A	US 20060170945 A1 (BILL, D S), 3 August 2006 (03.08.2006) --	1-26

[ ] Further documents are listed in the continuation of Box C. [X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
10 July 2008	14 -07- 2008
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer Henrik Andersson/PR Telephone No. + 46 8 782 25 00

Form PCT/ISA/210 (second sheet) (July 2008)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2008/050141

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2366164 A (ANODYNE DEVELOPMENTS LIMITED ET AL), 11 February 2002 (27.02.2002) --	1-26
A	US 5721827 A (LOGAN, J ET AL), 24 February 1998 (24.02.1998) --	1-26
A	WO 2005115107 A2 (DISNEY ENTERPRISES, INC.), 8 December 2005 (08.12.2005) --	1-26

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2008/050141

International patent classification (IPC)
H04N 7/173 (2006.01)
H04L 29/06 (2006.01)

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Cited literature, if any, will be enclosed in paper form.

WO	2008033552	A2	20/03/2008	NONE			
us	20030093507	A1	15/05/2003	US	20050149490	A	07/07/2005
				US	20060242275	A	26/10/2006
us	6934837	B1	23/08/2005	US	6487663	B	26/11/2002
				US	6671807	B	30/12/2003
us	20060170945	A1	03/08/2006	US	20060143647	A	29/06/2006
				WO	2007079126	A	12/07/2007
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				GB	0016832	D	00/00/0000
				GB	0103026	D	00/00/0000
				WO	0205500	A	17/01/2002
US	5721827	A	24/02/1998	NONE			
WO	2005115107	A2	08/12/2005	US	20060005226	A	05/01/2006

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(74) Agents: **GUILIANO, Joseph, M.** et al; Fish & Neave IP Group, Ropes & Gray LLP, 1211 Avenue of the Americas, New York, NY 10036-8704 (US).

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Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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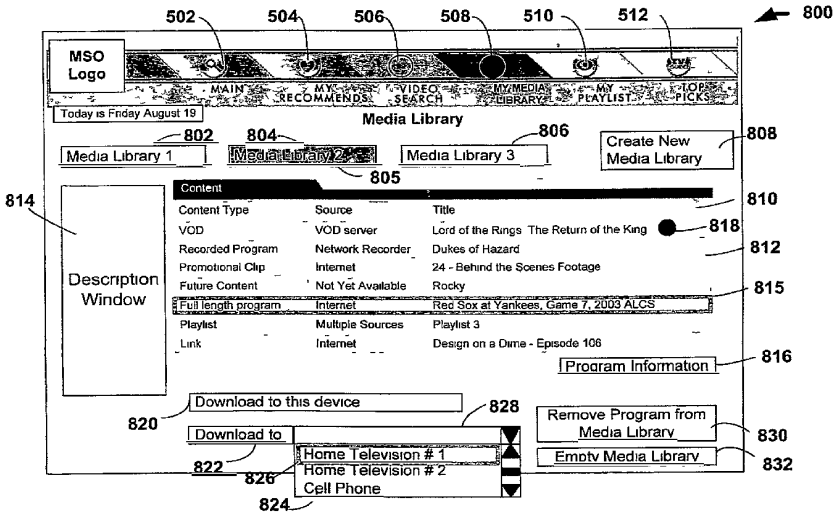
(54) **Title:** MEDIA LIBRARY IN AN INTERACTIVE MEDIA GUIDANCE APPLICATION



(57) **Abstract:** Systems and methods for selecting content for a media library using an interactive media guidance application are provided. The user may search for content to select by entering search terms in a search page and selecting content from search results in a search results page. The user may also select content by directly entering identification for the content, selecting content from a message suggesting content, or by selecting content from- interactive media guidance application pages. The content may include content that is currently available and bookmarks for content that is not yet available. For such bookmarks, when the content becomes available, the interactive media guidance application may notify the user and/or add the actual content to the media library. The user may access the media library from any user device and perform any suitable operation with the content of the media library (e.g., download content to a user device or playback content).

WO 2007/078745 A1

MEDIA LIBRARY IN AN INTERACTIVE MEDIA GUIDANCE APPLICATION

Background of the Invention

[0001] This invention relates to interactive media guidance applications, and more particularly, to interactive media guidance applications that a user can connect to and access from a multitude of user devices.

[0002] Interactive media guidance applications, for example interactive television program guides, allow users to view screens of interactive television program listings, search for programs or content, and select one or more search results for immediate playback or future use (e.g., set a reminder). In some embodiments, the interactive media guidance applications may be online interactive media guidance applications provided to users over an Internet communications link (e.g., using interactive media guidance application web pages) .

[0003] Known interactive media guidance applications allow users to search for content available from a multitude of sources using a particular device, arid to save search terms and searches for future use with that

particular device. Some known interactive media guidance applications allow users to download or order content for viewing with the particular device.

[0004] Known interactive media guidance applications do not allow users to search for content, to receive a list of search results, to select some search results from the list of search results, or to save the selected search results for future access (e.g., for future playback). Furthermore, known interactive media guidance applications do not allow users to search for content using one device, and to download or order the content on a different device.

[0005] In view of the foregoing, it would be desirable to provide systems and methods for creating a media library of user-selected content and/or bookmarks that is accessible from a plurality of user devices. It would also be desirable to identify and select content and/or bookmarks for the media library using any suitable means, including searching for content, receiving recommendations for content, and directly entering content identification information.

Summary of the Invention

[0006] In accordance with the principles of the present invention, systems and methods for an interactive media guidance application are provided for creating a media library of user-selected content that is accessible from a plurality of user devices. The user may place available content in the media library, or the user may place a placeholder bookmark for content that is not yet available in the media library.

[0007] The user may add content to the media library in any suitable manner. For example, the interactive

media guidance application may provide a search page in which a user may enter search terms and search options to search for content. The interactive media guidance application may search for content satisfying the search terms and options entered by the user, and provide search results to the user in a search results page. The user may select some or all of the search results and place the selected search results in the media library. As another example, the user may select content from listings (e.g., program listings), or directly enter identification information for content that the user would like to add to the media library (e.g., by entering a program title). In some embodiments the content itself is added to the media library. In other embodiments content may be added to the media library by storing a link to the content in the media library.

[0008] The user may access the media library with any number of different devices including, for example, a television system, a personal computer, a cellular telephone, a personal digital assistant, a portable media player, ox any other user device. The user may, for example, have a network of devices and may use different devices at different times. Using a user device, the user may direct the interactive media guidance application to perform any suitable operation on the content and bookmarks of the media library. Such operations may include setting reminders, scheduling recordings, downloading content to one or more user devices, setting e-mail or text message notification options (e.g., to receive a notification when content has been downloaded) , or any other interactive media guidance application operation. In

some embodiments, the media library may be provided on a web server and accessed over an Internet communications link.

[0009] Some content may be available to the user for a fee (e.g., on-demand content). For example, the user may purchase the content when it is placed in the media library. Alternatively, the user may add content to the media library for free, but be charged for the content when it is downloaded to a user device, or when it is played back from a user device.

Brief Description of the Drawings

[0010] The above and other objects and advantages of the invention will be apparent upon consideration of the following detailed description, taken in conjunction with the accompanying drawings, in which like reference characters refer to like parts throughout, and in which:

[0011] PIG. 1 is a diagram of an illustrative interactive media system in accordance with the present invention;

[0012] FIG. 2 is a diagram of illustrative user equipment in accordance with the present invention;

[0013] FIG. 3 is a diagram of an illustrative user input device in accordance with the present invention;

[0014] FIG. 4 is an illustrative display of a log-in (or authentication) page for the interactive media guidance application in accordance with the present invention;

[0015] FIG. 5 is an illustrative display of a search page in accordance with the present invention;

[0016] FIG. 6 is an illustrative display of a search results page in accordance with the .present invention,-

[0017] FIG. 7 is an illustrative display of a playlist page in accordance with the present invention;

[0018] FIG. 8 is an illustrative display of a media library page in accordance with the present invention;

[0019] FIG. 9 is a flow chart of an illustrative process for searching for content and placing the content in a media library in accordance with the present invention; and

[0020] FIG. 10 is a flow chart of an illustrative process for ordering content from the media library for playback in accordance with the present invention.

Detailed Description of the Preferred Embodiments

[0021] Illustrative interactive media system 100 in accordance with the present invention is shown in FIG. 1. Though the following description will primarily describe video and audio content, it will be understood that it applies to all types of media content. Media content (e.g., video, audio, gaming content, shopping application content, etc.) is provided from programming sources 102 to media distribution facilities, such as media distribution facility 104, using communications path 106. Programming sources 102 may be any suitable sources of television and music content, such as, for example, television broadcasters (e.g., NBC, ABC, and HBO), satellite radio broadcasters (Sirius, XM Satellite radio), Internet content sources, or other video or audio content sources.

[0022] Program schedule data and other data is provided from data source 120 to media distribution facilities (e.g., media distribution facility 104) using communications path 122. Data source 120 may

include a program listings database having television program schedule information to be provided to an interactive media guidance application implemented on user equipment 110. The television program schedule information may include scheduled broadcast times, titles, channels, ratings information (e.g., parental ratings and critic's ratings), detailed title descriptions, genre or category information (e.g., sports, news, movies, etc.), and information on actors and actresses. Data source 120 may also be used to provide advertisements (e.g., program guide advertisements and advertisements for other interactive media guidance applications) , real-time data such as sports scores, stock quotes, news data, weather data, application data for one or more interactive media guidance applications, and any other suitable data for use by system 100.

10023] In some embodiments, there may be multiple data sources, such as data source 120, in system 100. For example, system 100 may include a data source associated with broadcast programming (e.g., advertisements, logo data for each broadcaster) , a data source associated with pay-per-view (PPV) programming, and/or a data source associated with on-demand programming (e.g., video -on- demand (VOD) programming).

[0024] In some embodiments, data source 120 provides program schedule data and other data directly to user equipment 110 over path 124, communications network 126, and path 136 instead of providing the program schedule data to user equipment 110 via media distribution facility 104. Communications network 126 may be any suitable communications network, such as the

Internet, a public switched telephone network, a private data network, or a packet-based network.

[0025] Media distribution facility 104 may be a cable system headend, a satellite television distribution facility, a television broadcaster, or any other suitable facility for distributing any suitable media content to users. Media distribution facility 104 may provide user equipment 110 with content received from programming sources 102 and program schedule data and other interactive media data received from data source 120 over communications path 116 using any suitable approach. For example, content may be provided to user equipment 110 in a broadcast, multicast, or unicast. Program schedule data and other data may be provided to user equipment 110 *on* a television channel sideband, in the vertical blanking interval of a television channel, using an in-band or out-of-band digital signal, or by any other suitable data transmission technique. Media distribution facility 104 may provide user equipment 110 with content, program schedule data, and other data on multiple analog or digital channels, and with any suitable frequency (e.g., continuously, daily, in response to a request from user equipment, etc.).

[0026] Media distribution facility 104 is connected to one or more user equipment 110-i (where i=1, ..., N) using communications path 116-i. Such user equipment 110 may be located, for example, in a user's home, in user's vehicles, in the user's offices, as part of the user's portable devices, or in any other suitable location. In some embodiments, user equipment 110 may not belong to the user (e.g., a public terminal) .

[0027] User equipment 110 may be any suitable user device for accessing video content, audio content or interactive media guidance application features . In some embodiments, user equipment 110 may be configured to display web pages of an online interactive media guidance application and/or multimedia content. For example, user equipment 110 may be a portable device such as a mobile phone, personal digital assistant (PDA) , BlackBerry™, portable television, laptop computer, I-Video device, portable media player, or any other suitable portable device. Other suitable types of user equipment 110 may include local user devices such as, for example, a user's home television equipment, DVR device, set-top box, home personal computer, or any other suitable local device. Ih some embodiments, user equipment 110 may be a non-local user device (e.g., a public or remote computer) .

[0028] An interactive media guidance application implemented on user equipment 110, media distribution facility 104, or another device of system 100 may use the program schedule data and other interactive media data to display program listings and other information (e.g., information on digital music) for the user. Interactive media guidance application displays may be generated and displayed for the user using any suitable approach. For example, an interactive media guidance application implemented at least in part on media distribution facility 104 may generate and transmit application display pages to user equipment 110 for display. As another example, user equipment 110 may store data for use in one or more interactive television displays (e.g. , program schedule data, advertisements, logos, etc.), and an'interactive media

guidance application implemented at least partially on the user equipment may generate the interactive television displays based on instructions received from media distribution facility 104.

[0029] In some embodiments, the interactive media guidance application may be implemented locally on user equipment 110. The interactive media guidance application may be any suitable application such as, for example, an interactive television program guide, a web browsing and other Internet service application, an on-demand application (e.g., video or audio on-demand application), a game application, a communication application (e.g., e-mail and chat), or any other suitable application, in some embodiments, the interactive media guidance application may be implemented in a distributed fashion (e.g., using a client-server architecture).. In some embodiments, interactive media guidance applications may be provided as separate applications that are accessed through a navigation shell application (e.g., a menu application with menu options corresponding to the applications). In some embodiments, the features of such applications may be combined,

[0030] In some embodiments, system 100 also includes server 130, server 140 (in facility 104), service provider 142, and/or other devices of system 100, which may be used to support interactive media guidance application functions including, for example, a network-based video recorder or a VOD application. For example, VOD content and video recorded using a network-based video recorder arrangement may be stored on server 140, server 130, or at service provider 142, and may be provided to user equipment 110 when

requested by the interactive media guidance application.

[0031] In some embodiments, an online interactive media guidance application may be provided, for example, using a server (e.g., server 130) connected to communications network 126 over communications path 132. Server 130 may receive program schedule data and other data from data source 120 over communications path 124, communications network 126, and communications path 132, or over another suitable path or combination of paths .

[0032] In some embodiments, user equipment 110 may access the online interactive media guidance application over an Internet communications link. For example, user equipment 110-i may access the online interactive media guidance application implemented at least in part on server 130 through communications network 126 (e.g., using a cable modem) using communications path 136-i or through media distribution facility 104 using communications path 116-i.

[0033] There are typically may of each system component (e.g., programming sources 102, media distribution facilities 104, servers 130 and 140, data sources 120, service providers 142) in system 100, but only one of each is shown in FlG. 1 to avoid overcomplicating the drawing. For clarity of the description, FIG. 1 includes N user equipments 110 with corresponding communication paths 116 and 136. The various communications paths (e.g., paths 106, 116, 122, 124, 132, 134, 136, 144 and 146) of system 100 may be satellite paths, fiber-optic paths, cable paths, or any other suitable wired or wireless communications path or combination of such paths .

[0034] FIG. 2 shows illustrative components of user equipment 110 (FIG. 1). User equipment 110 includes control circuitry 202 (that includes processing circuitry 206 and memory 208), input/output (I/O) 204, display 210, speakers 212, user input device 214 and recording device 216. User equipment 110 may include any additional component, either as part of one of the aforementioned components or as a stand-alone component.

[0035] Control circuitry 202 includes any suitable processing circuitry 206 (e.g., one or more microprocessors, microcontrollers, digital signal processors, programmable logic devices). Processing circuitry 206 may also include tuning circuitry (e.g., one or more tuners to handle simultaneous catalog-watch and record functions or picture-in-picture (PIP) functions), analog decoders, MPEG-2 decoders or other digital video circuitry, decoding and encoding circuitry (e.g., for converting over-the-air or cable analog signals to MPEG signals for storage), or any other suitable tuning or video circuits. Control circuitry 202 also includes memory 208 (e.g., random-access memory (RAM), read-only memory (ROM), flash memory, hard drives, DVD drives, CD drives, and server arrays). Processing circuitry 206 may provide instructions to memory 208.

[0036] In some embodiments, control circuitry 202 may be configured to execute the operations of a Java™ application. The Java™ application may be initially configured in user equipment 110, or may be downloaded to user equipment 110 at a later time. The Java™ application may allow the user to control interactive media guidance application functions including, for

example, playback functions (e.g., play, fast-forward, rewind, pause, or stop). For example, the Java™ application may be particularly useful in devices that have limited resources (e.g., a mobile phone, PDA, or BlackBerry™. Other application environments may also be supported, depending on the control circuitry capabilities.

[0037] In some embodiments, control circuitry 202 may be incorporated in a set-top box (e.g., an analog or digital set-top box, an integrated receiver decoder (IRD), a WebTV box). In some embodiments, control circuitry 202 may be incorporated in a personal computer coupled with a TV tuner card (e.g., a PCTV or mobile telephones with video and/or audio capabilities).

[0038] User equipment 110 communicates with system 100 through input/output (I/O) 204 using one or more Communications paths (e.g., paths 116 and 136 of FIG. 1) leading to other devices of system 100. I/O 204 receives video and audio content (e.g., from programming sources 102, servers or other equipment such as server 130, service providers such as service provider 142, media distribution facility 104) and program schedule information and other data for an interactive media guidance application from data source 120. In some embodiments, I/O 204 may include communications circuitry such as a cable modem, an integrated services digital network (ISDN) modem, a digital subscriber line (DSL) modem, a telephone modem, a wireless modem, an Ethernet hub, a FireWire or USB port, or any other suitable I/O circuitry for communications with other equipment. In some embodiments, the communications circuitry may be

components of control circuitry 202. The communications using this communications circuitry may involve the Internet or any other suitable communications networks or paths .

[0039] Processing circuitry 206 may direct the tuning circuitry and decoding and encoding circuitry to receive, display, play or record video or audio content. Control circuitry 202 may direct display 210 to display video content and audio component 212 to play audio content. Audio component 212 may include speakers, ear buds, headphones, or any other suitable component (e.g., for personal or public listening) . Display 210 may be a monitor, a television, a liquid-crystal display (LCD) screen, or any other suitable equipment for displaying visual images. Audio component 212 may be provided as part of user equipment 110 (e.g., display device 210) or may be a stand-alone unit.

[0040] In some embodiments, control circuitry 202 may play back a video by initiating a Java™ applet to perform the playback operations and other interactive media guidance application operations. In some embodiments, the applet may be programmed using any programming language or scheme. The user may select the program for playback in any suitable manner using the applet including, for example, entering a code that identifies a particular program (e.g., a code from a guide identifying a VOD program, a code identifying a program recorded on recording device 216, or a code identifying a broadcast channel) , selecting the program from listings (e.g., listings displayed on display device 210) , or any other suitable manner. In some embodiments, the user may use a first instance of user

equipment 110 to instruct the interactive media guidance application (e.g., the applet) to playback a program on another instance of user equipment 110.

[0041] Control circuitry 202 is connected to recording device 216, which may be used to record video and audio content received by control circuitry 202. Recording device 216 may be a digital video recorder (DVR), personal video recorder (PVR), a DVD recorder, a video cassette recorder (VCR), a hard disk, flash memory, or any other device or devices with storage capabilities. In some embodiments, recording device 216 may be incorporated in user equipment 110 (e.g., as part of control circuitry 202), a stand alone device, or incorporated in another suitable device of system 100. In some embodiments, control circuitry 202 may direct recording device 216 to perform any suitable operation.

[0042] In some embodiments, recording device 216 may include communications circuitry such as a cable modem, an ISDN modem, a DSL modem, or a telephone modem for communications with other equipment. Such communications may involve the Internet or any other suitable communications networks or paths.

[0043] A user may control user equipment 110 (e.g., control circuitry 202, display device 210, speakers 212, recording device 216) using user input device 214. User input device 214 may be any suitable user interface, such as a mouse, trackball, keypad, keyboard, touch screen, touch pad, voice recognition interface, remote control, or any other suitable user input device. In some embodiments, user input device may be incorporated in another component of user equipment 110 (e.g., display device 210, recording

device 216). User input device 214 may communicate with user equipment 110 by any suitable means including, for example, infrared, wired or wireless communications paths.

[0044] FIG. 3 shows illustrative user input device 214 for operating user equipment 110 (FIG. 1). User input device 214 is only illustrative and any other suitable user input interface may be used to operate user equipment 110 (e.g., a mouse, trackball, keypad, keyboard, touch screen, voice recognition system). User input device 214 includes function keys 302 and other keys 304 such as keypad keys, power on/off keys, pause, stop, fast-forward and reverse keys. Volume up and down keys 306 may be used for adjusting the volume of the audio portion of a video. Channel up and down keys 308 may be used to change television channels and to access content on virtual channels. Cursor keys 310 may be used to navigate on-screen menus. For example, cursor keys 310 may be used to position an on-screen cursor, indicator, or highlight (sometimes all generically referred to as a highlight or highlight region) to indicate interest in a particular option or other item on a display screen that is displayed by the interactive media guidance application.

[0045] An OK key 312 (sometimes called a select or enter key) may be used to select on-screen options that the user has highlighted. Keys 302 may include a RECORD key 314 for initiating recordings. MENU button 316 may be used to direct the interactive media guidance application to display a menu on the user's display screen (e.g., display device 210). INFO button 318 may be used to direct the interactive media guidance application to display an information display

screen. For example, when a particular program listing in an interactive television program listings display-screen is highlighted, the user pressing INFO button 318 may cause the interactive media guidance application to provide additional program schedule information associated with that program listing (e.g., a program description, actor information, etc.).

[0046] MEDIA LIBRARY button 320 may be used to access the user's media library. Alternatively, the user may also navigate to the user's media library through the guide. EXIT button 322 may be used to exit the interactive media guidance application or to exit a portion of the interactive media guidance application. GUIDE button 324 may be used to invoke an interactive television program guide (e.g., a program guide menu page, program listings page, or other interactive media guidance application page).

[0047] The keys shown in FIG. 3 are merely illustrative. Other keys or buttons may be provided if desired. For example, the user input device may include MUSIC, PLAYLISTS, BACK, SEARCH, FIND, EDIT, DVR, VOD, or other suitable keys. Alphanumeric buttons, including other keyboard keys (e.g., SHIFT, CONTROL), may be used to enter alphanumeric characters. A LAST or BACK button may be used to browse backwards in the interactive media guidance application (e.g., to return to a previous channel, web page or other display screen). Video recorder function buttons such as a play, pause, stop, rewind, fast-forward and record buttons, may be used to control video recorder functions (local or network-based) in system 100 (FIG. 1). A help key may be used to invoke help

functions such as context-sensitive on-screen help functions .

[0048] In some embodiments, the user may direct the interactive media guidance application to search for content with a user device. For example, the user may enter search terms by scrolling though the alphabet, typing the letters from alphanumeric keys, an on-screen keyboard, or any combination thereof. The user may search for any suitable content including, for example, broadcast programs, pay-per-view (PPV) programs, video-on-demand (VOD) programs, DVR recordings, video clips, audio clips, or any other suitable content. The user device may be any suitable device including, for example, a device configured only to search for content, a device configured to search for and play back content, or any other suitable user device. The user may select some of the search results and add them to a "media library. "

[0049] In some embodiments, the user may access a search web page using an online interactive media guidance application. Upon entering search terms, the online interactive media guidance application may provide a search results web page for the user. The user may select some of the search results from the search results web page and add them to a media library web page.

[0050] The "media library" is a collection of content (video and/or audio) and/or bookmarks to content selected by a user. In some embodiments, the "media library" may be saved in system 100 at a location outside of the user device so as to be accessible by the user on any user device the user may have in interactive media system 100. In some

embodiments, the media library may be located in a user device (e.g., a user device that is accessible to other user devices). The user may access the media library and download its contents to any suitable user device. The user may then play back the content using the user device to which the content was downloaded.

[0051] To access the interactive media guidance application, or certain interactive media guidance application features (e.g., search page, media library), the user device, in response to a user instruction, may log in or authenticate itself to a device of system 100 (e.g., media distribution facility 104, server 130). Upon the log-in or authentication, the user device may access data saved by and for the user including, for example, prior searches, the media library, and other data. The data may be stored on any device of system 100 (e.g., media distribution facility 104, server 130). In some embodiments, the user device may automatically log-in or authenticate itself to access the interactive media guidance application features. For example, the user device may automatically send its information (available from a previous log-in or authentication of the user) over a communications path to the appropriate device of system 100 and access the interactive media guidance application features. In some embodiments, the interactive media guidance application may prompt the user for log-in or authentication information (e.g., when the user accesses an online interactive media guidance application using a public computer).

[0052] FIGS. 4-8 show illustrative interactive media guidance application pages. The pages may be displayed to the user as part of an interactive media guidance

application accessed over a suitable communications link. Alternatively, web pages may be displayed to the user as part of an online interactive media guidance application accessed over an Internet communications link. Although FIGS. 4-8 are shown and described herein primarily in the context of illustrative interactive media guidance application pages for clarity, any other suitable pages may be used.

[0053] In some embodiments, the interactive media guidance application pages may be provided to the user in simplified format (e.g., for user devices having limited resources). For example, a simplified page may provide certain selectable options in additional pages or menus. In some embodiments, the interactive media guidance application may play back content to the user device in a simplified format (e.g., for user devices having limited resources). There may be any number of different simplified formats for interactive media guidance application pages and content, in some embodiments, the interactive media guidance application may provide the user with an option for switching from a simplified to a standard format of a page or content.

[0054] In some embodiments, the interactive media guidance application may identify the resources available to each user device (e.g., display capabilities, bandwidth, memory, processing power, or download time) and select standard or simplified pages and content depending on the resources identified. For example, if the interactive media guidance application determines that a particular user device has a small screen size, a small amount of memory, a processor with limited capabilities, or any other limited resource (e.g., mobile phones, portable media players as

compared to television equipment, personal computers, etc.), the interactive media guidance application may automatically direct the particular user device to display simplified pages and content. In some embodiments, the user may be prompted to select whether to display the standard or simplified pages and content .

[0055] FIG. 4 shows illustrative log-in (or authentication) page 400 that the interactive media guidance application may display on user equipment 110. The user may access page 400 by any suitable means including, for example, pressing a MENU, GUIDE, or other suitable key or key sequence on user input device 214, navigating from another interactive media guidance application screen (e.g., when navigating from a public screen to a user-specific or private screen) , or by any other suitable means.

[0056] Page 400 includes information section 402 that provides instructions for the user to enter his username and password to log in (or authenticate) to the interactive media guidance application. The user may use a user input device (e.g., user input device 214) to enter his user name in a username box (e.g., box 420) and his password in a password box (e.g., box 422) . The user may submit the username and password using a submit option (e.g., box 424). In one embodiment, user log-in may be based on ownership of devices. For example, once a user has logged into a particular device (e.g., a PC), the user may bypass additional log-in/ identification procedures for applications (e.g., a music download program) executing on that particular device that has already properly identified the user, or other devices connected thereto

(e.g., a portable media player). A data packet, e.g., a cookie, may be utilized for a particular device such that once the user has been properly identified and logged in, appligations executing on and attached devices to the particular device need no further log-in and/or authentication. Page 400 includes an option (e.g., button 432) that the user may select if the user has forgotten his username and/or password, as indicated by description 430. In response to selecting the forgotten username/password option, the interactive media guidance application may transmit the appropriate username and password to the user (e.g., by e-mail, regular mail, text message, telephone). Page 400 includes an option (e.g., button 436) for creating a new user account, as indicated by description 434. In response to selecting the "new user account" option, the interactive media guidance application may prompt the user to create a new username and password, which may be transmitted to the appropriate device of system 100 (e.g., media distribution facility 104, server 130).

[0057] When the user creates a new account, the interactive media guidance application may prompt the user to identify all user devices (including the current device) that the user may use to access interactive media guidance application features. In some embodiments, the interactive media guidance application may automatically search for user devices in the neighborhood of the current user device (e.g., by broadcasting notices (e.g., pinging) and requesting replies identifying the particular user device). For example, if the user authenticates with a home television device, the interactive media guidance

application may search for other nearby devices (e.g., devices connected to the user device) such as, for example, a recording device, a home computer, or any other device. In some embodiments, the user may identify particular user devices to the interactive media guidance application by entering the appropriate device information (e.g., device type, serial number, registration number, phone number (for a cell phone), communications link for connecting to the device) with a user input device (e.g., user input device 214). In some embodiments , when the user authenticates to the user account using a new device, the interactive media guidance application may add the device to the list of known user devices associated with the account. This may be done automatically or the user may be given the opportunity to add the device to the list.

[0058] The interactive media guidance application may transmit username and password data entered by the user to the appropriate device of system 100 (e.g., media distribution facility 104, server 130) , which may in turn compare data to authentication data (e.g., previously set username and password combinations stored in the device) to authenticate the user. Once the user has been authenticated, the interactive media guidance application may display pages for interactive media guidance application features that are specific to the user (e.g., pages in which the user preferences are applied, pages from which the user may save content). In some embodiments, the interactive media guidance application may display a listings page to the user.

[0059] The user may select any type of media content to add to a media library (described in more detail

below) . For example, the user may select content from a grid display or listings of content. The interactive media guidance application may provide the user with pages that include listings of programs by category, genre, A-Z listings, favorite channel and/or program listings, recommendations (e.g., from tvguide.com, experts, friends, similar interest groups, "most popular" listings, etc.), or any other listings page.

[0060] As another example, the user may receive an e-mail, short message service (SMS) message, or any other message that identifies content. For example, the message may include a bookmark to a program or to information regarding a program. As another example, the message may include listings of content. The user may then add the content from the message to the media library by selecting the bookmark or listing, copying and pasting the name of the content (e.g., to search for the content of the message) , or any other suitable approach for adding the content to the media library. In some embodiments, the content provider may monitor the content that is placed in a user's media library and send pre-emptive messages to one or more user devices that recommended content based on the user's history and content placed in the media library. In addition, the content provider may update or clarify content recommendations based on which content the user selects from the pre-emptive messages for the media library. Each time the user selects particular recommended content, the content source identifies the attributes of the selected recommended content and provides additional recommendations for content similar to the selected content.

[0061] As another example, the user may directly enter information identifying particular content (e.g., a movie title) that is to be added to the media library. For example, a user may walk by a movie theater and notice that the movie "Aeon Flux" is playing. The user may then decide to add the movie to his media library. Instead of having to wait until the user gets home to access the media library with his television equipment, the user may use a cellular telephone and send a message (e.g., a text message) to the interactive media guidance application instructing it to add the movie "Aeon Flux" to the media library. The interactive media guidance application may then search for the movie "Aeon Flux, " and add the movie, when it is found, to the media library. If the movie "Aeon Flux" is not yet available, the interactive media guidance application may add a placeholder bookmark for the movie.

[0062] As still another example, the user may select content from an advertisement displayed by the interactive media guidance application, by a web page, or by any other means and on any suitable user device. In response to a user selection of the advertisement, the advertisement itself, and/or the content being advertised may be added to the media library (discussed in more detail below) .

[0063] Alternatively, the user may search for content to add to the media library. FIG. 5 shows illustrative search page 500 that the interactive media guidance application may display on user equipment 110. The user may access search page 500 by any suitable means such as, for example, pressing a SEARCH, FIND, or other suitable key or key sequence on user input

device 214, navigating from another interactive media guidance application screen or menu (e.g., by selecting Video Search button 506), or by any other suitable means . In some embodiments , the interactive media guidance application may display the search page after authenticating the user.

[0064] Page 500 includes navigation buttons 502, 504, 506, 508, 510 and 512. The user may select "Main" button 502 to access the main page of the interactive media guidance application. The user may select "My Recommends" button 504 to view recommended programs and other content selected based on the user's preferences. The user may search for content by selecting "Video Search" button 506. The user may view the contents of the user's media library by selecting "Media library" button 508. The user may view his playlists by selecting "Playlist" button 510. The user may view the top picks as determined by the interactive media guidance application by selecting "Top Picks" button 512. The interactive media guidance application may indicate the user's location in the guide by marking the button corresponding to the location. For example, button 506 is marked with a different color in search page 500. Other suitable markings may include, for example, placing a border around the button, changing the font of the button, displaying an icon by the button, or any other suitable marking.

[0065] The user may search for a program by entering search terms in search box 520 using the user input device (e.g., user input device 214) . The user may search for a particular program, actor, broadcast date, broadcast time, release year, genre, rating, keyword sequence, or any other suitable search term. In the

example shown in FIG. 5, the user has entered the search terms "Johnny Knoxville." In some embodiments, the user may enter search terms by typing in the terms using alphanumeric keys on the user input device (e.g., the keyboard of a computer, the keypad of a mobile phone or remote control, on-screen keyboard as input device, etc.). In some embodiments, the user may enter the search terms by scrolling through the letters of the alphabet using the directional keys of a user input device. In some embodiments, the user may select search terms from another interactive media guidance application screen. For example, the user may view a listing or description of a program, highlight or select terms from the listing or program description (e.g., a program title, actor name, etc.), copy the selected terms, and paste them in the search page.

[0066] In some embodiments, the user may select search options to narrow the search. The search options may include, for example, category, source, result type, and any other suitable search option or combination of search options The options may provide additional information related to 1) the search term such as the identify of the search term (e.g., name, date) or 2) the search parameters (e.g., what sources to search, what dates to search).

[0067] Page 500 shows three illustrative search options : category option, source option, and result type option. The user may enter a category option in a "category" box (e.g., box 522). Suitable category options may include, for example, actor, program title, broadcast date, broadcast time, release year, genre, rating, program description, or any other suitable option. The user may also identify the sources to

search in a "source" box (e.g., box 524). Suitable sources may include, for example, recording devices, VOD servers, network video recorders, the Internet, DVR devices, PVR devices, VCR devices, cable headends, a specific recording device of the user equipment, a device or devices at a specific location in system 100, or any other suitable sources. The user may further specify the result type to search for in a "result type" box (e.g., box 526). Suitable result type options may include, for example, actual content, bookmarks to actual content, playlists, free content, content for sale, PPV programs, VOD programs, broadcast programs, or any other suitable option.

[0068] In some embodiments, the user may enter options in one or more search options (e.g., entering an option for only the category option). In some embodiments, the user may select more than one option within each search option (e.g., by selecting multiple options in the category option using a SHIFT or CONTROL key). In some embodiments, the default options may be "all." The user may select an option in any suitable manner including, for example, entering the option using alphanumeric keys from the user input device, selecting the option from a pull-down menu (e.g., pull-down menu 528), a list or from another interactive media guidance application page, or any other suitable manner. For example, the user may display pull-down menu 528 by selecting arrow 529. The user may view additional options by scrolling up or down in the menu. To select an option from pull-down menu 528, the user may highlight the option with highlight region 514.

[0069] In the example shown in FIG. 5, the user has selected the "Actor" category option (box 522), the

"All" source (box 524), and the "Actual Content" result type (box 526).

[0070] in some embodiments, the search page may include multiple search boxes coupled by logical operations. For example, the search page may include two or more search boxes coupled by a user specified operator such as and, or, not, or any other suitable operator. The search page may allow the user to perform complex, or Boolean, searches (e.g., "Knoxville" 'and' "Simpson"). In some embodiments, the user may select recording options for each of the search terms entered.

[0071] In some embodiments, the user may enter a string of search terms that includes logical connectors in search box 520. The interactive media guidance application may be configured to parse the search string, extract the connectors from the search terms and find content corresponding to the search string. For example, the user may enter the search string "Knoxville and Simpson and movies" to search for movies starring Johnny Knoxville and Jessica Simpson. In some embodiments, the user may select category, source and result type options for the search phrase. In some embodiments, the user may include category, search and result type options in the search phrase. For example, the user may enter the phrase "actor=Knoxville and actor=Simpson and source=Internet and result type=actual content." Such a search may return, for example, video clips, trailers or full length video of movies starring Johnny Knoxville and Jessica Simpson that were found on the Internet.

[0072] Once the user has entered search terms and options, the user may select a "search" option (e.g.,

"search" button 530) to perform the search. In the example shown in FIG. 5, the user has entered the search term "Johnny Knoxville, " and selected the "actor" category, the "all" source, and the "actual content" result type. The interactive media guidance application may search for content corresponding to the user's search terms and display the search results for the user.

[0073] The interactive media guidance application may display search results in a search results page. FIG. 6 shows an illustrative search results page 600 that includes listings of search results corresponding to the search terms entered on page 500. Search results page 600 includes listings 610 and 620 of programs. The listings may be ordered by source, alphabetically by title, by air date, by recording date, in the order they were found, or in any other suitable order. In the example shown in FIG. 6, recorded program listings 610 includes programs located on recording devices and VOD listings 620 includes programs available to the user as VOD programs . In some embodiments, the search page may include listings from other sources (e.g., the Internet, television system headend, etc.) depending on the user's options set on search page 500 and the content found by the search. Recorded program listings 610 include the date the program was recorded, the start time of the program, the program title, and the channel number and name. VOD listings 620 include the program title and the channel number and name. In some embodiments, listings 610 and 620 may include other information such as, for example, actor names, rating, short description, cost, recording quality, program size,

program length, or any other suitable information or combination thereof .

[0074] Listings 610 and 620 may indicate how many hits were found in each content source. In the example shown in PIG. 6, recorded program listings 610 include 5 hits displayed, but also includes button 612 that indicates to the user that there are 17 more hits found in recording devices. The user may select button 612 to display the listings for the additional 17 hits. In the example shown in FIG. 6, VOD listings 620 include only 1 hit.

[0075] A user may select a listing with highlight region 614 to view more information about the program associated with the listing, to order the program (e.g., for a VOD program), to play back the program, to receive a reminder or an e-mail notification for the program (e.g., for a broadcast program before the program is about to air) , to automatically record the program, to receive a notification when the program has been recorded, or to perform any other suitable action. In response to receiving a user request to view program information, the interactive media guidance application may display the program information on the screen, for example, in window 616 or in full screen. In some embodiments, the program information may include video and/or audio clips. In response to receiving a user request to play back the program, the interactive media guidance application may display the program, for example, in window 616 or in full screen.

[0076] In some embodiments, the search results may include results associated with content that is not yet available. For example, the search results may include advertisements for future programs (e.g., movie

trailers), titles of future programs (e.g., found from lists of movie, music, or program projects), or other suitable results for future content.

[0077] To download or order content, the user may highlight the listing associated with the program and select an "add selected program to media library" option (e.g., button 642). In some embodiments, the interactive media guidance application may visually mark the selected program as being added to the media library. For example, the interactive media guidance application may fill a box (e.g., box 632) to indicate that the program associated with the listing was added to the media library. The interactive media guidance application may leave a box empty (e.g., box 630) to indicate that the listing associated with the program has not been added to the media library. The interactive media guidance application may mark listings in any suitable way including, for example, changing the color of the listings, changing the font of the listing, adding an icon, checking a box, or using any other suitable mark. To remove a previously selected program from the media library, the user may highlight the listing associated with the program and select a "remove selected program from media library" option (e.g., button 644).

[0078] In some embodiments, instead of filling a box to indicate that a program has been added to the media library, the user may select the box (e.g., box 630) associated with the program without adding the program to the media library. In response to receiving the selection of the box, the interactive media guidance application may fill the box (e.g., box 632) to indicate that the program is selected. To unselect a

program, the user may highlight and select the filled box associated with the program to clear the box. The user may add the selected programs to the media library by selecting the "add selected program to media library" option (e.g., button 642).

[0079] In some embodiments, the user may select content from the search results to add to a new or existing playlist. For example, the user may select programs as described above, and select an "add selected program to playlist" option (e.g., button 646). The user may also remove programs from a playlist. For example, the user may select the programs as described above, and select a "remove selected program from playlist" option (e.g., button 648). In some embodiments, the search results page may include an option for adding playlists to the media library (not shown). In some embodiments, the interactive media guidance application may provide existing playlists for the user. For example, the interactive media guidance application may provide a playlist of recommended content identified based *on* the user's profile and viewing history, a playlist of recommended programs based on popular programs as identified by a content provider, a celebrity playlist (e.g., an iTunes playlist). As another example, the interactive media guidance application may provide the user with generic playlists (e.g., based on genre), or any other suitable playlist. The user may modify existing or proposed playlists to personalize their content.

[0080] In some embodiments, the user may upload content to the media library by searching for content on specific user equipment or other sources (e.g., the

user's DVR device) and placing the content found in the search in the media library. In some embodiments, the interactive media guidance application may provide the user with a selectable option to upload the content of a specific source (e.g., a DVR device) to the media library.

[0081] In some embodiments, if the user finds an advertisement (or the content associated with an advertisement) from the search results desirable, the user may select the advertisement and place it in the media library. In some embodiments, the interactive media guidance application may, automatically or in response to a user instruction, find and place the content associated with the advertisement in the media library.

[0082] in some embodiments, if the user finds future content from the search results desirable, the user may select the search result associated with the future content and instruct the interactive media guidance application to monitor content sources for the future content (e.g., by adding the search result to the media library). The interactive media guidance application may then notify the user (e.g., with a message or reminder in the interactive media guidance application, or an e-mail message) when the content becomes available. In some embodiments, the interactive media guidance application may automatically obtain (e.g., download or record) the content when it becomes available for the user, for example by placing the content in the media library. In some embodiments, when the content becomes available, the interactive media guidance application may prompt the user for instructions on whether to obtain the content.

[0083] In some embodiments, a user may select a broadcast advertisement (e.g., movie trailer) for future or available content to instruct the interactive media guidance application to add the advertisement or the content associated with the advertisement to the media library. If the content is not yet available, the interactive media guidance application may monitor content sources for the content.

[0084] in some embodiments, in response to a user instruction to add or remove programs from a playlist, the interactive media guidance application may display a playlists page. The user may access the playlists page by any other suitable means including, for example, pressing a PLAYLIST or other suitable key or key sequence on user input device 214 (not shown in PIG. 3), navigating from another interactive media guidance application screen or menu (e.g., by selecting playlists navigation button 510), or by any other suitable means. FIG. 7 shows illustrative playlist page 700. In some embodiments, the interactive media guidance application *may* indicate to the user that the playlist page is displayed by marking the playlists navigation button (e.g., button 510).

[0085] Playlist page 700 includes playlist listings 710, which the user may select using highlight region 712. Listings 710 include the playlist name, which may be a generic name (e.g., playlist 1, 2, 3, 4) or a user defined name. In some embodiments, the playlist listings may include additional information such as, for example, programs in the playlist, number of programs, program types, or any other suitable information. In some embodiments, the interactive media guidance application may display additional

information related to a selected playlist in response to a user selection of a "view playlist information" option (e.g., button 722). For example, the interactive media guidance application may display the information in window 714, in a full screen display, or in any other suitable display. In some embodiments, the playlist information may include video and/or audio content (e.g., recorded clips or broadcast content). Playlist page 700 may also include options for creating new playlists (e.g., button 724) and deleting existing playlists (e.g., button 726).

[0086] In some embodiments, the user may add or remove one or more programs (e.g., programs previously selected on search results page 600) to a particular playlist by highlighting the listing associated with the particular playlist and selecting an "add program to selected playlist" option (e.g., button 742) or a "remove program from selected playlist" option (e.g., button 744). In some embodiments, after adding or removing programs from a playlist, the interactive media guidance application may display the page where the user selected the programs (e.g., page 600). In some embodiments, the interactive media guidance application may add search results for content that is not yet available to a playlist. When the content becomes available, the interactive media guidance application may replace the search result with the content.

[0087] In some embodiments, the user may add or remove a playlist (and all of its programs) to the media library by highlighting the listing associated with the particular playlist and selecting an "add playlist to media library" option (e.g., button 746) or

a "remove playlist from media library" option (e.g., button 748). In some embodiments, the user may return to the previous page (e.g., search results page 600) by pressing a BACK key or other suitable key or key sequence on user input device 214.

[0088] The user may view programs that have been added to the media library by accessing a media library page. The user may access the media library page by any suitable means such as, for example, pressing a MEDIA LIBRARY key (e.g., key 320) or other suitable key or key sequence on user input device 214, navigating from another interactive media guidance application screen or menu (e.g., by selecting media library navigation button 508), or by any other suitable means. FIG. 8 shows illustrative media library page 800. In some embodiments, the interactive media guidance application may indicate to the user that the media library page is displayed by marking the media library navigation button (e.g., button 508).

[0089] Media library page 800 includes listings 810 of content placed in the media library. The listings may be advertisements, video clips, audio content, or any other suitable content that a user may add to the media library. Listings 810 include the content type, source and title of the content. The listings may include any other suitable information such as, for example, actor names, ratings, program descriptions, recording quality information, recording options, broadcast date, recording date, when the program is available, program size, program length, or any other suitable information or combination of information.

[0090] In some embodiments, listings 810 may include listings for content that is not yet available. In

some embodiments, the listings associated with future content (e.g., search results for future content) may include an indication that the content is not yet available (e.g., the source entry for "Rocky"). In some embodiments, the interactive media guidance application may mark the listing when the content becomes available to indicate the availability to the user (e.g., icon 818 indicates that the movie "Lord of the Rings," which was previously unavailable, is now available as a VOD offering).

[0091] In some embodiments, media library page 800 may include a separate notice or listing for content that is not yet available. When content becomes available, the interactive media guidance application may remove the entry for that content from the separate notice and add a new entry associated with that content in listings 810 for the user to select.

[0092] In some embodiments, the user may display additional information related to a program by highlighting the listing (e.g., with highlight region 812) associated with the program and selecting a "program information" option (e.g., button 816), pressing an INFO key or key sequence on the user input device, or by any other suitable means. For example, the interactive media guidance application may display the information in window 814, in a full screen display, or in any other suitable display. In some embodiments, the playlist information may include video and audio content (e.g., recorded clips or broadcast content).

[0093] In some embodiments, the user may remove content from the media library by highlighting the listing associated with the content (e.g., using

highlight region 815) and selecting a "remove from media library" option (e.g., button 830), and empty the media library by selecting an "empty media library" option (e.g., button 832).

[0094] In some embodiments, the user may access the media library with a user device to play back content on the same user device (which may be different than the user device with which content was added to the media library). The user may, using the user device, access media library page 800, highlight the listing associated with available content (e.g., using highlight region 815), and select a "download to this device" option (e.g., button 820). In response to receiving the instruction to download the content, the interactive media guidance application may direct the user device to connect to the appropriate content source and download the content. In some embodiments, the interactive media guidance application may automatically download items placed in the media library to one or more user devices (e.g., "Ready to Go" option). This option may be enabled by the user only for content that satisfies user or system defined conditions (e.g., only automatically download sporting events).

[0095] In some embodiments, each user may have more than one media library. Media library page 800 may include options for each of the user's media libraries (e.g., buttons 802, 804, 806). Each option for a media library may be identified by a generic name (e.g., media library 1, 2, 3) or a user-defined name. The interactive media guidance application may indicate to the user the selected media library by marking the associated media library option using any suitable

marking (e.g. , a different color option 805) . In some embodiments, the interactive media guidance application may display listings for only the selected media library. In some embodiments, the interactive media guidance application may display listings for all of the media libraries, where the listings for each media library are distinguished in any suitable manner (e.g., separately grouping the listings for each media library, visually distinguishing the listings in different media libraries, or any other suitable marking) . Media library page 800 may also include an option for creating new media libraries (e.g., button 808) .

[0096] The user may share the content of one or more media libraries with other users. For example, the user may download content to a device that other users may access as well. As another example, the user may download content to devices belonging to other users (e.g., via e-mail, file transfer protocol, entering their device information, etc.). As still another example, the user may allow other users access to his media library. In some embodiments, the user may provide read-only rights to other users, or may protect (e.g., with a password), write and/or other full access rights. The user may also limit the content available to another user (e.g., only allow specific content to be viewed) . The rights given to other users may be temporary (e.g., by removing a password once a user has accessed the media library) . In some embodiments, allowing another user to access the media library may require a fee, paid by either or both the owner of the media library, or the user wanted to access another's media library.

[0097] The user may request that the interactive media guidance application automatically fill up one or more user devices with all of the content stored in one or more media libraries (e.g., selecting a "fill-up" option). A user may use this option to maximize the content stored by a particular portable user device prior to a trip (e.g., fill a portable media player prior to beginning a business trip).

[0098] In some embodiments, the user may access the media library page with a first device to play back content on a second user device (both of which may be different than the user device with which content was added to the media library). The user may, using the first user device, access media library page 800, highlight the listing associated with available content (e.g., using highlight region 815), specify the device or devices to which to download the content (e.g., the second user device), and select a "download content" option (e.g., button 822). In response to receiving the instruction to download the content, the interactive media guidance application may direct the second user device to connect to the appropriate content source and download the content.

[0099] The user may select the user devices to which to download the content in any suitable manner including, for example, selecting user devices from pull-down menu 824 with highlight region 826, selecting user devices from a list of user devices, inputting the user devices directly (e.g., with user input device 214), or in any other suitable manner. The interactive media guidance application indicates in box 828 the device or devices to which the content is downloaded.

[0100] In some embodiments, the user may select an advertisement (e.g., a trailer) from listings 810 for download. In some embodiments, in response to the download request, the interactive media guidance application may download the content associated with the advertisement, if available, instead of the selected advertisement. For example, instead of downloading a trailer for a movie, the interactive media guidance application may download a VOD or PPV offering of the full-length movie. In some embodiments, the interactive media guidance application may prompt the user to select either the advertisement or the actual content for downloading.

[0101] The interactive media guidance application may play back the selected content on the selected user device while it is downloading, or may instead wait until the download is complete before starting playback. In some embodiments, when the content is a bookmark, the interactive media guidance application may download the bookmark. In response to receiving a playback request, the interactive media guidance application may receive and display a content stream or tune to a channel providing the content to which the bookmark was directed.

[0102] In some embodiments, the content selected by the user may be a playlist. In some embodiments, the interactive media guidance application may download the selected playlist as a collection of bookmarks to the content of the playlist. In some embodiments, the interactive media guidance application may download the actual content that the playlist bookmarks to (e.g., download the playlist content from their respective sources) .

[0103] In some embodiments, downloading content may require the user to purchase the content, if the content is offered for a fee (e.g., PPV programs, VOD programs, etc.). In some embodiments, the user may download the content for free, but may be required to purchase the content to play it back. This embodiment may allow a user to download content to a particular user device (e.g., the user's home television equipment), but only pay for the content that the user actually plays back, thus facilitating impulse purchases of content by eliminating the lapse of time between the user's instruction to purchase the content and the completion of the download of the content. In such embodiments, the content may be provided to the user device in encrypted form. The interactive media guidance application or playback device may receive a key for decrypting the content after the user has paid a fee. For users buying one or more items of content, the interactive media guidance application may provide discounts.

[0104] To purchase content, the user may provide personal information (e.g., account number, pin, and/or credit card information) to verify the user's identity and account status. In some embodiments, the interactive media guidance application may verify the information entered by the user with the user's equipment. In some embodiments, the interactive media guidance application may provide the information to a device outside of the user's equipment (e.g., a content source or a third party order fulfillment processor) for verification. Once the user's information has been verified, the content source may release the selected content to the user for download or playback.

[0105] The following example will serve to illustrate the feature of accessing the media library with a first user device and downloading content to a second user device. For example, a user may, during a break at work, decide to search for content having Johnny Knoxville as an actor. The user may access the search web page (e.g., search page 500) of an online interactive media guidance application over the Internet using a personal computer, and enter the appropriate search terms. After receiving the search terms and searching for content, the interactive media guidance application may display a list of search results in a search results web page (e.g., search results page 600) . The user may then select some of the search results from the list of search results (e.g., Dukes of Hazard) to add to the media library. Because the user is at work and cannot play back the content while working, the user may decide to send the content of the media library to the user's home television equipment for viewing that evening, when the user gets home from work. The user may then navigate to the media library web page (e.g., using navigation button 508), select some or all of the content in the media library, select the home television equipment as the destination for the content, and instruct the online interactive media guidance application to download the selected content to the home television equipment .

[0106] As another example, instead of downloading the content to the user's home television equipment, the user may download a bookmark to the content. Then, when the user selects the bookmark that was downloaded with the home television equipment, the content may be

accessed and played back remotely (e.g., from a central server, a VOD server, or a network recording device).

[0107] As still another example, a user may decide to search for particular content using a mobile phone. The user may access the search page (e.g., search page 500) from a server (e.g., a web-based server) and enter the appropriate search terms. After receiving the search terms and searching for content, the interactive media guidance application may display a list of search results in a search results page (e.g., search results page 600) on the mobile phone. The user may select some or all of the search results and add them to the media library. In another example, the user may access the media library using the mobile phone and select content and a device to which to download the content. In still another example, the user may access the media library and play back content in any suitable manner including, for example, downloading the content to the mobile phone for local playback, remotely streaming the content for playback, or by another other manner.

[0108] FIG. 9 is a flow chart of illustrative steps involved in adding content to a media library. Process 900 starts at step 902. At step 910, the interactive media guidance application receives search terms in a search page. For example, the interactive media guidance application may receive search terms typed by a user in a search web page accessed over an Internet communications link. The interactive media guidance application may receive search options, for example, category, content source and content type options, for narrowing the search. In some

embodiments, the search terms may include logical operators connecting the other search terms.

[0109] At step 920, the interactive media guidance application performs the search. For example, the interactive media guidance application may parse the search terms to extract logical operators from the other search terms and search for content based on the parsed search terms and search options set by the user. The interactive media guidance application may direct any suitable device of system 100 (e.g., television distribution facility 104, server 140, server 130, data source 120, user equipment 110) to perform the search. At step 930, the interactive media guidance application displays the search results to the user in a search result page.

[0110] At step 940, the interactive media guidance application receives a user selection of one or more results from the search result page. For example, the interactive media guidance application may receive a user selection of one or more listings associated with content found by the search. In some embodiments, the interactive media guidance application may display additional information related to one or more search results for the user before receiving the user selection.

[0111] At step 950, the interactive media guidance application adds the search results selected by the user at step 940 to the media library. For example, the interactive media guidance application may receive a user instruction to add the selected programs to the media library. In some embodiments, the interactive media guidance application may add actual content, bookmarks to content, or any other combination of

bookmarks and actual content to the media library. Process 900 ends at step 952,

[0112] PIG. 10 is a flow chart of illustrative steps for downloading content from the media library for playback. Process 1000 begins at step 1002. At step 1010, the interactive media guidance application accesses the media library. For example, the user may, using a user device, direct the interactive media guidance application to authenticate and access the user's media library. The user device may be any suitable user device.

[0113] At step 1020, the interactive media guidance application receives a user selection of particular content for playback from the content available in the media library. The interactive media guidance application also receives a selection of the user device or devices to which to download the content . For example, the interactive media guidance application may receive a user selection to download content to the user device (e.g., the user's home television) from which the user selection is received. As another example, the interactive media guidance application may receive a user selection to download content to a user device (e.g., the user's home television) different from the user device (e.g., a mobile phone) from which the user selection is received.

[0114] At step 1030, the interactive media guidance application downloads the particular content to the user device or devices selected at step 1020. For example, the interactive media guidance application directs the content sources of the particular content to transfer the particular content to the selected user devices. As another example, the interactive media

guidance application may direct the selected user devices to request the particular content from the content sources . In some embodiments , the interactive media guidance application may determine the capabilities of the selected user devices and provide each user device with a copy of the content that is appropriate for the user device (e.g., having a particular format) . At step 1040, the interactive media guidance application receives a playback request. For example, the user may instruct the interactive media guidance application, using a user input device (e.g., user input device 214), to play back particular content .

[0115] At step 1050, the user purchases the content, if necessary. If the content is free, step 1050 is skipped. In some embodiments, the user purchases the content prior to downloading the content. In some embodiments, the user may download the content for free, but purchases the content in response to a request to play back the content (e.g., received at step 1340) . To purchase the content, in some embodiments, the user may supply the interactive media guidance application with personal information (e.g., an account number, a credit card number) . The interactive media guidance application may in turn provide the personal information to an appropriate content source or media distribution facility to release the content for playback. In some embodiments, the interactive media guidance application may already have the user's personal information and may automatically supply the information to an appropriate content source or media distribution facility.

[0116] At step 1060, the interactive media guidance application plays back the content on the user device identified at step 1020. Process 1000 ends at step 1062.

[0117] One skilled in the art will appreciate that the invention can be practiced by other than the prescribed embodiments, which are presented for purposes of illustration and not of limitation, and the invention is limited only by the claims which follow.

What is Claimed is:

1. A method for providing an interactive media guidance application comprising:

creating a media library comprising a collection of user-selected media content, wherein said creating comprises:

receiving a user selection of at least one media content that is not currently-available, and

adding a bookmark for the media content to the media library;

monitoring content sources to determine when the media content becomes available; and

in response to determining that the at least one media content has become available, notifying the user that the at least one media content has become available.

2. The method of claim 1 further comprising adding the at least *one* available media content to the media library.

3. The method of claim 1 further comprising:

accessing the media library with a user device;

selecting a media content from the media library; and

playing back the selected media content.

4. The method of claim 3 further comprising purchasing the selected media content prior to playing back the selected content.

5. The method of claim 1 wherein creating a media library further comprises:

receiving search terms for media content;

searching for media content based on the search terms;

displaying search results; and

wherein receiving a user selection of at least one media content comprises receiving a user selection of at least one of the displayed search results.

6. The method of claim 1 wherein receiving a user selection of at least one media content further comprises receiving a user input of information identifying at least one media content.

7. The method of claim 1 creating a media library further comprises:

receiving a message recommending at least one media content to add to the media library; and

wherein receiving a user selection of at least one media content comprises receiving a user selection of at least one recommended media content.

8. The method of claim 7 further comprising:

monitoring the media content that a user places in a media library; and

providing recommendations for the at least one media content to the user based on the monitoring of the media library.

9. The method of claim 1 wherein the media content is any of a playlist, a bookmark, and actual content.

10. The method of claim 1 wherein the media content is available from any of a recording device, the Internet, a video-on-demand server, a broadcast source, and a satellite source.

11. The method of claim 1 further comprising accessing the media library using any of television equipment, a personal computer, a laptop computer, a set-top box, a mobile telephone, a personal digital assistant, a BlackBerry™, a portable television, and a portable media player.

12. The method of claim 1 further comprising accessing the media library over an Internet communications link.

13. A system for providing an interactive media guidance application comprising a display device, an input device and control circuitry, the control circuitry configured to create a media library comprising a collection of user-selected media content, by:

receiving a user selection of at least one media content that is not currently available, and

adding a bookmark for the media content to the media library;

monitoring content sources to determine when the media content becomes available; and

in response to determining that the at least one media content has become available, notifying

the user that the at least one media content has become available.

14. The system of claim 13 wherein the control circuitry is further configured to add the at least one available media content to the media library.

15. The system of claim 13 wherein the control circuitry is further configured to:

Access the media library with a user device;

select a media content from the media library; and

direct the display device to play back the selected media content.

16. The system of claim 13 wherein the control circuitry is further configured to purchase the selected media content prior to playing back the selected content.

17. The system of claim 13 wherein the control circuitry is further configured to:

receive search terms for media content;

search for media content based on the search terms;

direct the display device to display search results; and

receive a user selection of at least one of the displayed search results.

18. The system of claim 13 wherein the control circuitry is further configured to receive a user input of information identifying at least one media content.

19. The system of claim 13 wherein the control circuitry is further configured to:

receive a message recommending at least one media content to add to the media library; and

receive a user selection of at least one recommended media content.

20. The system of claim 19 wherein the control circuitry is further configured to:

monitor the media content that a user places in a media library; and

provide recommendations for the at least one media content to the user based on the monitoring of the media library.

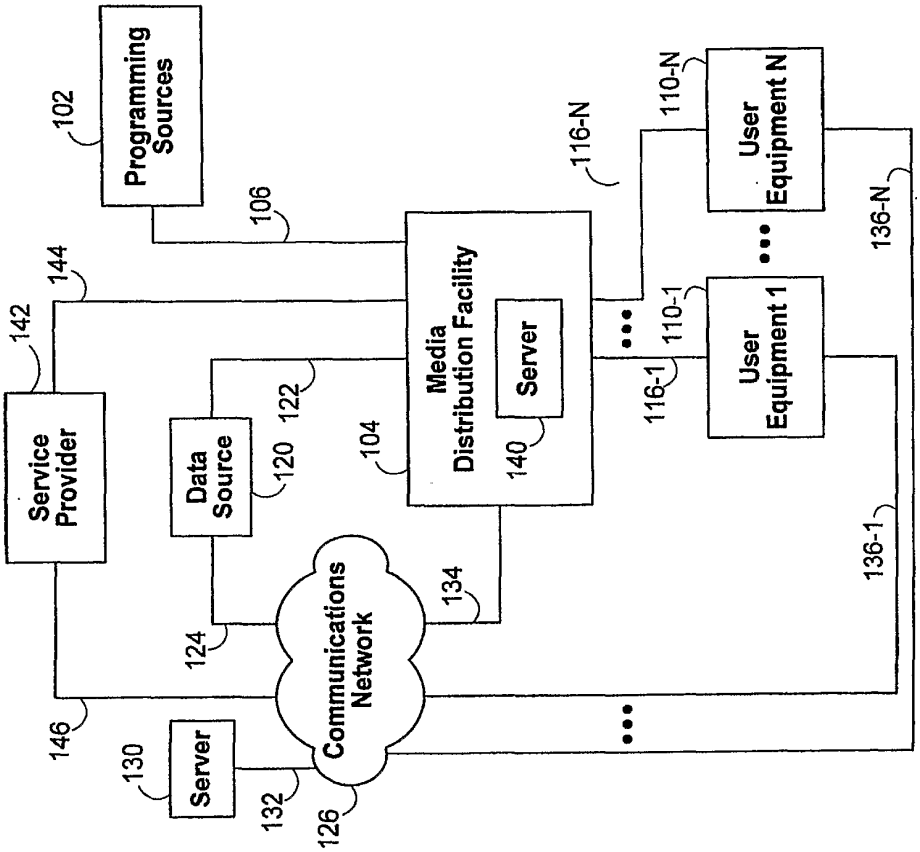
21. The system of claim 13 wherein the media content is any of a playlist, a bookmark, and actual content.

22. The system of claim 13 wherein the media content is available from any of a recording device, the Internet, a video-on-demand server, a broadcast source, and a satellite source.

23. The system of claim 13 wherein the search results comprise at least *one* of a playlist, a bookmark, and actual content.

24. The system of claim 13 wherein the control circuitry is further configured to access the media library using any of television equipment, a personal computer, a laptop computer, a set-top box, a mobile telephone, a personal digital assistant, a BlackBerry™, a portable television, and a portable media player.

25. The system of claim 13 wherein the control circuitry is further configured to access the media library over an Internet communications link.


Programming Sources
102
106
Media Distribution Facility
Server
140
104
116-N
110-N
User Equipment N
136-N
Service Provider
142
144
Data Source
120
122
110-1
User Equipment 1
116-1
136-1
Communications Network
134
124
146
Server
130
132
126

100

FIG. 1

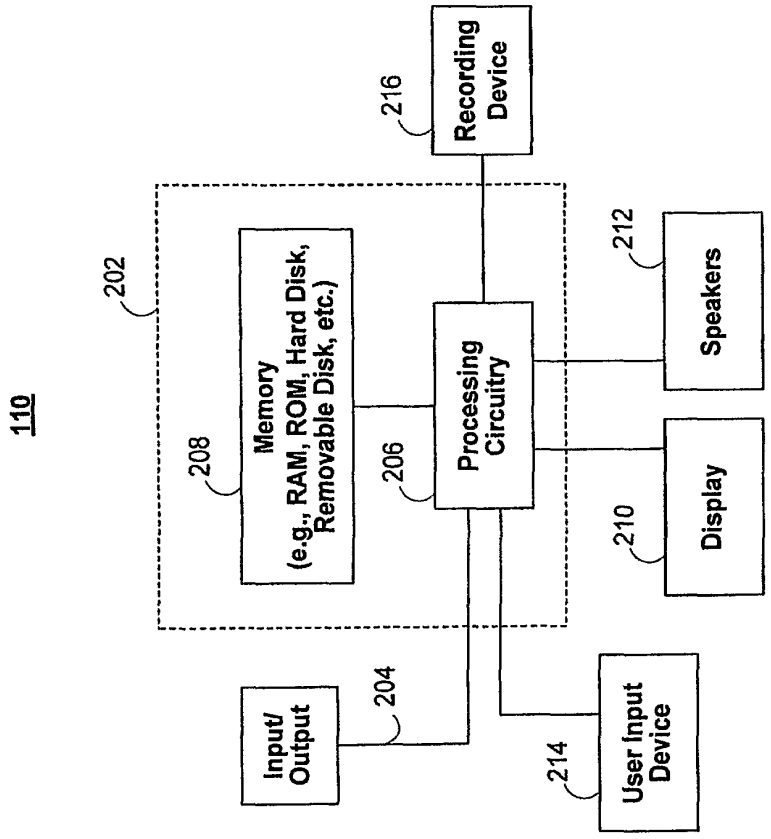
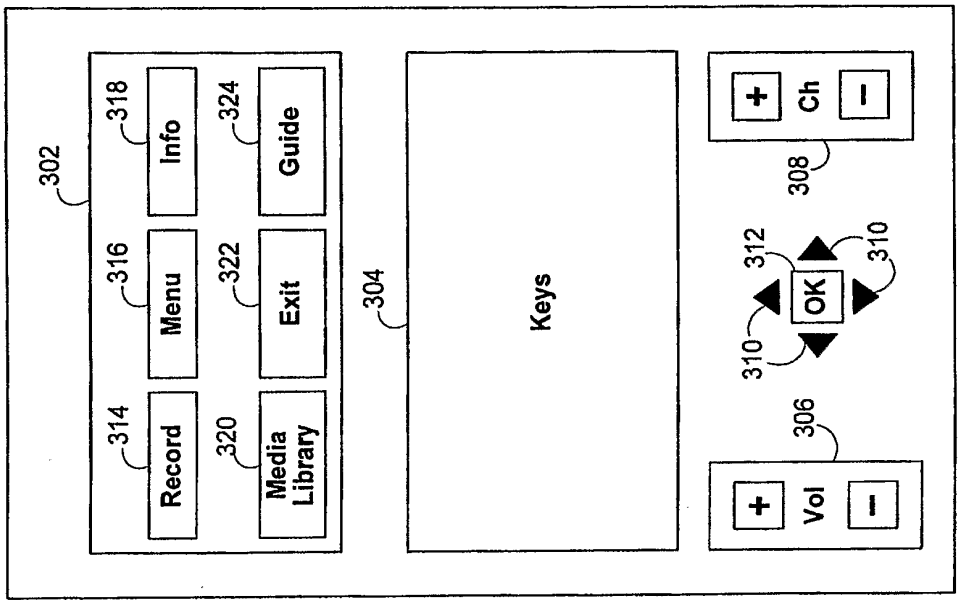

110
202
Memory (e.g., RAM, ROM, Hard Disk, Removable Disk, etc.)
208
Processing Circuitry
206
Recording Device
216
Speakers
212
Display
210
Input/ Output
204
User Input Device
214

FIG. 2


302
Record
314
Menu
316
Exit
322
Info
318
Media Library
320
Guide
324
304
Keys
Vol
+
-
306
Ch
+
-
308
OK
312
310
310

214

FIG. 3

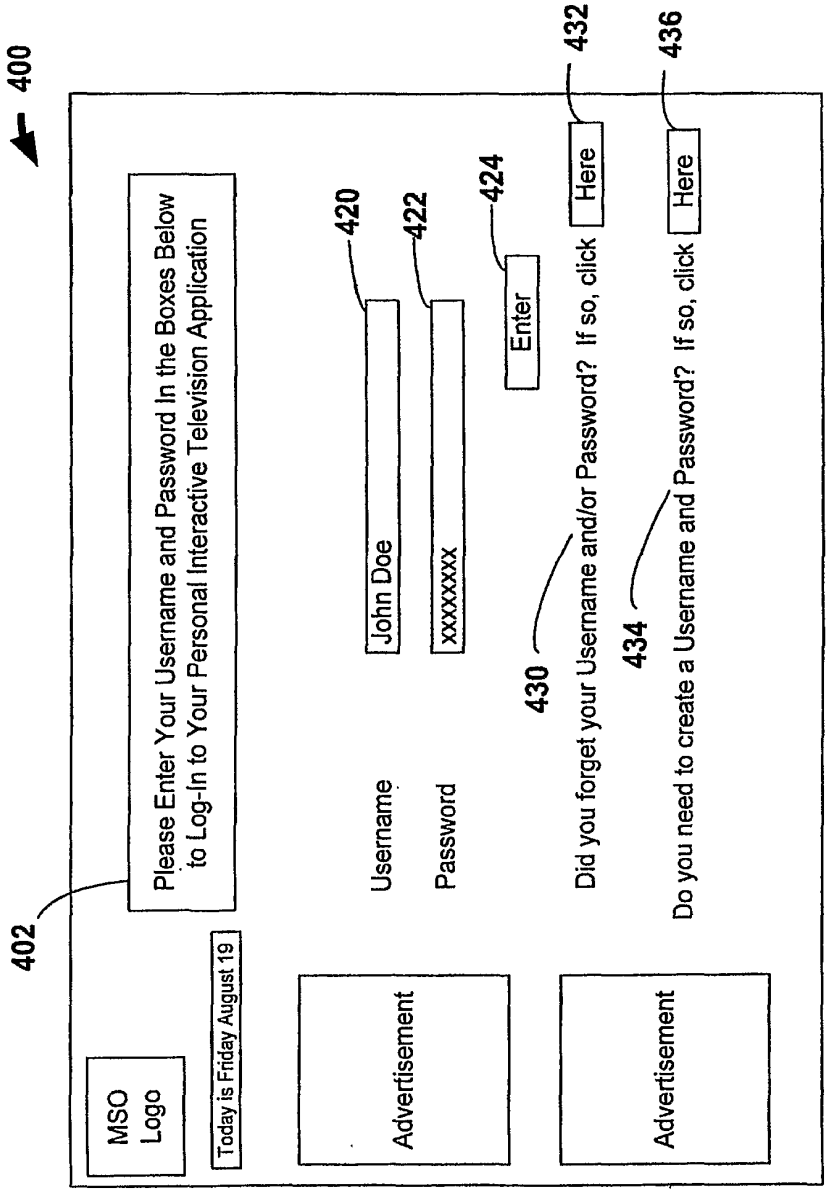

400
402
MSO Logo
Today is Friday August 19
Please Enter Your Username and Password In the Boxes Below to Log-In to Your Personal Interactive Television Application
Advertisement
Advertisement
Username
Password
420
422
424
John Doe
xxxxxxxx
Enter
430
Did you forget your Username and/or Password? If so, click
Here
432
434
Do you need to create a Username and Password? If so, click
Here
436

FIG. 4

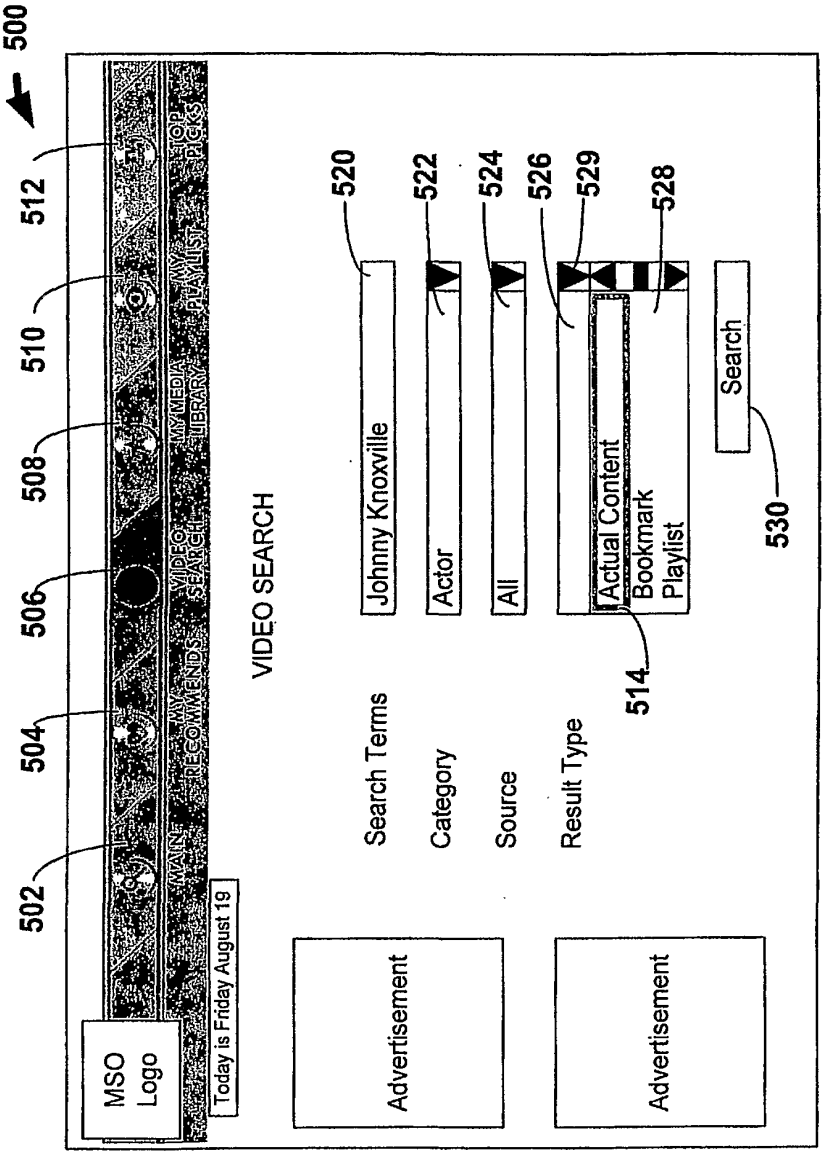
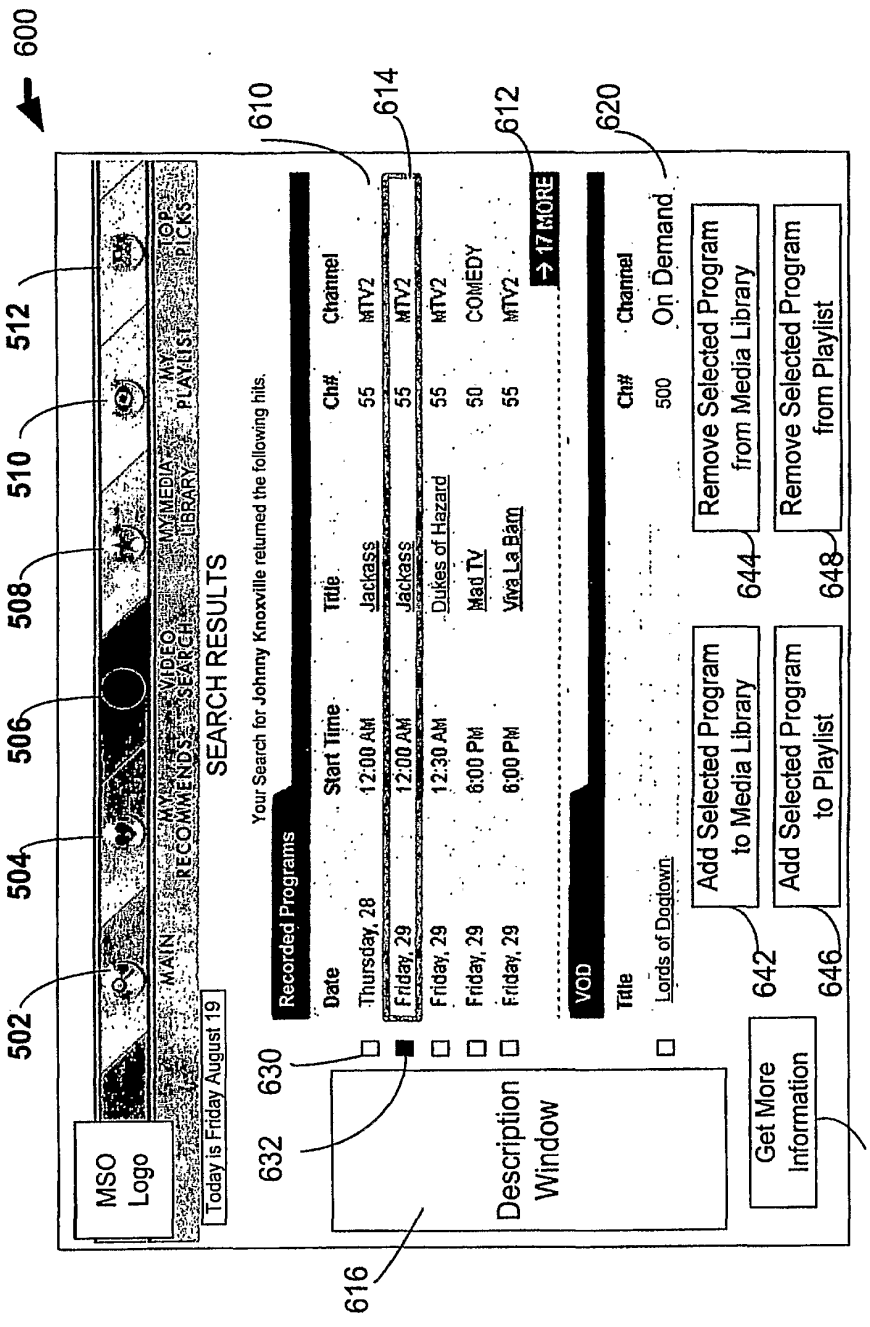

500
502
504
506
508
510
512
MSO Logo
Today is Friday August 19
MAIN
MY RECOMMENDS
VIDEO SEARCH
MY MEDIA LIBRARY
MY PLAYLIST
TOP PICKS
VIDEO SEARCH
Search Terms
Category
Source
Result Type
520
522
524
526
529
528
514
Johnny Knoxville
Actor
All
Actual Content
Bookmark
Playlist
Search
530
Advertisement
Advertisement

FIG. 5


600
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508
510
512
MSO Logo
MAIN
MY RECOMMENDS
VIDEO SEARCH
MY MEDIA LIBRARY
MY PLAYLIST
TOP PICKS
Today is Friday August 19
SEARCH RESULTS
610
614
612
620
Your Search for Johnny Knoxville returned the following hits.
Recorded Programs
Date
Start Time
Title
Ch#
Channel
Thursday, 28
12:00 AM
Jackass
55
MTV2
Friday, 29
12:00 AM
Jackass
55
MTV2
Friday, 29
12:30 AM
Dukes of Hazard
55
MTV2
Friday, 29
6:00 PM
Mad TV
50
COMEDY
Friday, 29
6:00 PM
Viva La Bam
55
MTV2
→ 17 MORE
VOD
Title
Ch#
Channel
Lords of Dogtown
500
On Demand
630
632
Description Window
616
Get More Information
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Add Selected Program to Media Library
642
Add Selected Program to Playlist
646
Remove Selected Program from Media Library
644
Remove Selected Program from Playlist
648

FIG. 6

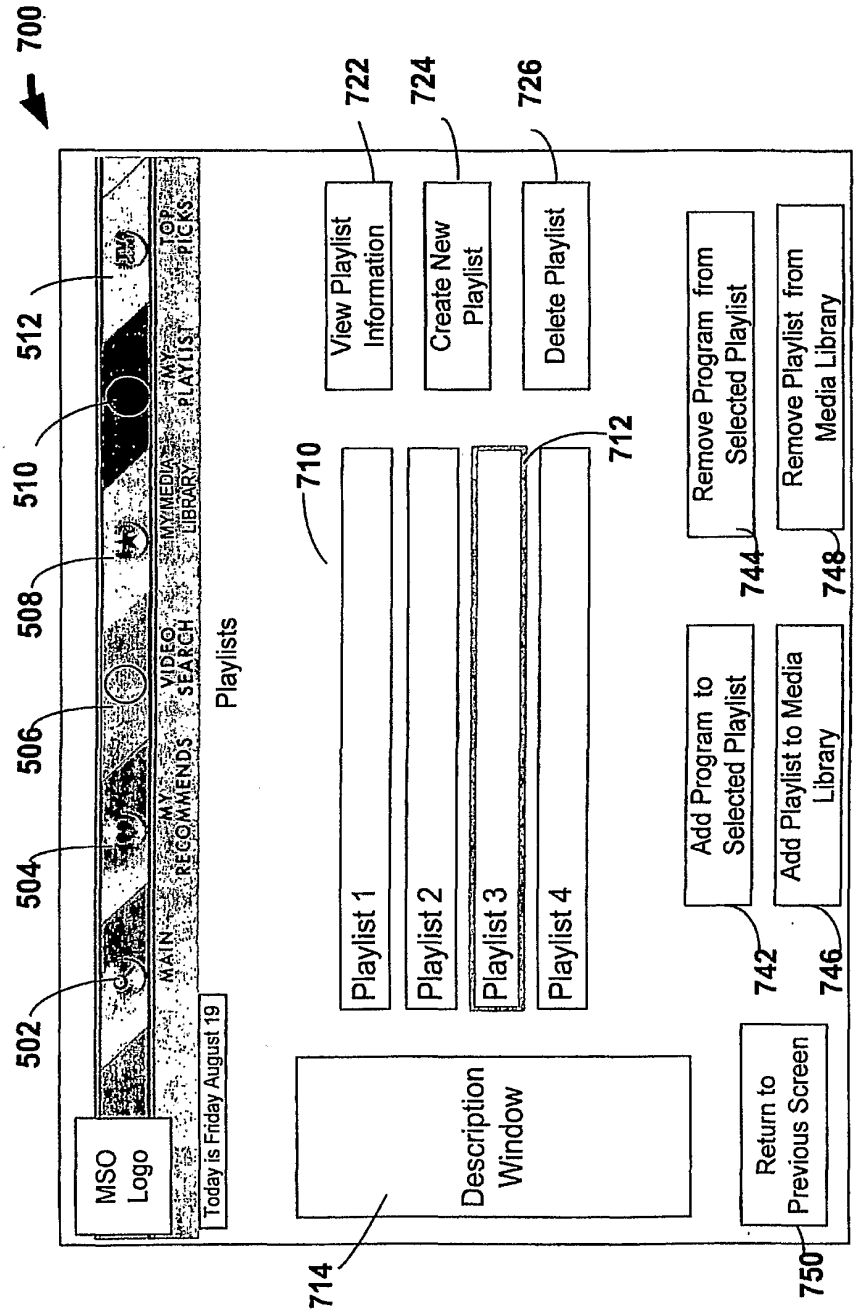
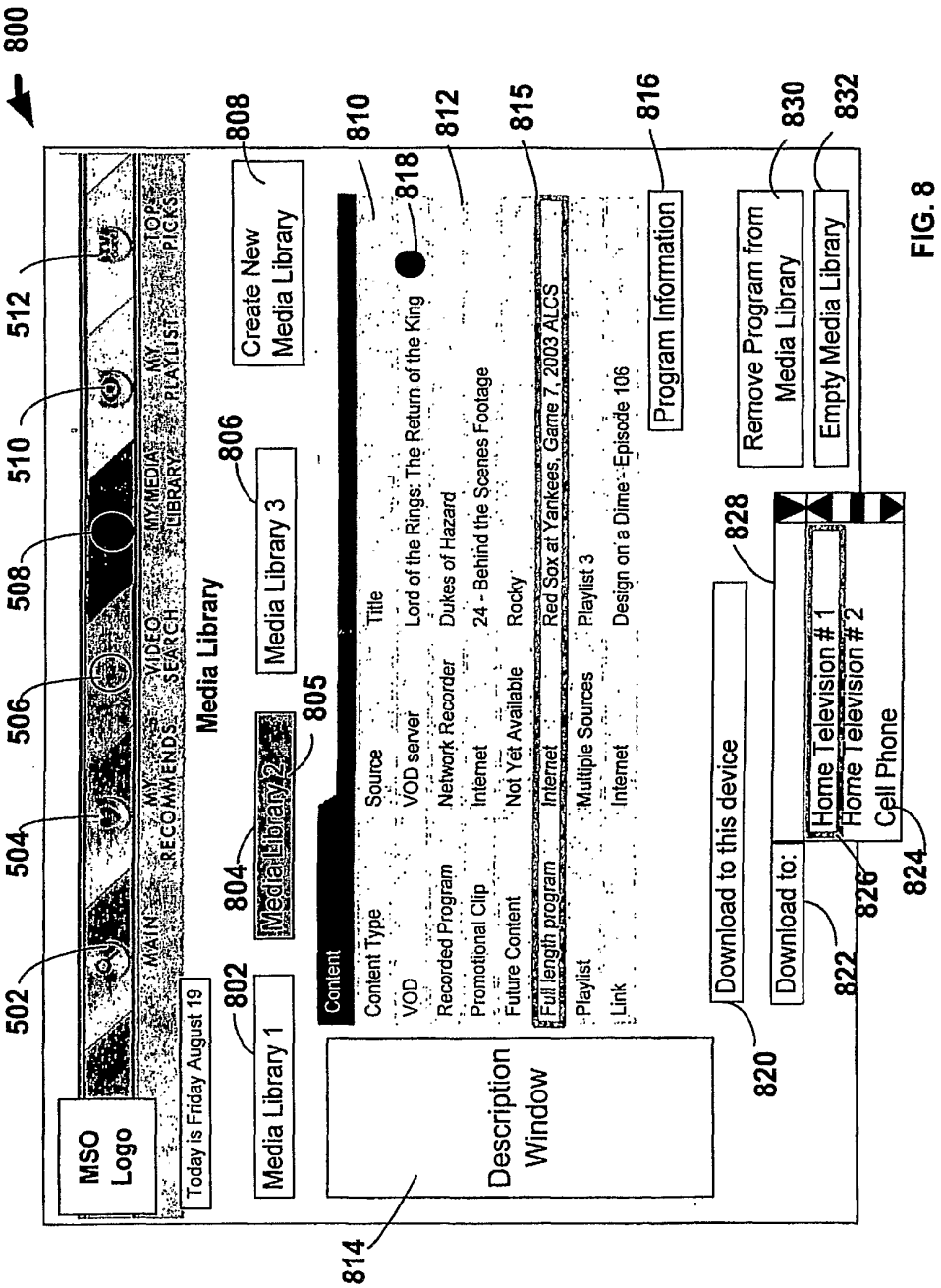


FIG. 7

SUBSTITUTE SHEET (RULE 26)


800
502
504
506
508
510
512
MSO Logo
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RECOMMENDS
MY MEDIA LIBRARY
VIDEO SEARCH
MY PLAYLIST
TOP PICKS
Media Library
802
Media Library 1
804
Media Library 2
805
806
Media Library 3
808
Create New Media Library
810
812
815
816
818
Content
Content Type
VOD
Recorded Program
Promotional Clip
Future Content
Source
VOD server
Network Recorder
Internet
Not Yet Available
Title
Lord of the Rings: The Return of the King
Dukes of Hazard
24 - Behind the Scenes Footage
Rocky
Full length program
Internet
Red Sox at Yankees, Game 7, 2003 ALCS
Playlist
Multiple Sources
Playlist 3
Link
Internet
Design on a Dime - Episode 106
Program Information
814
Description Window
820
Download to this device
822
Download to:
824
826
828
Home Television # 1
Home Television # 2
Cell Phone
830
Remove Program from Media Library
832
Empty Media Library

FIG. 8

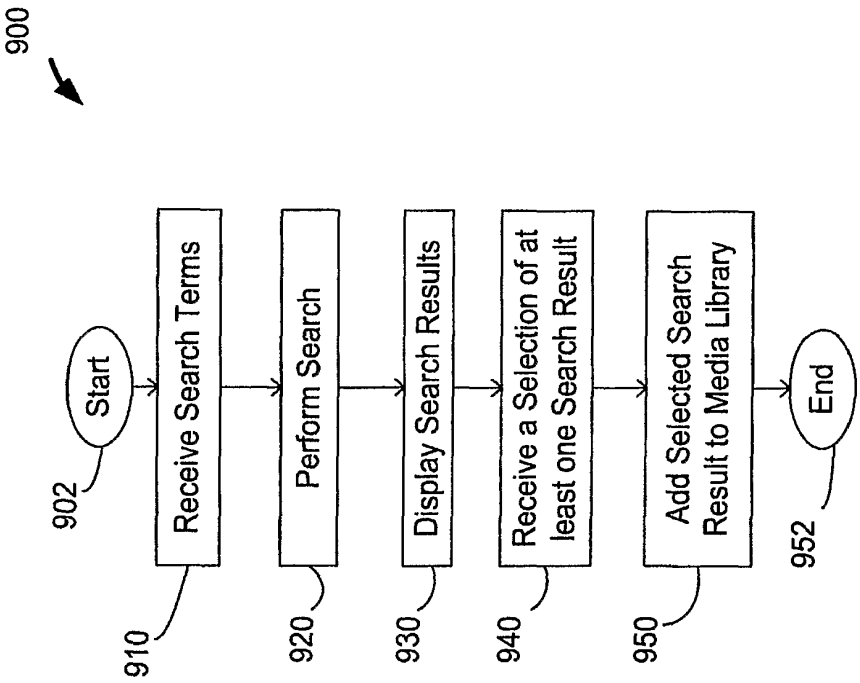
900
Start
902
Receive Search Terms
910
Perform Search
920
Display Search Results
930
Receive a Selection of at least one Search Result
940
Add Selected Search Result to Media Library
950
End
952

FIG. 9

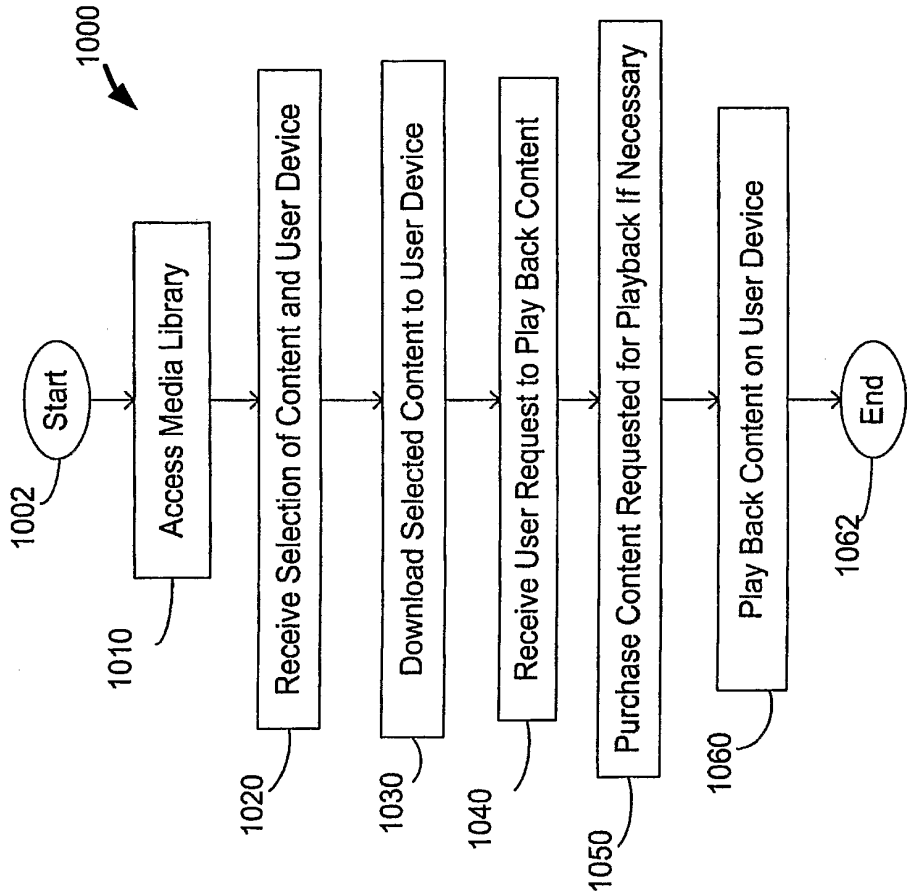
1000
Start
1002
Access Media Library
1010
Receive Selection of Content and User Device
1020
Download Selected Content to User Device
1030
Receive User Request to Play Back Content
1040
Purchase Content Requested for Playback If Necessary
1050
Play Back Content on User Device
1060
End
1062

FIG. 10

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/047430

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06F17/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDEREDTO BE RELEVANT

Category*	Citation of document, with Indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/025180 A1 (BEGEJA LEE [US] ET AL) 5 February 2004 (2004-02-05) abstract paragraph [0041] - paragraph [0061] paragraph [0071] - paragraph [0081] figures 1-4	1-25
X	US 2004/096184 A1 (POSLINSKI THOMAS [US]) 20 May 2004 (2004-05-20) the whole document	1-25
X	US 2002/035697 A1 (MCCURDY KEVIN [US] ET AL) 21 March 2002 (2002-03-21) abstract paragraph [0101] - paragraph [0102] paragraph [0141] - paragraph [0156] figure 7	1-25

-/--

[X] Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the International filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the International filing date but later than the priority date claimed
"T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taKen alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
"&" document member of the same patent family

Date of the actual completion of the International search	Date of mailing of the International search report
21 May 2007	12/06/2007

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Dumitrescu, Cristina

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/047430

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with Indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SUSANNE BOLL, UTZ WESTERMANN: "Meeting experience: Medi ther: an event space for context-aware multimedia experiences" PROCEEDINGS OF THE 2003 ACM SIGMM WORKSHOP ON EXPERIENTIAL TELEPRESENCE ETP '03, [Online] 7 November 2003 (2003-11-07), pages 21-30, XP002434278 Berkeley, California ISBN: 1-58113-775-3 Retrieved from the Internet: URL :http ://del ivery .acm .org/1 0 .1145/990000 /982488/p21-bon.pdf?keyl=982488&key2=9969 139711&coll=portal&dl=ACM&CFID=2181828&CFT 0KEN=68827537> [retrieved on 2007-05-16] the whole document	1-25
A	US 2003/172005 A1 (HELLAL FATEN FAY [US] ET AL) 11 September 2003 (2003-09-11) the whole document	1-25
A	US 2005/015405 A1 (PLASTINA DANIEL [US] ET AL) 20 January 2005 (2005-01-20) abstract paragraph [0023] - paragraph [0028]	1-25

Form PCT/ISA/210 (continuation of second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2006/047430

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004025180 A1	05-02-2004	NONE	
us 2004096184 A1	20-05-2004	NONE	
us 2002035697 A1	21-03-2002	NONE	
us 2003172005 A1	11-09-2003	US 2007094096 A1	26-04-2007
us 2005015405 A1	20-01-2005	NONE	

Form PCTVISA/210 (patent family annex) (April 2005)

Doc Code: PET.AUTO Document Description: Petition automatically granted by EFS-Web	PTO/SB/140 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**PETITION TO WITHDRAW AN APPLICATION FROM ISSUE AFTER PAYMENT OF THE ISSUE FEE UNDER 37 CFR 1.313(c)**
Application Number	15687249
Filing Date	25-Aug-2017
First Named Inventor	David Strober
Art Unit	2173
Examiner Name	DARRIN HOPE
Attorney Docket Number	41197.278581
Title	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

An application may be withdrawn from issue for further action upon petition by the applicant. To request that the Office withdraw an application from issue, applicant must file a petition under this section including the fee set forth in § 1.17(h) and a showing of good and sufficient reasons why withdrawal of the application from issue is necessary.

APPLICANT HEREBY PETITIONS TO WITHDRAW THIS APPLICATION FROM ISSUE UNDER 37 CFR 1.313(c).

A grantable petition requires the following items:
(1) Petition fee; and
(2) One of the following reasons:
(a) Unpatentability of one or more claims, which must be accompanied by an unequivocal statement that one or more claims are unpatentable, an amendment to such claim or claims, and an explanation as to how the amendment causes such claim or claims to be patentable;
(b) Consideration of a request for continued examination in compliance with § 1.114 (for a utility or plant application only); or
(c) Express abandonment of the application. Such express abandonment may be in favor of a continuing application, but not a CPA under 37 CFR 1.53(d).

Petition Fee

- (•) Small Entity
- ( ) Micro Entity
- ( ) Regular Undiscounted

Reason for withdrawal from issue

◯ One or more claims are unpatentable ◉ Consideration of a request for continued examination (RCE) (List of Required Documents and Fees) ◯ Applicant hereby expressly abandons the instant application (any attorney/agent signing for this reason must have power of attorney pursuant to 37 CFR 1.32(b)).
RCE request,submission, and fee. ☐ I certify, in accordance with 37 CFR 1.4(d)(4) that : The RCE request ,submission, and fee have already been filed in the above-identified application on ☒ Are attached.
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES I certify, in accordance with 37 CFR 1.4(d)(4) that I am: ◉ An attorney or agent registered to practice before the Patent and Trademark Office who has been given power of attorney in this application. ◯ An attorney or agent registered to practice before the Patent and Trademark Office, acting in a representative capacity. ◯ A sole inventor ◯ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application ◯ A joint inventor; all of whom are signing this e-petition

Signature	/KEITH J. BAE/
Name	Keith J. Bae
Registration Number	64633

Electronic Patent Application Fee Transmittal

Application Number:	15687249
Filing Date:	25-Aug-2017
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Filer:	Keith Joshua Bae/Traci Burke
Attorney Docket Number:	41197.278581

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
PETITION FEE-37CFR 1.17(H) (GROUP II)	2464	1	70	70
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1020**

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Decision Date : July 22, 2020

In re Application of :

David Strober

DECISION ON PETITION
UNDER CFR 1.313(c)(2)

Application No : 15687249

Filed : 25-Aug-2017

Attorney Docket No : 41197.278581

This is an electronic decision on the petition under 37 CFR 1.313(c)(2), filed July 22, 2020 , to withdraw the above-identified application from issue after payment of the issue fee.

The petition is **GRANTED.**

The above-identified application is withdrawn from issue for consideration of a submission under 37 CFR 1.114 (request for continued examination). See 37 CFR 1.313(c)(2).

Petitioner is advised that the issue fee paid in this application cannot be refunded. If, however, this application is again allowed, petitioner may request that it be applied towards the issue fee required by the new Notice of Allowance.

Telephone inquiries concerning this decision should be directed to the Patent Electronic Business Center (EBC) at 866-217-9197.

This application file is being referred to Technology Center AU 2173 for processing of the request for continuing examination under 37 CFR 1.114 .

Office of Petitions

Electronic Acknowledgement Receipt	
EFS ID:	40076478
Application Number:	15687249
International Application Number:	
Confirmation Number:	4059
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Customer Number:	149550
Filer:	Keith Joshua Bae/Traci Burke
Filer Authorized By:	Keith Joshua Bae
Attorney Docket Number:	41197.278581
Receipt Date:	22-JUL-2020
Filing Date:	25-AUG-2017
Time Stamp:	17:07:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$1020
RAM confirmation Number	E20207LH07053812
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	278581_RCE_Form.pdf	1349897 32b5bca10fb3520498370c303ddd13592501b886	no	3
Warnings:					
Information:					
2	Quick Path Information Disclosure Statement	278581_QPIDS_Form.pdf	178552 df618ba25ad73ae6f34ee596ecb022ce144bfe96	no	2
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	278581_IDS.pdf	1035143 1a820816d313df51c142953c450115a81cfde68a	no	6
Warnings:					
Information:					
4	Foreign Reference	ForRef_01_WO2008108718A1.pdf	703038 45ba11cf9c9165170204bce7293aa288127db67b	no	40
Warnings:					
Information:					
5	Foreign Reference	ForRef_02_WO2007078745A1.pdf	914199 3d1dd6494c9370fca10164f5d30f273182da9246	no	68
Warnings:					
Information:					
6	Petition automatically granted by EFS	petition-request.pdf	31604 561b65b9f6632155023700014bbf460f724f4e0c	no	2
Warnings:					
Information:					

7	Fee Worksheet (SB06)	fee-info.pdf	32402 f1fa3c124a8ee0326c6f8efb2ed845b75c6640ea	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	4244835	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

To: docket.shb@clarivate.com,IPDOCKET@SHB.COM,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 149550

Jul 23, 2020 04:30:18 AM

Dear PAIR Customer:

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613
UNITED STATES

The following USPTO patent application(s) associated with your Customer Number, 149550 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

Disclaimer:
The list of documents shown below is provided as a courtesy and is not part of the official file wrapper. The content of the images shown in PAIR is the official record.

Application	Document	Mailroom Date	Attorney Docket No.
15687249	ISSUE.NTF	07/22/2020	41197.278581

To view your correspondence online or update your email addresses, please visit us anytime at https://sportal.uspto.gov/secure/myportal/privatepair.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :66043

Sale Accounting Date:08/03/2020

Sale Item Reference Number	Effective Date
15687249	07/22/2020

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I202082B03129280	2806	SUBMISSION- INFORMATION DISCLOSURE STMT	$120.00	Deposit Account

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	08/25/2017	David Strober	41197.278581	4059

149550 7590 09/03/2020

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

EXAMINER	
HOPE, DARRIN	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
09/03/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

shbdocketing@shb.com

Notice of Allowability	Application No. 15/687,249	Applicant(s) Strober, David	
	Examiner DARRIN HOPE	Art Unit 2173	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to the IDS filed on 7/22/2020.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-20 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 7/22/2020.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/DARRIN HOPE/ Examiner, Art Unit 2173	/TADESSE HAILU/ Primary Examiner, Art Unit 2173

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

2. This Office Action is responsive to the communications filed on 12 December 2019.

Allowable Subject Matter

3. Claims 1-20 are allowed.

4. The following is an examiner's statement of reasons for allowance:

The present invention is directed to a computer-implemented method and device for presenting and controlling content on a display device.

The prior arts fails to show individually or in combination the elements recited in independent claim 1.

Specifically, the prior art references fail to show, in part, "**obtaining a synchronization code associated with the first computing device,** wherein the associated synchronization code is stored on a remote server device; **providing the synchronization code to a second computing device in communication with the remote server device, wherein the provided synchronization code causes the remote server device to store an association between the first computing device and the second computing device;** receiving, from the remote server device, a first message that includes at least one command in a first format, the first message being received **based at least in part on the stored association and on a second message including at least one command in a second format having been sent from the associated second computing device; selecting a first media player application from a plurality of media player applications based at least in**

part on the first format of the first message, the first media player application being selected to play a first piece of content referenced in the received first message; and **controlling how the selected first media player application plays the referenced first piece of content** based on a first command of the at least one command in the first format having been included in the received first message" as recited in independent claim 1. At least based on the above distinctions, the Examiner submits that independent claim 1 is patentable over the combination of the cited references. Independent claims 12 and 17 include similar limitations to that of claim 1 and are also patentable over the cited prior art for at least the same reasons described above with respect to claim 1. At least by virtue of their dependency, the Examiner submits that the remaining claims are also patentable over the combination of the cited references.

Accordingly, Claims 1-20 are allowed.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRIN HOPE whose telephone number is (571)270-5079. The examiner can normally be reached on Mon-Thr - 7-4:30, Fri - 7-3:30, Alt. Fri Off.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an

interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu D Vu can be reached on (571)272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DARRIN HOPE
Examiner
Art Unit 2173

/TADESSE HAILU/
Primary Examiner, Art Unit 2173

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	**Art Unit**
	DARRIN HOPE	2173

CPC						
Symbol					**Type**	**Version**
G06F	/	16	/	74	F	2019-01-01
G06F	/	16	/	951	I	2019-01-01
G06F	/	9	/	452	I	2018-02-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

/DARRIN HOPE/ Examiner, Art Unit 2173	30 August 2020	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/TADESSE HAILU/ Primary Examiner, Art Unit 2173	31 August 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office — Part of Paper No.: 20200830

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	**Art Unit**
	DARRIN HOPE	2173

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G06F	/	17	/	30
G06F	/	9	/	44

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
715	716

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

/DARRIN HOPE/ Examiner, Art Unit 2173	30 August 2020	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/TADESSE HAILU/ Primary Examiner, Art Unit 2173	31 August 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office — Part of Paper No.: 20200830

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	**Art Unit**
	DARRIN HOPE	2173

☑ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10	19	19										
2	2	11	11	20	20										
3	3	12	12												
4	4	13	13												
5	5	14	14												
6	6	15	15												
7	7	16	16												
8	8	17	17												
9	9	18	18												

/DARRIN HOPE/ Examiner, Art Unit 2173	30 August 2020	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/TADESSE HAILU/ Primary Examiner, Art Unit 2173	31 August 2020	O.G. Print Claim(s)	O.G. Print Figure
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U.S. Patent and Trademark Office — Part of Paper No.: 20200830

PTO/SB/08a (02-18)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	15687249
Filing Date	2017-08-25
First Named Inventor	David Strober
Art Unit	2173
Examiner Name	Darrin Hope
Attorney Docket Number	41197.278581

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8060631	B2	2011-11-15	Collart et al.	
	2	8614625	B2	2013-12-24	Alsina et al.	
	3	8671440	B2	2014-03-11	Damola et al.	
	4	8782262	B2	2014-07-15	Collart et al.	
	5	8875180	B2	2014-10-28	DEMCHENKO et al.	
	6	8880491	B2	2014-11-04	Morris	
	7	9071792	B2	2015-06-30	Alsina et al.	
	8	9420025	B2	2016-08-16	Park	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

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	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

	9	8238887	B2	2012-08-07	Filipov	
	10	8620284	B2	2013-12-31	Filipov	
	11	9148756	B2	2015-09-29	Filipov	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20090150553	A1	2009-06-11	Collart et al.	
	2	20090172780	A1	2009-07-02	Sukeda et al.	
	3	20090193466	A1	2009-07-30	Ehreth et al.	
	4	20100138780	A1	2010-06-03	Marano et al.	
	5	20100241699	A1	2010-09-23	MUTHUKUMARASAMY et al.	
	6	20110296465	A1	2011-12-01	Krishnan et al.	

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	7	20120114313	A1	2012-05-10	Phillips et al.	
	8	20120192225	A1	2012-07-26	Harwell et al.	
	9	20160241912	A1	2016-08-18	McCarthy et al.	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	2008108718	WO	A1	2008-09-12	Telefonaktiebolaget LM Ericsson		
	2	2007078745	WO	A1	2007-07-12	UNITED VIDEO PROPERTIES, INC.		

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		

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EXAMINER SIGNATURE

Examiner Signature	/DARRIN HOPE/	Date Considered	08/30/2020

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
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	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/KEITH J. BAE/	Date (YYYY-MM-DD)	2020-07-22
Name/Print	Keith J. Bae	Registration Number	64633

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	15687249	Filing Date	2017-08-25	Docket Number (if applicable)	41197.278581	Art Unit	2173
First Named Inventor	David Strober			Examiner Name	Darrin Hope		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☐ Amendment/Reply

☒ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☒ Other Petition to withdraw an application from issue after payment of the issue fee under 37 CFR 1.313(c)

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 192112

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Signature of Registered U.S. Patent Practitioner			
Signature	/KEITH J. BAE/	Date (YYYY-MM-DD)	2020-09-03
Name	Keith J. Bae	Registration Number	64633

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Number	15687249
Filing Date	2017-08-25
First Named Inventor	David Strober
Art Unit	2173
Examiner Name	Darrin Hope
Attorney Docket Number	41197.278581

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9720887	B2	2017-08-01	Pappu, et al.	
	2	8782528	B2	2014-07-15	Strober	
	3	8356251	B2	2013-01-15	Strober	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	1							

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		
If you wish to add additional non-patent literature document citation information please click the Add button			Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

CERTIFICATION STATEMENT

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That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/KEITH J. BAE/	Date (YYYY-MM-DD)	2020-09-03
Name/Print	Keith J. Bae	Registration Number	64633

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	15687249
Filing Date:	25-Aug-2017
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Filer:	Keith Joshua Bae/Traci Burke
Attorney Docket Number:	41197.278581

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
PETITION FEE-37CFR 1.17(H) (GROUP II)	2464	1	70	70
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1020**

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Decision Date : September 3, 2020

In re Application of :

David Strober

DECISION ON PETITION
UNDER CFR 1.313(c)(2)

Application No : 15687249

Filed : 25-Aug-2017

Attorney Docket No : 41197.278581

This is an electronic decision on the petition under 37 CFR 1.313(c)(2), filed September 3, 2020 to withdraw the above-identified application from issue after payment of the issue fee.

The petition is **GRANTED.**

The above-identified application is withdrawn from issue for consideration of a submission under 37 CFR 1.114 (request for continued examination). See 37 CFR 1.313(c)(2).

Petitioner is advised that the issue fee paid in this application cannot be refunded. If, however, this application is again allowed, petitioner may request that it be applied towards the issue fee required by the new Notice of Allowance.

Telephone inquiries concerning this decision should be directed to the Patent Electronic Business Center (EBC) at 866-217-9197.

This application file is being referred to Technology Center AU 2173 for processing of the request for continuing examination under 37 CFR 1.114 .

Office of Petitions

Electronic Acknowledgement Receipt	
EFS ID:	40467855
Application Number:	15687249
International Application Number:	
Confirmation Number:	4059
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Customer Number:	149550
Filer:	Keith Joshua Bae/Traci Burke
Filer Authorized By:	Keith Joshua Bae
Attorney Docket Number:	41197.278581
Receipt Date:	03-SEP-2020
Filing Date:	25-AUG-2017
Time Stamp:	15:50:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$1020
RAM confirmation Number	E202093F50407942
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition automatically granted by EFS	petition-request.pdf	31604 db0e87461f4b58936a6bf7d3862202e656f4e03c	no	2
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	278581_RCE.pdf	1350052 42fb7226ac09b72caccd1564ecc81c2c24c49543	no	3
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	278581_IDS.pdf	1034340 fed236ea580fec1857a58b0d333302a55236ab75	no	4
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	32402 0404d48e2abba79b49c16e03e53612e8e4a47487	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2448398		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc Code: PET.AUTO Document Description: Petition automatically granted by EFS-Web	PTO/SB/140 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**PETITION TO WITHDRAW AN APPLICATION FROM ISSUE AFTER PAYMENT OF THE ISSUE FEE UNDER 37 CFR 1.313(c)**
Application Number	15687249
Filing Date	25-Aug-2017
First Named Inventor	David Strober
Art Unit	2173
Examiner Name	DARRIN HOPE
Attorney Docket Number	41197.278581
Title	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

An application may be withdrawn from issue for further action upon petition by the applicant. To request that the Office withdraw an application from issue, applicant must file a petition under this section including the fee set forth in § 1.17(h) and a showing of good and sufficient reasons why withdrawal of the application from issue is necessary.

APPLICANT HEREBY PETITIONS TO WITHDRAW THIS APPLICATION FROM ISSUE UNDER 37 CFR 1.313(c).

A grantable petition requires the following items:
(1) Petition fee; and
(2) One of the following reasons:
(a) Unpatentability of one or more claims, which must be accompanied by an unequivocal statement that one or more claims are unpatentable, an amendment to such claim or claims, and an explanation as to how the amendment causes such claim or claims to be patentable;
(b) Consideration of a request for continued examination in compliance with § 1.114 (for a utility or plant application only); or
(c) Express abandonment of the application. Such express abandonment may be in favor of a continuing application, but not a CPA under 37 CFR 1.53(d).

Petition Fee

- (•) Small Entity
- ( ) Micro Entity
- ( ) Regular Undiscounted

Reason for withdrawal from issue

◯ One or more claims are unpatentable ◉ Consideration of a request for continued examination (RCE) (List of Required Documents and Fees) ◯ Applicant hereby expressly abandons the instant application (any attorney/agent signing for this reason must have power of attorney pursuant to 37 CFR 1.32(b)).
RCE request,submission, and fee. ☐ I certify, in accordance with 37 CFR 1.4(d)(4) that : The RCE request ,submission, and fee have already been filed in the above-identified application on ☒ Are attached.
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES I certify, in accordance with 37 CFR 1.4(d)(4) that I am: ◉ An attorney or agent registered to practice before the Patent and Trademark Office who has been given power of attorney in this application. ◯ An attorney or agent registered to practice before the Patent and Trademark Office, acting in a representative capacity. ◯ A sole inventor ◯ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application ◯ A joint inventor; all of whom are signing this e-petition

Signature	/KEITH J. BAE/
Name	Keith J. Bae
Registration Number	64633

To: shbdocketing@shb.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 149550

Sep 03, 2020 04:23:22 AM

Dear PAIR Customer:

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613
UNITED STATES

The following USPTO patent application(s) associated with your Customer Number, 149550 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

Disclaimer:
The list of documents shown below is provided as a courtesy and is not part of the official file wrapper. The content of the images shown in PAIR is the official record.

Application	Document	Mailroom Date	Attorney Docket No.
15687249	NOA	09/03/2020	41197.278581
	1449	09/03/2020	41197.278581

To view your correspondence online or update your email addresses, please visit us anytime at https://sportal.uspto.gov/secure/myportal/privatepair.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	15687249
Filing Date	2017-08-25
First Named Inventor	David Strober
Art Unit	2173
Examiner Name	Darrin Hope
Attorney Docket Number	41197.278581

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

	1	Preinterview First Office Action dated September 03, 2020, in U.S. Patent Application no. 16/917,095, 24 pages.	

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

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Signature	/KEITH J. BAE/	Date (YYYY-MM-DD)	2020-11-30
Name/Print	Keith J. Bae	Registration Number	64633

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4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

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UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
15/687,249	**11/30/2020 04:01:58 PM ET**	**41197.278581**

Title of Invention

PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	4059	FILED BY	Traci Burke
PATENT CENTER #	60112384	FILING DATE	08/25/2017
CUSTOMER #	149550	FIRST NAMED INVENTOR	David Strober
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Keith Bae

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
41197-278581-IDSForm.pdf	4	Information Disclosure Statement (IDS) Form (SB08)	983 KB
278581_NPL.pdf	24	Non Patent Literature	1070 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
41197-278581-IDSForm.pdf	D3A828AD174A2A41777114F175259986609CA827583FBF02687 1C30F137B08EE53C427A4603549E90FCC23727ECD4E9051968 A6221997E4A57CD8B005B0F0A49

278581_NPL.pdf AED3BE00EA366CF78D16E68A36A61242ED682656DBBB251B
CD229FB12DDE66ACF65A9E1E82CD9B06522DF3943B9E062B
413A34ECFA7FE160EDAF15D54A55297C

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/917,095	06/30/2020	David Strober	41197.280029	6770

149550 7590 09/03/2020

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

EXAMINER	
HOPE, DARRIN	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
09/03/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

shbdocketing@shb.com

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA. This Office Action is responsive to the communications filed on 6/30/2020. Claims 1-20 are presented for examinations.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

3. Claims 1, 5, 8, 12, 15 and 16 are rejected under 35 U.S.C. 102(a)(2) as being anticipated by Sukeda et al. (Hereinafter, Sukeda, US 2009/0172780 A1).

4. **Per claim 1**, Sukeda discloses a non-transitory computer storage medium storing computer-useable instructions (e.g., data storing part 100 as shown in Fig. 1) that, when used by a computing device, cause the computing device to perform operations comprising:

- providing a unique identifier of the computing device (e.g., a display terminal) to another computing device (e.g., an operation terminal such as a mobile phone and a mobile terminal) (e.g., step 331 as shown in Fig. 11; paragraph [0052]; paragraph [0066], "*FIG. 11 shows a processing procedure for newly registering the operation terminal such as a mobile phone and a mobile terminal. While the QR Code in which the URL for registration including the display terminal ID is encoded is displayed on the display terminal (331), the QR Code is read by use*

of the operation terminal (mainly, mobile phone) (332) …" ; Examiner's Note: Sukeda discloses providing a terminal ID for a display terminal 302.);

- receiving a set of messages from the other computing device based on the provided unique identifier (paragraph [0052], "… *When the QR Code is read using the operation terminal (mainly, mobile phone) (303), and the operation terminal accesses the URL for registration with an identification code of the operation terminal itself being attached (304), the server receives the display terminal ID and the terminal identification code of the operation terminal, and starts registration processing...* "; Examiner's Note: Sukeda discloses a server receiving a message from an operation terminal having the terminal identifier.), the received set of messages referencing a piece of content associated with a first media playing element of a plurality of media playing elements (e.g., data 112 as shown in Fig. 3; paragraph [0050], " *The data 112 with respect to the latest display contents/list is data for storing the contents and list to be displayed by each display terminal together with a mode to display. The data 112 includes information, such as a display mode 161 whether to display a single content or a list display, an ID 162 of the display terminal, an ID (or arrangement) 163 of the contents to be displayed, a search condition and keyword 164 inputted from the operation terminal (when needed), and a date and time of update 165. Metadata 170 of each content is referred to from the content ID 163. The metadata 170 includes a reference 175 to a content body 177 and variety of information related to the content …* "), and including a set of commands that corresponds to the first media playing element (e.g., data 113 as shown in Fig. 3; paragraph [0050],

"…*The data 113 includes an ID 181 of the display terminal and information such as a displayed state 182, a volume 183, a date and time of update 184, etc., and defines the playback status and volume of each display terminal.* "; paragraph [0053], " *...When the operation terminal sends a command to change the playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322)…* ");

- selecting the first media playing element from the plurality of media playing elements based at least in part on the received message(e.g., step 318 as shown in Fig. 5; paragraph [0053], "*… When the list of the contents is browsed on the operation terminal (317) and an individual content is selected from the list (318), the server updates the latest display contents 112, and displays a thumbnail image, detailed contents information, or the like on a screen of the operation terminal (319)…* "); and
- controlling how the selected first media playing element plays the referenced piece of content based on at least one command of the set of commands included in the received set of messages (paragraph [0015] ; paragraph [0046]; paragraph [0053], "*… On the operation terminal, the thumbnail and a description of the contents are browsed (320), and the playback status and the volume are adjusted when necessary (321). When the operation terminal sends a command to change the playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322) ...* "; paragraph [0059], "*… When operation of changing playback status and adjustment of the volume are performed on this screen, a command is sent to the*

server so that contents playback in the display terminal is controlled. "; paragraph [0060]).

5. **Per claim 5**, Sukeda discloses the medium of claim 1, wherein the unique identifier includes one of an IP address, a MAC address, a web cookie, a browser cookie, a QR code (paragraph [0052]), a RFID code, a text, or a synchronization code. Sukeda disclose scanning a QR code identifying a URL address to a server. A unique display terminal ID is provided to a server.

6. **Per claim 8**, Sukeda discloses a computerized system comprising:

- a server (e.g., server 001 as shown in Fig. 1; paragraph [0011]; paragraph [0046]); and
- a media receiver (e.g., display terminal as shown in Fig. 1) to
- provide a unique identifier of the computing device (e.g., a display terminal) to another computing device (e.g., an operation terminal such as a mobile phone and a mobile terminal) (e.g., step 331 as shown in Fig. 11; paragraph [0052]; paragraph [0066], "*FIG. 11 shows a processing procedure for newly registering the operation terminal such as a mobile phone and a mobile terminal. While the QR Code in which the URL for registration including the display terminal ID is encoded is displayed on the display terminal (331), the QR Code is read by use of the operation terminal (mainly, mobile phone) (332) …*" ; Examiner's Note: Sukeda discloses providing a terminal ID for a display terminal 302.);
- receive a set of messages from the other computing device based on the provided unique identifier (paragraph [0052], "*… When the QR Code is read using the operation terminal (mainly, mobile phone) (303), and the operation terminal*

accesses the URL for registration with an identification code of the operation terminal itself being attached (304), the server receives the display terminal ID and the terminal identification code of the operation terminal, and starts registration processing... "; Examiner's Note: Sukeda discloses a server receiving a message from an operation terminal having the terminal identifier.), the received set of messages referencing a piece of content associated with a first media playing element of a plurality of media playing elements (e.g., data 112 as shown in Fig. 3; paragraph [0050], " *The data 112 with respect to the latest display contents/list is data for storing the contents and list to be displayed by each display terminal together with a mode to display. The data 112 includes information, such as a display mode 161 whether to display a single content or a list display, an ID 162 of the display terminal, an ID (or arrangement) 163 of the contents to be displayed, a search condition and keyword 164 inputted from the operation terminal (when needed), and a date and time of update 165. Metadata 170 of each content is referred to from the content ID 163. The metadata 170 includes a reference 175 to a content body 177 and variety of information related to the content …* "), and including a set of commands that corresponds to the first media playing element (e.g., data 113 as shown in Fig. 3; paragraph [0050], "*…The data 113 includes an ID 181 of the display terminal and information such as a displayed state 182, a volume 183, a date and time of update 184, etc., and defines the playback status and volume of each display terminal.* "; paragraph [0053], " *...When the operation terminal sends a command to change the*

playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322)… ");

- select the first media playing element from the plurality of media playing elements based at least in part on the received message(e.g., step 318 as shown in Fig. 5; paragraph [0053], "*… When the list of the contents is browsed on the operation terminal (317) and an individual content is selected from the list (318), the server updates the latest display contents 112, and displays a thumbnail image, detailed contents information, or the like on a screen of the operation terminal (319)…* "); and
- control how the selected first media playing element plays the referenced piece of content based on at least one command of the set of commands included in the received set of messages (paragraph [0015] ; paragraph [0046]; paragraph [0053], "*… On the operation terminal, the thumbnail and a description of the contents are browsed (320), and the playback status and the volume are adjusted when necessary (321). When the operation terminal sends a command to change the playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322) ...* "; paragraph [0059], "*… When operation of changing playback status and adjustment of the volume are performed on this screen, a command is sent to the server so that contents playback in the display terminal is controlled.* "; paragraph [0060]).

7. **Per claim 12**, Sukeda discloses the computerized system of claim 8, wherein the unique identifier includes one of an IP address, a MAC address, a web cookie, a

browser cookie, a QR code (paragraph [0052]), a RFID code, a text, or a synchronization code. Sukeda disclose scanning a QR code identifying a URL address to a server. A unique display terminal ID is provided to a server.

8. **Per claim 15**, Sukeda discloses the computerized system of claim 8, wherein each media playing element of the plurality of media playing elements is operable to play and/or control a corresponding type of media (paragraph [0015] ; paragraph [0046]; paragraph [0053], "... *On the operation terminal, the thumbnail and a description of the contents are browsed (320), and the playback status and the volume are adjusted when necessary (321). When the operation terminal sends a command to change the playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322) ...* "; paragraph [0059], "... *When operation of changing playback status and adjustment of the volume are performed on this screen, a command is sent to the server so that contents playback in the display terminal is controlled.* "; paragraph [0060]).

9. **Per claim 16**, Sukeda discloses the computerized system of claim 8, wherein the set of messages is received from the computing device based further on each of the computing device and the media receiver being in communication with the server (Abstract; paragraphs [0010-0011]; paragraphs [0013-0014]; paragraph [0046]).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having

ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

11.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 2-4, 6, 7, 9-11, 13, 14 and 17-20 are rejected under 35 U.S.C. 103 as being unpatentable over Sukeda et al. (Hereinafter, Sukeda, US 2009/0172780 A1) in view of Mahajan et al. (Hereinafter, Mahajan, US 2009/0248802 A1).

14. **Per claim 2,** Sukeda discloses the medium of claim 1, but does not expressly disclose wherein the set of commands included in the received set of messages is recognizable by the first media playing element.

15. Mahajan discloses wherein the set of commands included in the received set of messages is recognizable by the first media playing element (paragraph [0013]; paragraph [0022], " *… For example, in the present example the collaboration media abstraction layer 130 can abstract or genericize the media playback commands specific to media platform 122. The genericized media playback commands can then be translated into media playback commands specific to the client's media platform 126.*").

16. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing

multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

17. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 2.

18. **Per claim 3**, Sukeda and Mahajan disclose the medium of claim 2, wherein the set of commands is converted via an API adapter (Mahajan, e.g., RTS abstraction module 210 as shown in Fig. 2) to be recognizable by the first media playing element, the set of commands being converted based on a determination that the first media playing element is associated with the referenced piece of content (Mahajan, paragraphs [0013-0014]; paragraph [0022]; paragraph [0036]; paragraph [0041-0042]).

19. **Per claim 4,** Sukeda discloses the medium of claim 1, but does not expressly disclose wherein the set of commands is defined in a universal format and converted to a particular format recognizable by the first media playing element.

20. Mahajan discloses wherein the set of commands is defined in a universal format and converted to a particular format recognizable by the first media playing element (paragraph [0013]; paragraph [0022], " *… For example, in the present example the collaboration media abstraction layer 130 can abstract or genericize the media playback*

commands specific to media platform 122. The genericized media playback commands can then be translated into media playback commands specific to the client's media platform 126.").

21. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

22. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 4.

23. **Per claim 6**, Sukeda discloses the medium of claim 1, but does not expressly disclose wherein the received set of commands includes programming code associated with the first media playing element.

24. Mahajan discloses wherein the received set of commands includes programming code (e.g., generic media operations 310A-310I as shown in Fig. 3) associated with the first media playing element (paragraph [0036]).

25. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing

multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

26. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 6.

27. **Per claim 7**, Sukeda discloses the medium of claim 1, but does not expressly disclose wherein each media playing element of the plurality of media playing elements is operable to play and/or control a corresponding type of media.

28. Mahajan discloses wherein each media playing element of the plurality of media playing elements is operable to play and/or control a corresponding type of media (paragraphs [0039-0040]).

29. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This

method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

30. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 7.

31. **Per claim 9**, Sukeda discloses the computerized system of claim 8, but does not expressly disclose wherein the set of commands in the universal format is included in the set of messages communicated from the computing device.

32. Mahajan discloses wherein the set of commands in the universal format is included in the set of messages communicated from the computing device (paragraphs [0039-0040]; paragraph [0042]).

33. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

34. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 9.

35. **Per claim 10**, Sukeda and Mahajan disclose the computerized system of claim 9, wherein the converted set of commands in the first format is included in the received set of messages (Mahajan, paragraph [0022]; paragraphs [0039-0040]; paragraph [0042]).

36. **Per claim 11**, Sukeda discloses the computerized system of claim 8, but does not expressly wherein the computerized system is configured to convert the set of commands from the universal format to the first format based on the piece of content being associated with the first media playing element.

37. Mahajan discloses wherein the set of commands in the universal format is included in the set of messages communicated from the computing device (paragraphs [0039-0040]; paragraph [0042]).

38. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

39. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 11.

40. **Per claim 13,** Sukeda discloses the computerized system of claim 8, but does not expressly disclose wherein the converted set of commands includes programming code associated with the first media playing element.

41. Mahajan discloses wherein the converted set of commands includes programming code associated with the first media playing element (e.g., generic media operations 310A-310I as shown in Fig. 3) associated with the first media playing element (paragraph [0036]).

42. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

43. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 13.

44. **Per claim 14**, Sukeda discloses the computerized system of claim 8, but does not expressly disclose wherein the set of commands converted to the first format is recognizable to the first media playing element.

45. Mahajan discloses wherein the set of commands converted to the first format is recognizable to the first media playing element (paragraph [0013]; paragraph [0022], " *... For example, in the present example the collaboration media abstraction layer 130 can abstract or genericize the media playback commands specific to media platform 122. The genericized media playback commands can then be translated into media playback commands specific to the client's media platform 126.*").

46. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

47. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 14.

48. **Per claim 17**, Sukeda discloses a computer-implemented method for controlling playback of various types of content, comprising:

- providing, by a media receiver, a unique identifier of the media receiver to a computing device in communication with a server system(e.g., step 331 as shown in Fig. 11; paragraph [0052]; paragraph [0066], "*FIG. 11 shows a*

processing procedure for newly registering the operation terminal such as a mobile phone and a mobile terminal. While the QR Code in which the URL for registration including the display terminal ID is encoded is displayed on the display terminal (331), the QR Code is read by use of the operation terminal (mainly, mobile phone) (332) …" ; Examiner's Note: Sukeda discloses providing a terminal ID for a display terminal 302.);

- based on the provided unique identifier, receiving, by the media receiver via the server system, a set of messages from the computing device, the received set of messages referencing a piece of content associated with a first media playing element of a plurality of media playing elements(paragraph [0052], "*… When the QR Code is read using the operation terminal (mainly, mobile phone) (303), and the operation terminal accesses the URL for registration with an identification code of the operation terminal itself being attached (304), the server receives the display terminal ID and the terminal identification code of the operation terminal, and starts registration processing...* "; Examiner's Note: Sukeda discloses a server receiving a message from an operation terminal having the terminal identifier), and;
- selecting, by the media receiver, the first media playing element from the plurality of media playing elements based at least in part on the received message(e.g., step 318 as shown in Fig. 5; paragraph [0053], "*… When the list of the contents is browsed on the operation terminal (317) and an individual content is selected from the list (318), the server updates the latest display contents 112, and*

displays a thumbnail image, detailed contents information, or the like on a screen of the operation terminal (319)… "); and

49. Sukeda does not expressly disclose:

- including a set of commands converted from a universal format defined by the computing device to a first format that corresponds to the first media playing element(paragraphs [0039-0040]; paragraph [0042]), and
- controlling, by the media receiver, how the selected first media playing element plays the referenced piece of content based on at least one command of the converted set of commands included in the received set of messages(paragraphs [0039-0040]).

50. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

51. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 17.

52. **Per claim 18**, Sukeda and Mahajan disclose the method of claim 17, wherein the media receiver is coupled to a display, and the media receiver controls how the selected first media playing element plays the referenced piece of content via the display (Sukeda, paragraph [0015] ; paragraph [0046]; paragraph [0053], "*… On the operation terminal, the thumbnail and a description of the contents are browsed (320), and the playback status and the volume are adjusted when necessary (321). When the operation terminal sends a command to change the playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322) ...* "; paragraph [0059], "*… When operation of changing playback status and adjustment of the volume are performed on this screen, a command is sent to the server so that contents playback in the display terminal is controlled.* "; paragraph [0060]).

53. **Per claim 19**, Sukeda and Mahajan disclose the method of claim 17, wherein the server system is configured to convert the set of commands from the universal format to the first format based on the piece of content being associated with the first media playing element (Mahajan, paragraph [0022]; paragraphs [0039-0040]; paragraph [0042]).

54. **Per claim 20**, Sukeda and Mahajan disclose the method of claim 17, wherein the set of commands in the universal format is included in the set of messages communicated from the computing device to the server system (Sukeda, Abstract; paragraphs [0010-0011]; paragraphs [0013-0014]; paragraph [0046]).

Conclusion

55. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRIN HOPE whose telephone number is (571)270-5079. The examiner can normally be reached on Mon-Thr - 7-4:30, Fri - 7-3:30, Alt. Fri Off.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu D Vu can be reached on (571)272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DARRIN HOPE
Examiner
Art Unit 2173

/TADESSE HAILU/
Primary Examiner, Art Unit 2173

First Action Interview Pilot Program Pre-Interview Communication	**Application No.** 16/917,095	**Applicant(s)** Strober, David	
	Examiner DARRIN HOPE	**Art Unit** 2173	**AIA (FITF) Status** Yes

-The MAILING OR NOTIFICATION DATE of this communication appears on the cover sheet with the correspondence address -

THE SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **ONE MONTH OR THIRTY (30) DAYS,** WHICHEVER IS LONGER, FROM THE MAILING OR NOTIFICATION DATE OF THIS COMMUNICATION.

This time period for reply is extendable under 37 CFR 1.136(a) for only ONE additional MONTH.

This communication constitutes notice under 37 CFR 1.136(a)(1)(i).

Applicant must, within the time period for reply, file: (1) A letter requesting not to have a first action interview; (2) A reply under 37 CFR 1.111 waiving the first action interview and First Action Interview Office Action; or (3) An Applicant Initiated Interview Request Form (PTOL-413A) electronically via EFS-Web, accompanied by a proposed amendment or arguments, and schedule the interview within 2 months from the filing of the request. A failure to respond to this communication will be treated as a request not to have an interview. If applicant waives the First Action Interview Office Action, the instant Pre-Interview Communication is deemed the first Office Action on the Merits. The next subsequent Office action may be made final if appropriate. See MPEP 706.07(a).

Status

1) ☑ Responsive to communication(s) filed on 06/30/2020 .

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____ .

Disposition of Claims

2) ☑ Claim(s) 1-20 is/are pending in the application.

2a) Of the above claim(s) _____ is/are withdrawn from consideration.

3) ☐ Claim(s) _____ is/are allowed.

4) ☑ Claim(s) 1-20 is/are rejected.

5) ☐ Claim(s) _____ is/are objected to.

6) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

7) ☐ The specification is objected to by the Examiner.

8) ☑ The drawing(s) filed on 06/30/2020 is/are: a) ☑ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

9) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

Contact Information

Examiner's Telephone Number: (571)270-5079

Examiner's Typical Work Schedule: Mon-Thr - 7-4:30, Fri - 7-3:30

Supervisor's Name: Kieu D Vu

Supervisor's Telephone Number: (571)272-4057

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ .

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____ .

First Action Interview Pilot Program Pre-Interview Communication	**Application No.** 16/917,095	**Applicant(s)** Strober, David	
	Examiner DARRIN HOPE	**Art Unit** 2173	**AIA (FITF) Status** Yes

Notification of Rejection(s) and/or Objection(s)

#	Claim(s)	Reference(s) (if applicable)	Rejection Statutory Basis	Brief Explanation of Rejection
1	1,5,8,12 and 15-16	Sukeda et al	35 U.S.C. 102(a)(2)	See attached Office Action
2	1-4,6-7,9-11 and 13-14	Sukeda et al./ Mahajan	35 U.S.C. 103	See attached Office Action

Expanded Discussion/Commentary

DATE: 25 August 2020	/DARRIN HOPE/ Examiner, Art Unit 2173	/TADESSE HAILU/ Primary Examiner, Art Unit 2173

Notice of References Cited	Application/Control No. 16/917,095	Applicant(s)/Patent Under Reexamination Strober, David	
	Examiner DARRIN HOPE	Art Unit 2173	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20090172780-A1	07-2009	Sukeda; Hiroko	H04N21/4227	726/3
*	B	US-20090248802-A1	10-2009	Mahajan; Rajneesh	H04L65/4015	709/204
	C					
	D					
	E					
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	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	08/25/2017	David Strober	41197.278581	4059

149550 7590 02/02/2021

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
INTELLECTUAL PROPERTY DEPARTMENT
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

EXAMINER	
HOPE, DARRIN	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
02/02/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipshookdocketing@shb.com
shbdocketing@shb.com

Office Action Summary	Application No. 15/687,249	Applicant(s) Strober, David	
	Examiner DARRIN HOPE	Art Unit 2173	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 3 September 2020.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1,12 and 17 is/are rejected.

8) ☑ Claim(s) 2-11,13-16 and 18-20 is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 09/03/2020, 11/30/2020.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions. This Office Action is responsive to the communications filed on 3 September 2020. Claims 1-20 are pending.

2. The indicated allowability of claims is withdrawn in view of copending Application No. 16/917,095. Rejections based on the newly cited reference(s) follow.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a

result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP § 2146 *et seq.* for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

4. Claims 1, 12 and 17 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1, 8 and 17 of copending Application No. 16/917,095(reference application). Although the claims at issue are not identical, they are not patentably distinct from each other because differences are not sufficient to render the claims patentably distinct, and therefore, claims 1, 12 and 17 are obvious variation of claims 1, 8 and 17 of the copending Application No. 16/917,095.

Instant Application No. 15/687,249	Copending Application No. 16/917,095.
1. A non-transitory computer storage medium storing computer-useable instructions that, when used by a first computing device,	1. A non-transitory computer storage medium storing computer-useable instructions that, when used by a computing device, cause the computing device to perform operations comprising:

cause the first computing device to perform operations comprising: obtaining a synchronization code associated with the first computing device, wherein the associated synchronization code is stored on a remote server device; providing the synchronization code to a second computing device in communication with the remote server device, wherein the provided synchronization code causes the remote server device to store an association between the first computing device and the second computing device;	providing a unique identifier of the computing device to another computing device;
receiving, from the remote server device, a first message that includes at least one command in a first format, the first message being received based at least in part on the stored association and on a second message including at least one command in a second format having been sent from the associated second computing device;	receiving a set of messages from the other computing device based on the provided unique identifier, the received set of messages referencing a piece of content associated with a first media playing element of a plurality of media playing elements, and including a set of commands that corresponds to the first media playing element;
selecting a first media player application from a plurality of media player applications based at least in part on the first format of the first message, the first media player application being selected to play a first piece of content referenced in the received first message; and	selecting the first media playing element from the plurality of media playing elements based at least in part on the received message; and
controlling how the selected first media player application plays the referenced first piece of content based on a first command of the at least one command in the first format having been included in the received first message.	controlling how the selected first media playing element plays the referenced piece of content based on at least one command of the set of commands included in the received set of messages.

12. A computer-implemented method for remotely presenting various types of content, comprising:	17. A computer-implemented method for controlling playback of various types of content, comprising:
obtaining, by a content presentation device, a synchronization code associated with the content presentation device, wherein the associated synchronization code is stored on a remote server device:	providing, by a media receiver, a unique identifier of the media receiver to a computing device in communication with a server system;
providing, by the content presentation device, the synchronization code to a remote computing device in communication with the remote server device, wherein the provided synchronization code causes the remote server device to store an association between the content presentation device and the remote computing device;	
receiving, by the content presentation device and from the remote server device, a first message that includes at least one command in a first format, the first message being received based at least in part on the stored association and on a second message including at least one command in a second format having been sent from the associated remote computing device;	based on the provided unique identifier, receiving, by the media receiver via the server system, a set of messages from the computing device, the received set of messages referencing a piece of content associated with a first media playing element of a plurality of media playing elements, and including a set of commands converted from a universal format defined by the computing device to a first format that corresponds to the first media playing element;
selecting, by the content presentation device while a connection between the content presentation device and the remote server device is maintained, a first media player application from a plurality of media player applications based at least in part on the first format of the first message, the first media player application being selected to play a first piece of content referenced in the received first message; and	selecting, by the media receiver, the first media playing element from the plurality of media playing elements based at least in part on the received message; and

controlling, by the content presentation device, how the selected first media player application plays the referenced first piece of content based on a first command of the at least one command in the first format having been included in the received first message .	controlling, by the media receiver, how the selected first media playing element plays the referenced piece of content based on at least one command of the converted set of commands included in the received set of messages.
17. A content presentation device comprising: a display;	8. A computerized system comprising:
at least one processor; and	a server; and
at least one computer storage media storing computer-usable instructions that, when used by the at least one processor, cause the at least one processor to:	
obtain a synchronization code associated with the content presentation device, wherein the associated synchronization code is stored on a remote server device;	a media receiver to provide a unique identifier of the media receiver to a computing device, wherein each of the computing device and the media receiver are in communication with the server; based on the provided unique identifier,
provide the synchronization code to a remote computing device in communication with the remote server device, wherein the provided synchronization code causes the remote server device to store an association between the content presentation device and the remote computing device;	
receive, from the remote server device, a first message that includes at least one command in a first format, the first message being received based on the stored association and on a second message in the second format sent from the associated remote computing device;	receive a set of messages from the computing device, the received set of messages referencing a piece of content associated with a first media playing element of a plurality of media playing elements, and

select a first media player application from a plurality of media player applications based on the first format of the first message, the first media player application being selected to play a first piece of content referenced in the received first message; and control how the selected first media player application plays the referenced first piece of content ~~}~~ based on a first command of the at least one command in the first format having been included in the received first message.	including a set of commands converted from a universal format defined by the computing device to a first format that corresponds to the first media playing element; select the first media playing element from the plurality of media playing elements based at least in part on the received message; and control how the selected first media playing element plays the referenced piece of content based on at least one command of the converted set of commands included in the received set of messages.

5. This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

Allowable Subject Matter

6. Claims 1-20 are allowable upon filing a terminal disclaimer with copending Application No. 16/917,095.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRIN HOPE whose telephone number is (571)270-5079. The examiner can normally be reached on Mon-Thr - 7-4:30, Fri - 7-3:30, Alt. Fri Off.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu D Vu can be reached on (571)272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DARRIN HOPE
Examiner
Art Unit 2173

/TADESSE HAILU/
Primary Examiner, Art Unit 2173

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	Art Unit
	DARRIN HOPE	2173

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant					☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE								
Final	Original	12/26/2018	05/30/2019	01/27/2021						
	1	✓	✓	✓						
	2	✓	✓	O						
	3	✓	✓	O						
	4	✓	✓	O						
	5	✓	✓	O						
	6	✓	✓	O						
	7	✓	✓	O						
	8	✓	✓	O						
	9	✓	✓	O						
	10	✓	✓	O						
	11	✓	✓	O						
	12	✓	✓	✓						
	13	✓	✓	O						
	14	✓	✓	O						
	15	✓	✓	O						
	16	✓	✓	O						
	17	✓	✓	✓						
	18	✓	✓	O						
	19	✓	✓	O						
	20	✓	✓	O						

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	Art Unit
	DARRIN HOPE	2173

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G06F17/30846 G06F9/452 G06F17/30864	12/26/2018	DH

US Classification - Searched*			
Class	Subclass	Date	Examiner
715	716	12/26/2018	DH

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
EAST	12/26/2018	DH
EAST	05/30/2019	DH
EAST	03/25/2020	DH
Inventor/Assignee Search	01/27/2021	DH
EAST	01/27/2021	DH

/DARRIN HOPE/ Examiner, Art Unit 2173	

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	DARRIN HOPE	2173

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
715	716	03/25/2020	DH
G06F17	30846	03/25/2020	DH
G06F9	452	03/25/2020	DH
G06F17	30864	03/25/2020	DH

/DARRIN HOPE/ Examiner, Art Unit 2173	

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	15687249
Filing Date	2017-08-25
First Named Inventor	David Strober
Art Unit	2173
Examiner Name	Darrin Hope
Attorney Docket Number	41197.278581

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	9720887	B2	2017-08-01	Pappu, et al.	
	2	8782528	B2	2014-07-15	Strober	
	3	8356251	B2	2013-01-15	Strober	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

EFS Web 2.1.18

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

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If you wish to add additional Foreign Patent Document citation information please click the Add button [Add]

NON-PATENT LITERATURE DOCUMENTS [Remove]

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		

If you wish to add additional non-patent literature document citation information please click the Add button [Add]

EXAMINER SIGNATURE

Examiner Signature	/DARRIN HOPE/	Date Considered	01/27/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	Attorney Docket Number	41197.278581

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/KEITH J. BAE/	Date (YYYY-MM-DD)	2020-09-03
Name/Print	Keith J. Bae	Registration Number	64633

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Art Unit	2173
Examiner Name	Darrin Hope
Attorney Docket Number	41197.278581

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

	1	Preinterview First Office Action dated September 03, 2020, in U.S. Patent Application no. 16/917,095, 24 pages.	

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Examiner Signature	/DARRIN HOPE/	Date Considered	01/27/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/KEITH J. BAE/	Date (YYYY-MM-DD)	2020-11-30
Name/Print	Keith J. Bae	Registration Number	64633

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	11	((("STROBER") near3 ("David"))).INV.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2021/01/27 15:35
L2	4	((("TOUCHSTREAM") near3 ("TECHNOLOGIES") near3 ("INC"))).AS,AANM.	USPAT	OR	OFF	2021/01/27 15:36
L3	2,719	(G06F17/30846 G06F9/452 G06F17/30864).cpc.	US-PGPUB; USPAT	OR	OFF	2021/01/27 15:37
L4	72,252	(play$3 same control$4 same (content media) same (display TV television))	US-PGPUB; USPAT	OR	OFF	2021/01/27 15:37
L5	5,425	L4 and ((synchronization synch identifier QR) with code)	US-PGPUB; USPAT	OR	OFF	2021/01/27 15:37
L6	40	L3 and L5	US-PGPUB; USPAT	OR	OFF	2021/01/27 15:37
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	1449	02/02/2021	41197.278581
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(Not for submission under 37 CFR 1.99)

Application Number	15687249
Filing Date	2017-08-25
First Named Inventor	David Strober
Art Unit	2173
Examiner Name	Darrin Hope
Attorney Docket Number	41197.278581

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

	1	First Action Interview Office Action dated December 10, 2020 in U.S. Patent Application No. 16/917,095, 25 pages.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Keith J. Bae/	Date (YYYY-MM-DD)	2021-03-08
Name/Print	Keith J. Bae	Registration Number	64,633

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/917,095	06/30/2020	David Strober	41197.280029	6770

149550 7590 12/10/2020

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KANSAS CITY, MO 64108-2613

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HOPE, DARRIN	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
12/10/2020	ELECTRONIC

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Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA. This Office Action is responsive to the communications filed on 28 October 2020. Claims 1-20 are presented for examinations.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

3. Claims 1, 5, 8, 12, 15 and 16 are rejected under 35 U.S.C. 102(a)(2) as being anticipated by Sukeda et al. (Hereinafter, Sukeda, US 2009/0172780 A1).

4. **Per claim 1**, Sukeda discloses a non-transitory computer storage medium storing computer-useable instructions (e.g., data storing part 100 as shown in Fig. 1) that, when used by a computing device, cause the computing device to perform operations comprising:

- providing a unique identifier of the computing device (e.g., a display terminal) to another computing device (e.g., an operation terminal such as a mobile phone and a mobile terminal) (e.g., step 331 as shown in Fig. 11; paragraph [0052]; paragraph [0066], "*FIG. 11 shows a processing procedure for newly registering the operation terminal such as a mobile phone and a mobile terminal. While the QR Code in which the URL for registration including the display terminal ID is*

encoded is displayed on the display terminal (331), the QR Code is read by use of the operation terminal (mainly, mobile phone) (332) …" ; Examiner's Note: Sukeda discloses providing a terminal ID for a display terminal 302.);

- receiving a set of messages from the other computing device based on the provided unique identifier (paragraph [0052], "*…When the QR Code is read using the operation terminal (mainly, mobile phone) (303), and the operation terminal accesses the URL for registration with an identification code of the operation terminal itself being attached (304), the server receives the display terminal ID and the terminal identification code of the operation terminal, and starts registration processing...* "; Examiner's Note: Sukeda discloses a server receiving a message from an operation terminal having the terminal identifier.), the received set of messages referencing a piece of content associated with a first media playing element of a plurality of media playing elements (e.g., data 112 as shown in Fig. 3; paragraph [0050], " *The data 112 with respect to the latest display contents/list is data for storing the contents and list to be displayed by each display terminal together with a mode to display. The data 112 includes information, such as a display mode 161 whether to display a single content or a list display, an ID 162 of the display terminal, an ID (or arrangement) 163 of the contents to be displayed, a search condition and keyword 164 inputted from the operation terminal (when needed), and a date and time of update 165. Metadata 170 of each content is referred to from the content ID 163. The metadata 170 includes a reference 175 to a content body 177 and variety of information related to the content …* "), and including a set of commands that corresponds to the first

media playing element (e.g., data 113 as shown in Fig. 3; paragraph [0050], "*…The data 113 includes an ID 181 of the display terminal and information such as a displayed state 182, a volume 183, a date and time of update 184, etc., and defines the playback status and volume of each display terminal.* "; paragraph [0053], " *...When the operation terminal sends a command to change the playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322)…* ");

- selecting the first media playing element from the plurality of media playing elements based at least in part on the received message (e.g., step 318 as shown in Fig. 5; paragraph [0053], "*… When the list of the contents is browsed on the operation terminal (317) and an individual content is selected from the list (318), the server updates the latest display contents 112, and displays a thumbnail image, detailed contents information, or the like on a screen of the operation terminal (319)…* "); and
- controlling how the selected first media playing element plays the referenced piece of content based on at least one command of the set of commands included in the received set of messages (paragraph [0015]; paragraph [0046]; paragraph [0053], "*… On the operation terminal, the thumbnail and a description of the contents are browsed (320), and the playback status and the volume are adjusted when necessary (321). When the operation terminal sends a command to change the playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322) ...* "; paragraph [0059], "*… When operation of changing playback status and*

adjustment of the volume are performed on this screen, a command is sent to the server so that contents playback in the display terminal is controlled. "; paragraph [0060]).

5. **Per claim 5**, Sukeda discloses the medium of claim 1, wherein the unique identifier includes one of an IP address, a MAC address, a web cookie, a browser cookie, a QR code (paragraph [0052]), a RFID code, a text, or a synchronization code. Sukeda disclose scanning a QR code identifying a URL address to a server. A unique display terminal ID is provided to a server.

6. **Per claim 8**, Sukeda discloses a computerized system comprising:

- a server (e.g., server 001 as shown in Fig. 1; paragraph [0011]; paragraph [0046]); and
- a media receiver (e.g., display terminal as shown in Fig. 1) to
- provide a unique identifier of the computing device (e.g., a display terminal) to another computing device (e.g., an operation terminal such as a mobile phone and a mobile terminal) (e.g., step 331 as shown in Fig. 11; paragraph [0052]; paragraph [0066], "*FIG. 11 shows a processing procedure for newly registering the operation terminal such as a mobile phone and a mobile terminal. While the QR Code in which the URL for registration including the display terminal ID is encoded is displayed on the display terminal (331), the QR Code is read by use of the operation terminal (mainly, mobile phone) (332) …*" ; Examiner's Note: Sukeda discloses providing a terminal ID for a display terminal 302.);
- receive a set of messages from the other computing device based on the provided unique identifier (paragraph [0052], "*… When the QR Code is read using*

the operation terminal (mainly, mobile phone) (303), and the operation terminal accesses the URL for registration with an identification code of the operation terminal itself being attached (304), the server receives the display terminal ID and the terminal identification code of the operation terminal, and starts registration processing... "; Examiner's Note: Sukeda discloses a server receiving a message from an operation terminal having the terminal identifier.), the received set of messages referencing a piece of content associated with a first media playing element of a plurality of media playing elements (e.g., data 112 as shown in Fig. 3; paragraph [0050], " *The data 112 with respect to the latest display contents/list is data for storing the contents and list to be displayed by each display terminal together with a mode to display. The data 112 includes information, such as a display mode 161 whether to display a single content or a list display, an ID 162 of the display terminal, an ID (or arrangement) 163 of the contents to be displayed, a search condition and keyword 164 inputted from the operation terminal (when needed), and a date and time of update 165. Metadata 170 of each content is referred to from the content ID 163. The metadata 170 includes a reference 175 to a content body 177 and variety of information related to the content ...* "), and including a set of commands that corresponds to the first media playing element (e.g., data 113 as shown in Fig. 3; paragraph [0050], "*...The data 113 includes an ID 181 of the display terminal and information such as a displayed state 182, a volume 183, a date and time of update 184, etc., and defines the playback status and volume of each display terminal.* "; paragraph [0053], " *...When the operation terminal sends a command to change the*

playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322)… ");

- select the first media playing element from the plurality of media playing elements based at least in part on the received message(e.g., step 318 as shown in Fig. 5; paragraph [0053], "*… When the list of the contents is browsed on the operation terminal (317) and an individual content is selected from the list (318), the server updates the latest display contents 112, and displays a thumbnail image, detailed contents information, or the like on a screen of the operation terminal (319)…* "); and
- control how the selected first media playing element plays the referenced piece of content based on at least one command of the set of commands included in the received set of messages (paragraph [0015]; paragraph [0046]; paragraph [0053], "*… On the operation terminal, the thumbnail and a description of the contents are browsed (320), and the playback status and the volume are adjusted when necessary (321). When the operation terminal sends a command to change the playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322) ...* "; paragraph [0059], "*… When operation of changing playback status and adjustment of the volume are performed on this screen, a command is sent to the server so that contents playback in the display terminal is controlled.* "; paragraph [0060]).

7. **Per claim 12**, Sukeda discloses the computerized system of claim 8, wherein the unique identifier includes one of an IP address, a MAC address, a web cookie, a

browser cookie, a QR code (paragraph [0052]), a RFID code, a text, or a synchronization code. Sukeda disclose scanning a QR code identifying a URL address to a server. A unique display terminal ID is provided to a server.

8. **Per claim 15**, Sukeda discloses the computerized system of claim 8, wherein each media playing element of the plurality of media playing elements is operable to play and/or control a corresponding type of media (paragraph [0015] ; paragraph [0046]; paragraph [0053], "... *On the operation terminal, the thumbnail and a description of the contents are browsed (320), and the playback status and the volume are adjusted when necessary (321). When the operation terminal sends a command to change the playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322) ...* "; paragraph [0059], "... *When operation of changing playback status and adjustment of the volume are performed on this screen, a command is sent to the server so that contents playback in the display terminal is controlled.* "; paragraph [0060]).

9. **Per claim 16**, Sukeda discloses the computerized system of claim 8, wherein the set of messages is received from the computing device based further on each of the computing device and the media receiver being in communication with the server (Abstract; paragraphs [0010-0011]; paragraphs [0013-0014]; paragraph [0046]).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having

> ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

11.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 2-4, 6, 7, 9-11, 13, 14 and 17-20 are rejected under 35 U.S.C. 103 as being unpatentable over Sukeda et al. (Hereinafter, Sukeda, US 2009/0172780 A1) in view of Mahajan et al. (Hereinafter, Mahajan, US 2009/0248802 A1).

14. **Per claim 2,** Sukeda discloses the medium of claim 1, but does not expressly disclose wherein the set of commands included in the received set of messages is recognizable by the first media playing element.

15. Mahajan discloses wherein the set of commands included in the received set of messages is recognizable by the first media playing element (paragraph [0013]; paragraph [0022], " *... For example, in the present example the collaboration media abstraction layer 130 can abstract or genericize the media playback commands specific to media platform 122. The genericized media playback commands can then be translated into media playback commands specific to the client's media platform 126.* ").

16. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

17. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 2.

18. **Per claim 3**, Sukeda and Mahajan disclose the medium of claim 2, wherein the set of commands is converted via an API adapter (Mahajan, e.g., RTS abstraction module 210 as shown in Fig. 2) to be recognizable by the first media playing element, the set of commands being converted based on a determination that the first media playing element is associated with the referenced piece of content (Mahajan, paragraphs [0013-0014]; paragraph [0022]; paragraph [0036]; paragraph [0041-0042]).

19. **Per claim 4,** Sukeda discloses the medium of claim 1, but does not expressly disclose wherein the set of commands is defined in a universal format and converted to a particular format recognizable by the first media playing element.

20. Mahajan discloses wherein the set of commands is defined in a universal format and converted to a particular format recognizable by the first media playing element

(paragraph [0013]; paragraph [0022], " *… For example, in the present example the collaboration media abstraction layer 130 can abstract or genericize the media playback commands specific to media platform 122. The genericized media playback commands can then be translated into media playback commands specific to the client's media platform 126.* ").

21. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

22. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 4.

23. **Per claim 6**, Sukeda discloses the medium of claim 1, but does not expressly disclose wherein the received set of commands includes programming code associated with the first media playing element.

24. Mahajan discloses wherein the received set of commands includes programming code (e.g., generic media operations 310A-310I as shown in Fig. 3) associated with the first media playing element (paragraph [0036]).

25. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

26. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 6.

27. **Per claim 7**, Sukeda discloses the medium of claim 1, but does not expressly disclose wherein each media playing element of the plurality of media playing elements is operable to play and/or control a corresponding type of media.

28. Mahajan discloses wherein each media playing element of the plurality of media playing elements is operable to play and/or control a corresponding type of media (paragraphs [0039-0040]).

29. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the

user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

30. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 7.

31. **Per claim 9**, Sukeda discloses the computerized system of claim 8, but does not expressly disclose wherein the set of commands in the universal format is included in the set of messages communicated from the computing device.

32. Mahajan discloses wherein the set of commands in the universal format is included in the set of messages communicated from the computing device (paragraphs [0039-0040]; paragraph [0042]).

33. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

34. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 9.

35. **Per claim 10**, Sukeda and Mahajan disclose the computerized system of claim 9, wherein the converted set of commands in the first format is included in the received set of messages (Mahajan, paragraph [0022]; paragraphs [0039-0040]; paragraph [0042]).

36. **Per claim 11**, Sukeda discloses the computerized system of claim 8, but does not expressly wherein the computerized system is configured to convert the set of commands from the universal format to the first format based on the piece of content being associated with the first media playing element.

37. Mahajan discloses wherein the set of commands in the universal format is included in the set of messages communicated from the computing device (paragraphs [0039-0040]; paragraph [0042]).

38. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

39. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 11.

40. **Per claim 13,** Sukeda discloses the computerized system of claim 8, but does not expressly disclose wherein the converted set of commands includes programming code associated with the first media playing element.

41. Mahajan discloses wherein the converted set of commands includes programming code associated with the first media playing element (e.g., generic media operations 310A-310I as shown in Fig. 3) associated with the first media playing element (paragraph [0036]).

42. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

43. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 13.

44. **Per claim 14**, Sukeda discloses the computerized system of claim 8, but does not expressly disclose wherein the set of commands converted to the first format is recognizable to the first media playing element.

45. Mahajan discloses wherein the set of commands converted to the first format is recognizable to the first media playing element (paragraph [0013]; paragraph [0022], " *... For example, in the present example the collaboration media abstraction layer 130 can abstract or genericize the media playback commands specific to media platform 122. The genericized media playback commands can then be translated into media playback commands specific to the client's media platform 126.* ").

46. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

47. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 14.

48. **Per claim 17**, Sukeda discloses a computer-implemented method for controlling playback of various types of content, comprising:

- providing, by a media receiver, a unique identifier of the media receiver to a computing device in communication with a server system (e.g., step 331 as shown in Fig. 11; paragraph [0052]; paragraph [0066], "*FIG. 11 shows a processing procedure for newly registering the operation terminal such as a mobile phone and a mobile terminal. While the QR Code in which the URL for registration including the display terminal ID is encoded is displayed on the display terminal (331), the QR Code is read by use of the operation terminal (mainly, mobile phone) (332) …*" ; Examiner's Note: Sukeda discloses providing a terminal ID for a display terminal 302.);
- based on the provided unique identifier, receiving, by the media receiver via the server system, a set of messages from the computing device, the received set of messages referencing a piece of content associated with a first media playing element of a plurality of media playing elements(paragraph [0052], "*… When the QR Code is read using the operation terminal (mainly, mobile phone) (303), and the operation terminal accesses the URL for registration with an identification code of the operation terminal itself being attached (304), the server receives the display terminal ID and the terminal identification code of the operation terminal, and starts registration processing...* "; Examiner's Note: Sukeda discloses a server receiving a message from an operation terminal having the terminal identifier), and;
- selecting, by the media receiver, the first media playing element from the plurality of media playing elements based at least in part on the received message(e.g., step 318 as shown in Fig. 5; paragraph [0053], "*… When the list of the contents*

is browsed on the operation terminal (317) and an individual content is selected from the list (318), the server updates the latest display contents 112, and displays a thumbnail image, detailed contents information, or the like on a screen of the operation terminal (319)… "); and

49. Sukeda does not expressly disclose:

- including a set of commands converted from a universal format defined by the computing device to a first format that corresponds to the first media playing element(paragraphs [0039-0040]; paragraph [0042]), and
- controlling, by the media receiver, how the selected first media playing element plays the referenced piece of content based on at least one command of the converted set of commands included in the received set of messages (paragraphs [0039-0040]).

50. At the filing date of the invention, it would have been obvious to a person of ordinary skill in the art to use the Mahajan systems and methods for managing multimedia operations in remote sessions in Sukeda's content display device to improve the device with reasonable expectation that this would result in a content display device that could "facilitate effective communication between the server and client such that the user's media playback commands are executable on the client independent of platforms employed on the server and client" as suggested by Mahajan (paragraph [0014]). This method for improving the scroll bar control device of Sukeda was within the ordinary ability of one of ordinary skill in the art based on the teachings of Mahajan.

51. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Sukeda and Mahajan to obtain the invention as specified in claim 17.

52. **Per claim 18**, Sukeda and Mahajan disclose the method of claim 17, wherein the media receiver is coupled to a display, and the media receiver controls how the selected first media playing element plays the referenced piece of content via the display (Sukeda, paragraph [0015]; paragraph [0046]; paragraph [0053], "… *On the operation terminal, the thumbnail and a description of the contents are browsed (320), and the playback status and the volume are adjusted when necessary (321). When the operation terminal sends a command to change the playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322) ...* "; paragraph [0059], "… *When operation of changing playback status and adjustment of the volume are performed on this screen, a command is sent to the server so that contents playback in the display terminal is controlled.* "; paragraph [0060]).

53. **Per claim 19**, Sukeda and Mahajan disclose the method of claim 17, wherein the server system is configured to convert the set of commands from the universal format to the first format based on the piece of content being associated with the first media playing element (Mahajan, paragraph [0022]; paragraphs [0039-0040]; paragraph [0042]).

54. **Per claim 20**, Sukeda and Mahajan disclose the method of claim 17, wherein the set of commands in the universal format is included in the set of messages

communicated from the computing device to the server system (Sukeda, Abstract; paragraphs [0010-0011]; paragraphs [0013-0014]; paragraph [0046]).

Response to Arguments

55. Applicant's arguments filed 28 October 2020 have been fully considered but they are not persuasive.

Rejections based on 35 U.S.C. § 102

56. On page 1 of Applicant's remarks, Applicant argues that "the Office changes its interpretation of "first media playing element" in relation to the last claimed feature of claim 1" as "an individual content [] selected from the list," as described in Sukeda since the Office now interprets "referenced piece of content" with its plain meaning, while inconsistently interpreting "first media playing element" as "the operation terminal."

57. The Examiner disagrees since Sukeda discloses "controlling how the selected first media playing element plays the referenced piece of content..." (Sukeda, paragraph [0015]; paragraph [0046]; paragraph [0053], "... *On the operation terminal, the thumbnail and a description of the contents are browsed (320), and the playback status and the volume are adjusted when necessary (321). When the operation terminal sends a command to change the playback status and the volume, the server updates a value of the data 113 with respect to the playback status and the volume (322) ...* "; paragraph [0059], "... *When operation of changing playback status and adjustment of the volume are performed on this screen, a command is sent to the server so that contents playback in the display terminal is controlled.* "; paragraph [0060]). Thus, Sukeda discloses selecting an element from a list to play and sending commands to change the playback status and the volume of the media.

58. For at least these reasons, Sukeda does describe each and every feature recited in the independent claims.

Rejections based on 35 U.S.C. § 103

59. Applicant argues that "Mahajan fails to cure the deficiencies of Sukeda because Mahajan fails to teach each and every feature recited in the claims."

60. The Examiner disagrees since Sukeda does describe each and every feature recited in the independent claims as discussed above.

61. In summary, the Examiner maintains the rejection of claims 1-20.

Conclusion

62. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRIN HOPE whose telephone number is (571)270-5079. The examiner can normally be reached on Mon-Thr - 7-4:30, Fri - 7-3:30, Alt. Fri Off.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu D Vu can be reached on (571)272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DARRIN HOPE
Examiner
Art Unit 2173

/TADESSE HAILU/
Primary Examiner, Art Unit 2173

First Action Interview Office Action Summary	Application No. 16/917,095	Applicant(s) Strober, David	
	Examiner DARRIN HOPE	Art Unit 2173	AIA (FITF) Status Yes

The MAILING OR NOTIFICATION DATE of this communication appears on the cover sheet with the correspondence address.

THE SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **TWO MONTHS** FROM THE MAILING OR NOTIFICATION DATE OF THIS COMMUNICATION.

This time period for reply is extendable under 37 CFR 1.136(a) for only TWO additional MONTHS.

☐ Applicant's request to not have a first-action interview is acknowledged (or the time period for reply set forth in the Pre-Interview Communication has expired and the Office did not receive any reply).

Status

1) ☑ Responsive to communication(s) filed on 06/30/2020 and interview conducted on 12 November 2020.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____ .

2) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

3) ☑ Claim(s) 1-20 is/are pending in the application.

3a) Of the above claim(s) _____ is/are withdrawn from consideration.

4) ☐ Claim(s) _____ is/are allowed.

5) ☑ Claim(s) 1-20 is/are rejected.

6) ☐ Claim(s) _____ is/are objected to.

7) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

8) ☐ The specification is objected to by the Examiner.

9) ☑ The drawing(s) filed on 06/30/2020 is/are: a) ☑ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

10) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

Contact Information

Examiner's Telephone Number: (571)270-5079

Examiner's Typical Work Schedule: Mon-Thr - 7-4:30, Fri - 7-3:30

Supervisor's Name: Kieu D Vu

Supervisor's Telephone Number: (571)272-4057

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 09/03/2020,09/29/2020.

3) ☑ Interview Summary (PTO-413) Paper No(s)/Mail Date. 20201112 .

4) ☐ Other: _____ .

First Action Interview Office Action Summary	Application No. 16/917,095	Applicant(s) Strober, David	
	Examiner DARRIN HOPE	Art Unit 2173	AIA (FITF) Status Yes

Notification of Rejection(s) and/or Objection(s)

#	Claim(s)	Reference(s) (if applicable)	Rejection Statutory Basis	Brief Explanation of Rejection
1	1,5,8,12 and 15-16	Sukeda et al	35 U.S.C. 102(a)(2)	See attached Office Action
2	1-4,6-7,9-11 and 13-14	Sukeda et al./ Mahajan	35 U.S.C. 103	See attached Office Action

Expanded Discussion/Commentary

DATE: 25 August 2020	/DARRIN HOPE/ Examiner, Art Unit 2173	/TADESSE HAILU/ Primary Examiner, Art Unit 2173

Notice of References Cited	Application/Control No. 16/917,095	Applicant(s)/Patent Under Reexamination Strober, David	
	Examiner DARRIN HOPE	Art Unit 2173	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20090172780-A1	07-2009	Sukeda; Hiroko	H04N21/4227	726/3
*	B	US-20090248802-A1	10-2009	Mahajan; Rajneesh	H04L65/4015	709/204
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Electronic Patent Application Fee Transmittal

Application Number:	15687249
Filing Date:	25-Aug-2017
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Filer:	Keith Joshua Bae/Elizabeth Iverson
Attorney Docket Number:	41197.278581

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	1806	1	260	260
		Total in USD ($)		**260**

Electronic Acknowledgement Receipt	
EFS ID:	42118650
Application Number:	15687249
International Application Number:	
Confirmation Number:	4059
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Customer Number:	149550
Filer:	Keith Joshua Bae/Elizabeth Iverson
Filer Authorized By:	Keith Joshua Bae
Attorney Docket Number:	41197.278581
Receipt Date:	08-MAR-2021
Filing Date:	25-AUG-2017
Time Stamp:	17:20:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$260
RAM confirmation Number	E202138H21132142
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDSForm_41197_278581.pdf	1007100 7484ad8814c5d4aac4781ffb3d3a81c9649934a3	no	4
Warnings:					
Information:					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
2	Non Patent Literature	NPL1_41197_278581.pdf	5068396 2a85a6de40b2c9b10d2e5a78f787202eb3e2e67e	no	25
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30550 e3973a2d99100be63549ceaf2438d1867422115b	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	6106046		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

PATENT WITHDRAWAL NOTICE

DATE WITHDRAWN	WITHDRAWAL NUMBER
03/29/2021	59228

The following application has been **WITHDRAWN** from the 08/11/2020 issue.

SERIAL NO.	PATENT NUMBER
15/687,249	10740393

TITLE

PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

NAME AND ADDRESS

David Strober
Rye, NY

REASON FOR WITHDRAWAL

Auto-petition to withdraw - Granted

APPROVED

/Kimberly House/ , Manager
Patent Publication Branch
Office of Data Management

FORM PTO-302 -- (REV. 05-2009)

Electronic Acknowledgement Receipt	
EFS ID:	42337896
Application Number:	15687249
International Application Number:	
Confirmation Number:	4059
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Customer Number:	149550
Filer:	Keith Joshua Bae/Elizabeth Iverson
Filer Authorized By:	Keith Joshua Bae
Attorney Docket Number:	41197.278581
Receipt Date:	31-MAR-2021
Filing Date:	25-AUG-2017
Time Stamp:	18:06:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	Response_to_NFOA.pdf	47304 470ccf382a7bc687d2ad88418fc4d7059a20c7c6	no	10

Warnings:

Information:	
Total Files Size (in bytes):	47304

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed	PTO/SB/25 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**TERMINAL DISCLAIMER TO OBVIATE A PROVISIONAL DOUBLE PATENTING REJECTION OVER A PENDING "REFERENCE" APPLICATION**
Application Number	15687249
Filing Date	25-Aug-2017
First Named Inventor	David Strober
Attorney Docket Number	41197.278581
Title of Invention	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
Touchstream Technologies, Inc.	100%

The owner(s) of percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on pending reference Application Number(s)

16917095 filed on 06/30/2020

as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the reference application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term of any patent granted on said reference application, "as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application," in the event that any such patent granted on the pending reference application: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.

◉ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

○ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.
Applicant claims the following fee status: ◉ Small Entity ○ Micro Entity ○ Regular Undiscounted I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES I certify, in accordance with 37 CFR 1.4(d)(4) that I am: ◉ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application Registration Number 64633 ○ A sole inventor ○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application ○ A joint inventor; all of whom are signing this request

Signature	/Keith J. Bae/
Name	Keith J. Bae

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	15687249
Filing Date:	25-Aug-2017
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Filer:	Keith Joshua Bae/Elizabeth Iverson
Attorney Docket Number:	41197.278581

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	2814	1	170	170
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**170**

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 15687249

Filing Date: 25-Aug-2017

Applicant/Patent under Reexamination: Strober

Electronic Terminal Disclaimer filed on March 31, 2021

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt	
EFS ID:	42337766
Application Number:	15687249
International Application Number:	
Confirmation Number:	4059
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Customer Number:	149550
Filer:	Keith Joshua Bae/Elizabeth Iverson
Filer Authorized By:	Keith Joshua Bae
Attorney Docket Number:	41197.278581
Receipt Date:	31-MAR-2021
Filing Date:	25-AUG-2017
Time Stamp:	18:03:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$170
RAM confirmation Number	E20213UI03444799
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	34004 5996efa61fc4d9226cae99d44e86db9da49e0efb	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30507 224e2bc0e567fe84c2b58c90ec4e5cd07949d355	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	64511		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	15/687,249	Confirmation No. 4059
First Inventor	:	David Strober	
Applicant	:	Touchstream Technologies Inc.	
Filed	:	08/25/2017	
Title	:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE	
Group Art Unit	:	2173	
Examiner	:	Darrin Hope	
Atty Docket No.	:	41197.278581	
Customer No.	:	149550	

VIA EFS-WEB – March 31, 2021

Mail Stop Amendment
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

RESPONSE

In response to the Office Action mailed February 2, 2021, please amend the above-identified application as follows:

Amendments to the Claims: begin on page 2 of this paper.

Remarks: begin on page 9 of this paper.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A non-transitory computer storage medium storing computer-useable instructions that, when used by a first computing device, cause the first computing device to perform operations comprising:

obtaining a synchronization code associated with the first computing device, wherein the associated synchronization code is stored on a remote server device;

providing the synchronization code to a second computing device in communication with the remote server device, wherein the provided synchronization code causes the remote server device to store an association between the first computing device and the second computing device;

receiving, from the remote server device, a first message that includes at least one command in a first format, the first message being received based at least in part on the stored association and on a second message including at least one command in a second format having been sent from the associated second computing device;

selecting a first media player application from a plurality of media player applications based at least in part on the first format of the first message, the first media player application being selected to play a first piece of content referenced in the received first message; and

controlling how the selected first media player application plays the referenced first piece of content based on a first command of the at least one command in the first format having been included in the received first message.

2. (Previously Presented) The non-transitory computer storage medium of claim 1, wherein each command of the at least one command in the second format is a universal command.

3. (Original) The non-transitory computer storage medium of claim 2, wherein the first format is different than the second format.

4. (Previously Presented) The non-transitory computer storage medium of claim 1, wherein the second message is sent from the associated second computing device to the remote server device.

5. (Previously Presented) The non-transitory computer storage medium of claim 1, wherein the remote server device is configured to convert the at least one command in the second format into the at least one command in the first format based at least in part on the second message including therein a reference to the first piece of content.

6. (Previously Presented) The non-transitory computer storage medium of claim 1, wherein the remote server device is configured to convert the at least one command in the second format into the at least one command in the first format based at least in part on a reference to the first media player application having been included in the second message.

7. (Previously Presented) The non-transitory computer storage medium of claim 1, wherein the first media player application is selected based at least in part on the received first message including therein a reference to the first media player application.

8. (Previously Presented) The non-transitory computer storage medium of claim 1, wherein controlling how the selected first media player application plays the referenced first piece of content includes an execution of the first command.

9. (Previously Presented) The non-transitory computer storage medium of claim 1, the operations further comprising:

retrieving the first media player application from a remote content provider based on a determination that the first media player application is not already selected.

10. (Previously Presented) The non-transitory computer storage medium of claim 9, wherein the remote content provider is associated with the referenced first piece of content.

11. (Previously Presented) The non-transitory computer storage medium of claim 1, the operations further comprising:

based on the stored association and while the first media player application is selected, receiving, from the remote server device, a third message that includes at least one command in a third format, wherein the third message is received based at least in part on a fourth message including at least one other command in the second format having been sent from the associated second computing device; and

selecting a second media player application from the plurality of media player applications based at least in part on the third format of the third message, the second media player application being selected to play a second piece of content referenced in the third message.

12. (Previously Presented) A computer-implemented method for remotely presenting various types of content, comprising:

obtaining, by a content presentation device, a synchronization code associated with the content presentation device, wherein the associated synchronization code is stored on a remote server device;

providing, by the content presentation device, the synchronization code to a remote computing device in communication with the remote server device, wherein the provided synchronization code causes the remote server device to store an association between the content presentation device and the remote computing device;

receiving, by the content presentation device and from the remote server device, a first message that includes at least one command in a first format, the first message being received based at least in part on the stored association and on a second message including at least one command in a second format having been sent from the associated remote computing device;

selecting, by the content presentation device while a connection between the content presentation device and the remote server device is maintained, a first media player application from a plurality of media player applications based at least in part on the first format of the first message, the first media player application

being selected to play a first piece of content referenced in the received first message; and

controlling, by the content presentation device, how the selected first media player application plays the referenced first piece of content based on a first command of the at least one command in the first format having been included in the received first message.

13. (Previously Presented) The computer-implemented method of claim 12, wherein the first media player application is selected based further in part on the received first message including therein a reference to the first media player application.

14. (Previously Presented) The computer-implemented method of claim 12, the operations further comprising:

selecting the first media player application based on a determination that a second media player application is currently selected.

15. (Previously Presented) The computer-implemented method of claim 12, further comprising: retrieving, by the content presentation device, the selected first media player application from a remote content provider based on the first format of the first message.

16. (Previously Presented) The computer-implemented method of claim 12, wherein the remote server device is configured to convert the at least one command in the second format into the at least one command in the first format based at least in part on a reference to the first media player application having been included in the second message, and wherein the first media player application is selected based further on the at least one command in the first format having been converted from the second format.

17. (Previously Presented) A content presentation device comprising:

a display;

at least one processor; and

at least one computer storage media storing computer-usable instructions that, when used by the at least one processor, cause the at least one processor to:

obtain a synchronization code associated with the content presentation device, wherein the associated synchronization code is stored on a remote server device;

provide the synchronization code to a remote computing device in communication with the remote server device, wherein the provided synchronization code causes the remote server device to store an association between the content presentation device and the remote computing device;

receive, from the remote server device, a first message that includes at least one command in a first format, the first message being received based on the stored association and on a second message in the second format sent from the associated remote computing device;

select a first media player application from a plurality of media player applications based on the first format of the first message, the first media player application being selected to play a first piece of content referenced in the received first message; and

control how the selected first media player application plays the referenced first piece of content based on a first command of the at least one command in the first format having been included in the received first message.

18. (Previously Presented) The content presentation device of claim 17, wherein the first media player application is configured to recognize each command of the at least one command in the first format.

19. (Previously Presented) The content presentation device of claim 17, wherein the second message is sent from the associated second computing device to the remote server device.

20. (Previously Presented) The content presentation device of claim 18, wherein the first media player application is selected based further on the received first message including therein a reference to the first media player application.

REMARKS

The Non-Final Office Action mailed February 2, 2021 has been received and reviewed. Prior to the present communication, claims 1-20 were pending and claims 1, 12 and 17 stand rejected. No claims have herein been altered. Reconsideration of the subject application is respectfully requested in view of the following remarks.

Allowable Subject Matter

Applicant thanks the Office for indicating that claims 1-20 are allowable upon filing a terminal disclaimer with copending Application No. 16/917,095.

Double Patenting

Claims 1, 12 and 17 were provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1, 8 and 17 of U.S. Application No. 16/917,095. Applicant files herewith an electronic terminal disclaimer and requests withdrawal of the nonstatutory double patenting rejection. Allowance of the claims is respectfully requested.

CONCLUSION

For at least the reasons stated above, the pending claims are believed to be in condition for allowance. Applicant respectfully requests withdrawal of the pending rejections and allowance of the claims. If any issues remain that would prevent issuance of this application, the Examiner is urged to contact the undersigned – 816-474-6550 or kbae@shb.com (such communication via email is herein expressly granted) – to resolve the same. It is believed that all fees due have been paid. However, if this belief is in error, the Commissioner is hereby authorized to charge any amount required to Deposit Account No. 19-2112, with reference to Attorney Docket No. 41197.278581.

Respectfully submitted,

/Keith J. Bae/

Keith J. Bae
Reg. No. 64,633

KJBY/jc
SHOOK, HARDY & BACON L.L.P.
2555 Grand Blvd.
Kansas City, MO 64108-2613
816-474-6550 Telephone
816-421-5547 Fax

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/687,249	Filing Date 08/25/2017	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	03/31/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $240 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/BRENDA V HARRISON/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

149550 7590 05/26/2021
SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
INTELLECTUAL PROPERTY DEPARTMENT
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

EXAMINER
HOPE, DARRIN

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 05/26/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	08/25/2017	David Strober	41197.278581	4059

TITLE OF INVENTION: PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$500.00	$100	08/26/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

149550 7590 05/26/2021
SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
INTELLECTUAL PROPERTY DEPARTMENT
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	08/25/2017	David Strober	41197.278581	4059

TITLE OF INVENTION: PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$500.00	$100	08/26/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
HOPE, DARRIN	2173	715-716000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	08/25/2017	David Strober	41197.278581	4059

149550 7590 05/26/2021

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
INTELLECTUAL PROPERTY DEPARTMENT
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

EXAMINER	
HOPE, DARRIN	
ART UNIT	**PAPER NUMBER**
2173	

DATE MAILED: 05/26/2021

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 15/687,249	Applicant(s) Strober, David	
	Examiner DARRIN HOPE	Art Unit 2173	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to the communications filed on 03/31/2021.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-20 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 03/08/2021.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/DARRIN HOPE/ Examiner, Art Unit 2173	/TADESSE HAILU/ Primary Examiner, Art Unit 2173

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

2. This Office Action is responsive to the communications filed on 31 March 2021.

Allowable Subject Matter

3. Claims 1-20 are allowed.

4. The following is an examiner's statement of reasons for allowance:

The present invention is directed to a computer-implemented method and device for presenting and controlling content on a display device.

The prior arts fails to show individually or in combination the elements recited in independent claim 1.

Specifically, the prior art references fail to show, in part, "**obtaining a synchronization code associated with the first computing device,** wherein the associated synchronization code is stored on a remote server device; **providing the synchronization code to a second computing device in communication with the remote server device, wherein the provided synchronization code causes the remote server device to store an association between the first computing device and the second computing device;** receiving, from the remote server device, a first message that includes at least one command in a first format, the first message being received **based at least in part on the stored association and on a second message including at least one command in a second format having been sent from the associated second computing device; selecting a first media player application from a plurality of media player applications based at least in part on the first format of the first message**, the first media player application being selected

to play a first piece of content referenced in the received first message; and **controlling how the selected first media player application plays the referenced first piece of content** based on a first command of the at least one command in the first format having been included in the received first message" as recited in independent claim 1. At least based on the above distinctions, the Examiner submits that independent claim 1 is patentable over the combination of the cited references. Independent claims 12 and 17 include similar limitations to that of claim 1 and are also patentable over the cited prior art for at least the same reasons described above with respect to claim 1. At least by virtue of their dependency, the Examiner submits that the remaining claims are also patentable over the combination of the cited references.

Accordingly, Claims 1-20 are allowed.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRIN HOPE whose telephone number is (571)270-5079. The examiner can normally be reached on Mon-Thr - 7-4:30, Fri - 7-3:30, Alt. Fri Off.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an

interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu D Vu can be reached on (571)272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DARRIN HOPE
Examiner
Art Unit 2173

/TADESSE HAILU/
Primary Examiner, Art Unit 2173

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	**Art Unit**
	DARRIN HOPE	2173

CPC						
Symbol					**Type**	**Version**
G06F	/	16	/	74	F	2019-01-01
G06F	/	16	/	951	I	2019-01-01
G06F	/	9	/	452	I	2018-02-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

/DARRIN HOPE/ Examiner, Art Unit 2173	21 May 2021	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/TADESSE HAILU/ Primary Examiner, Art Unit 2173	21 May 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office — Part of Paper No.: 20210521

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	**Art Unit**
	DARRIN HOPE	2173

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G06F	/	17	/	30
G06F	/	9	/	44

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
715	716

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

/DARRIN HOPE/ Examiner, Art Unit 2173	21 May 2021	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/TADESSE HAILU/ Primary Examiner, Art Unit 2173	21 May 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office — Part of Paper No.: 20210521

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	**Art Unit**
	DARRIN HOPE	2173

☑ Claims renumbered in the same order as presented by applicant ☐ CPA ☑ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10	19	19										
2	2	11	11	20	20										
3	3	12	12												
4	4	13	13												
5	5	14	14												
6	6	15	15												
7	7	16	16												
8	8	17	17												
9	9	18	18												

/DARRIN HOPE/ Examiner, Art Unit 2173	21 May 2021	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/TADESSE HAILU/ Primary Examiner, Art Unit 2173	21 May 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office — Part of Paper No.: 20210521

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	Art Unit
	DARRIN HOPE	2173

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G06F17/30846 G06F9/452 G06F17/30864	12/26/2018	DH

US Classification - Searched*			
Class	Subclass	Date	Examiner
715	716	12/26/2018	DH

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
EAST	12/26/2018	DH
EAST	05/30/2019	DH
EAST	03/25/2020	DH
Inventor/Assignee Search	01/27/2021	DH
EAST	01/27/2021	DH
EAST	05/21/2021	DH

/DARRIN HOPE/ Examiner, Art Unit 2173	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/687,249	Strober, David
	Examiner	Art Unit
	DARRIN HOPE	2173

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
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G06F17	30846	03/25/2020	DH
G06F9	452	03/25/2020	DH
G06F17	30864	03/25/2020	DH
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G06F17	30846	05/21/2021	DH
G06F9	452	05/21/2021	DH

/DARRIN HOPE/ Examiner, Art Unit 2173	

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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L16	2,856	(G06F17/30846 G06F9/452 G06F17/30864).cpc.	US-PGPUB; USPAT	OR	OFF	2021/05/21 17:26
L17	2,500	L3 L4 L5 L6 L7 L8 L9 L10 L11 L12 L13 L14 L15	US-PGPUB; USPAT	OR	OFF	2021/05/21 17:26

L18	6	L16 and L17	US-PGPUB; USPAT	OR	OFF	2021/05/21 17:26
L19	4	((("TOUCHSTREAM") near3 ("TECHNOLOGIES") near3 ("INC"))).AS,AANM.	USPAT	OR	OFF	2021/05/21 17:28
L20	11	((("Strober") near3 ("David"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/05/21 17:28
L21	569	(receiv$3 receipt) with message with command with (first and second) with server	US-PGPUB; USPAT	OR	OFF	2021/05/21 17:30
L22	907	(receiv$3 receipt) with message with command with (first and second) with server	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/05/21 17:31
L23	32	L16 and L22	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/05/21 17:31
L24	3	L2 and L22	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2021/05/21 17:32

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L25	225,745	((synchronization synch identifier QR) with code)	US-PGPUB; USPAT	OR	OFF	2021/05/21 17:33
L26	74,442	(play$3 same control$4 same (content media) same (display TV television))	US-PGPUB; USPAT	OR	OFF	2021/05/21 17:33
L27	2,856	(G06F17/30846 G06F9/452 G06F17/30864).cpc.	US-PGPUB; USPAT	OR	OFF	2021/05/21 17:33

L28	3,384	(715/716).ccls.	US-PGPUB; USPAT	OR	OFF	2021/05/21 17:33
L29	200	(play$3 same control$4 same (content media) same (display TV television)) same ((synchronization synch identifier QR) with code)	US-PGPUB; USPAT	OR	OFF	2021/05/21 17:33

5/21/2021 5:34:46 PM
C:\Users\dhope\Documents\EAST\Workspaces\15687249.wsp

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	15687249
Filing Date	2017-08-25
First Named Inventor	David Strober
Art Unit	2173
Examiner Name	Darrin Hope
Attorney Docket Number	41197.278581

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

EFS Web 2.1.18

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

	1	First Action Interview Office Action dated December 10, 2020 in U.S. Patent Application No. 16/917,095, 25 pages.	

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/DARRIN HOPE/	Date Considered	05/21/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15687249
	Filing Date	2017-08-25
	First Named Inventor	David Strober
	Art Unit	2173
	Examiner Name	Darrin Hope
	Attorney Docket Number	41197.278581

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Keith J. Bae/	Date (YYYY-MM-DD)	2021-03-08
Name/Print	Keith J. Bae	Registration Number	64,633

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H/

Bibliographic Data

Application No: 15/687,249

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /DARRIN HOPE/ Examiner's Signature | Initials

Title: PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
08/25/2017	715	2173	41197.278581
RULE			

APPLICANTS

Touchstream Technologies, Inc., Valhalla, NY,

INVENTORS

David Strober, Rye, NY, UNITED STATES

CONTINUING DATA

This application is a CON of 13532546 06/25/2012 PAT 9767195

13532546 is a CIP of 13157821 06/10/2011 PAT 8904289

13157821 has PRO of 61477998 04/21/2011

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

08/31/2017

**** SMALL ENTITY ****

STATE OR COUNTRY

UNITED STATES

ADDRESS

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
INTELLECTUAL PROPERTY DEPARTMENT
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613
UNITED STATES

FILING FEE RECEIVED

$730

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	15/687,249	Confirmation No. 4059
First Named Inventor	:	David Strober	
Assignee/Applicant	:	TOUCHSTREAM TECHNOLOGIES, INC.	
Filed	:	2017-08-25	
Title	:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE	
Group Art Unit	:	2173	
Examiner	:	Hope, Darrin	
Docket No.	:	41197.278581	
Customer No.	:	149550	

VIA EFS–Web: May 26, 2021

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

REQUEST TO APPLY PREVIOUSLY PAID ISSUE FEE TO THE NEW NOTICE OF ALLOWANCE

On June 30, 2020, Applicant's representative paid the Issue fee of $500.00 and subsequently filed a Certification and Request for Consideration of an Information Disclosure Statement, Request for Continued Examination, and Petition to Withdraw from Issue After Payment of the Issue Fee under 37 CFR 1.313(c) on September 3, 2020.

Applicant requests to reapply the $500 Issue Fee, paid on June 30, 2020, to the New Notice of Allowance mailed May 26, 2021. Included herewith is the executed Part B Issue Fee Transmittal Form. The Commissioner is authorized to charge the $100 difference in the fee previously paid and the amount now due to Deposit Account No. 19-2112, referencing Attorney Docket No. 41197.278581.

Respectfully submitted,

/Keith J. Bae/

Keith J. Bae
Reg. No. 64,633

KJBY/eqi
SHOOK, HARDY & BACON L.L.P.
2555 Grand Blvd.
Kansas City, Missouri 64108-2613
816-474-6550

8570184

Electronic Acknowledgement Receipt

EFS ID:	42827288
Application Number:	15687249
International Application Number:	
Confirmation Number:	4059
Title of Invention:	PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE
First Named Inventor/Applicant Name:	David Strober
Customer Number:	149550
Filer:	Keith Joshua Bae/Elizabeth Iverson
Filer Authorized By:	Keith Joshua Bae
Attorney Docket Number:	41197.278581
Receipt Date:	26-MAY-2021
Filing Date:	25-AUG-2017
Time Stamp:	16:17:09
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Updated_Issue_Fee.pdf	141305 03a2257655df769412f9f139f97dbd2e4cc80058	no	1
Warnings:					

Information:					
2	Transmittal Letter	Updated_Transmittal_Letter.pdf	17055 8c7531a8b884950df49b83ef03cdff080557bcde	no	1
Warnings:					
Information:					
			Total Files Size (in bytes):	158360	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

149550 7590 05/26/2021
SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
INTELLECTUAL PROPERTY DEPARTMENT
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Keith J. Bae	(Typed or printed name)
/Keith J. Bae/	(Signature)
2021-05-26	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	08/25/2017	David Strober	41197.278581	4059

TITLE OF INVENTION: PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$500.00	$100	08/26/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
HOPE, DARRIN	2173	715-716000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Shook, Hardy & Bacon LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE	(B) RESIDENCE: (CITY and STATE OR COUNTRY)
Touchstream Technologies, Inc.	Valhalla, NY

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies .....

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 19-2112

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Keith J. Bae/ Date 2021-05-26

Typed or printed name Keith J. Bae Registration No. 64,633

To: shbdocketing@shb.com,ipshookdocketing@shb.com,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 149550

May 26, 2021 04:05:40 AM

Dear PAIR Customer:

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
INTELLECTUAL PROPERTY DEPARTMENT
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613
UNITED STATES

The following USPTO patent application(s) associated with your Customer Number, 149550 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

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Application	Document	Mailroom Date	Attorney Docket No.
15687249	NOA	05/26/2021	41197.278581
	1449	05/26/2021	41197.278581

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Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

OPAP
MAY 26 2021

By mail, send to: Mail Stop ISSUE FEE
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Alexandria, Virginia 22313-1450

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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

149550 7590 05/26/2021
SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
INTELLECTUAL PROPERTY DEPARTMENT
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Keith J. Bae	(Typed or printed name)
/Keith J. Bae/	(Signature)
2021-05-26	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	08/25/2017	David Strober	41197.278581	4059

TITLE OF INVENTION: PLAY CONTROL OF CONTENT ON A DISPLAY DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$500.00	$100	08/26/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
HOPE, DARRIN	2173	715-716000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Shook, Hardy & Bacon LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Touchstream Technologies, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Valhalla, NY

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies .....

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

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5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Keith J. Bae/ Date 2021-05-26

Typed or printed name Keith J. Bae Registration No. 64,633

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/687,249	06/29/2021	11048751	41197.278581	4059

149550 7590 06/09/2021

SHOOK, HARDY & BACON LLP
(Touchstream Technologies, Inc.)
INTELLECTUAL PROPERTY DEPARTMENT
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

David Strober, Rye, NY;
Touchstream Technologies, Inc., Valhalla, NY;

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IR103 (Rev. 10/09)

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Jun 10, 2021 04:30:51 AM

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(Touchstream Technologies, Inc.)
INTELLECTUAL PROPERTY DEPARTMENT
2555 GRAND BLVD
KANSAS CITY, MO 64108-2613
UNITED STATES

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Application	Document	Mailroom Date	Attorney Docket No.
15687249	ISSUE.NTF	06/09/2021	41197.278581

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