

Exhibit 1002

Docket No.: 3449-2744PUS3
(Patent)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application of:

Jinyoung CHOI et al.

Application No.: 15/788,510

Confirmation No.: 5210

Filed: October 19, 2017

Art Unit: 2422

For: METHOD OF PROVIDING EXTERNAL
DEVICE LIST AND IMAGE DISPLAY
DEVICE

Examiner: KHALID, OMER

AMENDMENT UNDER 37 C.F.R. § 1.312

MS ISSUE FEE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Pursuant to the provisions of 37 C.F.R. § 1.312, the following amendments and remarks are respectfully submitted in connection with the above-identified application. It is respectfully requested that the following amendments be entered without withdrawing the application from issue.

BIRCH, STEWART, KOLASCH & BIRCH, LLP

DAB/DAB/jsn

Ex. 1002 – TCL Indus Holdings Co., Ltd.
TCL Indus Holdings Co., Ltd. v. LGE – IPR2023-00238

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An image display device comprising:

a display;

a first external interface configured to receive a first image signal input from a first external device connected to the image display device;

a second external interface configured to receive a second image signal input from a second external device connected to the image display device; and

a controller coupled with the display, the first external interface and the second external interface, the controller configured to:

display a plurality of external device icons, on the display, wherein the plurality of external device icons include a first external device icon and a second external device icon, wherein a first default image corresponding to the first external interface is displayed on the first external device icon and a second default image corresponding to the second external interface device is displayed on the second external device icon, and

change the first default image to a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device, and

change the first image to the first default image in response to the second external device icon being selected,

wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed.

2. (Original) The image display device according to claim 1, wherein the controller is further configured to:

highlight the first external device icon in response to the first external device icon being selected, and

highlight the second external device icon in response to the second external device icon being selected.

3. (Original) The image display device according to claim 1, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device icons while the first external device icon is selected.

4. (Original) The image display device according to claim 1, wherein the first and second external device icons are selectable via a cursor positioned on the first and second external device icons, respectively.

5. (Original) The image display device according to claim 4, wherein the cursor is controlled by a remote controller interfacing with the image display device.

6. (Canceled)

7. (Canceled)

8. (Previously Presented) The image display device according to claim 1, wherein the controller is further configured to display a symbol representing that the first external device or the second external device is being connected to the display device on the first external device icon or the second external device icon.

9. (Previously Presented) The image display device according to claim 1, wherein the controller is further configured to:

change the second default image to a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device.

10. (Original) The image display device according to claim 1, wherein the controller is further configured to:

transmit a control command for controlling the first external device to the first external device, and

display an execution result of the control command on the display.

11. (Previously Presented) The image display device according to claim 1, wherein the first default image is an image identifying the first external interface and the second default image is an image identifying the second external interface.

12. (Previously Presented) The image display device according to claim 1, wherein the changed first image is an image which is currently displayed on the first external device.

13. (Previously Presented) The image display device according to claim 1, wherein the controller is further configured to display the first default image although first external device icon is selected if the first external device is not connected to the image display device.

14. (Previously Presented) A method of an image display device, the method comprising:
receiving, by a first external interface, a first image signal input from a first external device connected to the image display device;

receiving, by a second external interface, a second image signal input from a second external device connected to the image display device;

displaying a plurality of external device icons, on a display, wherein the plurality of external device icons include a first external device icon and a second external device icon, wherein a first default image corresponding to the first external interface is displayed on the first external device icon and a second default image corresponding to the second external interface is displayed on the second external device icon;

changing the first default image to a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device; and

changing the first image to the first default image in response to the second external device icon being selected,

wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed.

15. (Previously Presented) The method according to claim 14, further comprising:

highlighting the first external device icon in response to the first external device icon being selected; and

highlighting the second external device icon in response to the second external device icon being selected.

16. (Previously Presented) The method according to claim 14, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device icons while the first external device icon is selected.

17. (Previously Presented) The method according to claim 14, wherein the first and second external device icons are selectable via a cursor positioned on the first and second external device icons, respectively.

18. (Previously Presented) The method according to claim 17, wherein the cursor is controlled by a remote controller interfacing with the image display device.

19. (Previously Presented) The method according to claim 14, further comprising:
displaying a symbol representing that the first external device or the second external device is being connected to the display device on the first external device icon or the second external device icon.

20. (Previously Presented) The method according to claim 14, further comprising:
changing the second default image to a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device,
wherein the second image is displayed at a position corresponding to an area where the second external device icon is displayed.

21. (Previously Presented) The method according to claim 14, further comprising:
transmitting a control command for controlling the first external device to the first external device; and

displaying an execution result of the control command on the display.

22. (Previously Presented) The method according to claim 14, wherein the changed first image is an image which is currently displayed on the first external device.

23. (Previously Presented) The method according to claim 14, further comprising:
displaying the first default image although first external device icon is selected if the first external device is not connected to the image display device.

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-5 and 8-23 are pending in the present application with claim 1 having been amended by the present amendment.

This Amendment further amends claim 1 to clarify the claimed subject matter.

The proposed changes do not add new matter nor do they raise any new issues. Accordingly, entry thereof is requested.

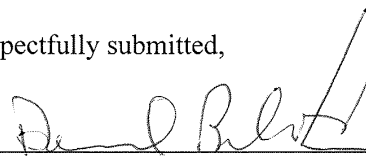
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact David A. Bilodeau, Registration No. 42,325, at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: March 8, 2019

Respectfully submitted,

By



David A. Bilodeau

Registration No.: 42325

BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Road, Suite 100 East

Falls Church, VA 22042

703-205-8072



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

2292 7590 02/06/2019
BIRCH STEWART KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
FALLS CHURCH, VA 22042-1248

EXAMINER

KHALID, OMER

ART UNIT

PAPER NUMBER

2422

DATE MAILED: 02/06/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/788,510	10/19/2017	Jinyoung CHOI	3449-2744PUS3	5210

TITLE OF INVENTION: METHOD OF PROVIDING EXTERNAL DEVICE LIST AND IMAGE DISPLAY DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	05/06/2019

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.

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PTOL-85 (Rev. 02/11)

Ex. 1002 – TCL Indus Holdings Co., Ltd.
TCL Indus Holdings Co., Ltd. v. LGE – IPR2023-00238

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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)

2292 7590 02/06/2019
BIRCH STEWART KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
FALLS CHURCH, VA 22042-1248

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.
15/788,510	10/19/2017	Jinyoung CHOI	3449-2744PUS3	5210

TITLE OF INVENTION: METHOD OF PROVIDING EXTERNAL DEVICE LIST AND IMAGE DISPLAY DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	05/06/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
KHALID, OMER	2422	348-563000

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, 1 _____
- (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. 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

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/788,510	10/19/2017	Jinyoung CHOI	3449-2744PUS3	5210
2292	7590	02/06/2019	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH, LLP			KHALID, OMER	
8110 Gatehouse Road			ART UNIT	
Suite 100 East			PAPER NUMBER	
FALLS CHURCH, VA 22042-1248			2422	
DATE MAILED: 02/06/2019				

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.

Ex. 1002 – TCL Indus Holdings Co., Ltd.

TCL Indus Holdings Co., Ltd. v. LGE – IPR2023-00238

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Notice of Allowability	Application No. 15/788,510	Applicant(s) CHOI et al.	
	Examiner OMER KHALID	Art Unit 2422	AIA 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 12/01/2018.
☐ 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 1-5 and 8-23. 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 _____. 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 _____.
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/OMER KHALID/ Examiner, Art Unit 2422	/JEFFEREY F HAROLD/ Supervisory Patent Examiner, Art Unit 2422
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<i>Notice of References Cited</i>	Application/Control No. 15/788,510		Applicant(s)/Patent Under Reexamination CHOI et al.	
	Examiner OMER KHALID		Art Unit 2422	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-20030075983-A1	04-2003	Stecyk, Polly	H04L12/2805	307/38
*	B	US-20110252446-A1	10-2011	JEONG; Youngho	H04N21/4312	725/40
*	C	US-7681141-B2	03-2010	Tu; Edgar A.	G06F3/0485	715/763
*	D	US-20110131610-A1	06-2011	Lee; Hyung Nam	H04N21/234318	725/48
*	E	US-7880816-B2	02-2011	Kinoshita; Kosuke	H04N5/4403	348/563
*	F	US-20100299606-A1	11-2010	Morita; Toru	G06F3/0482	715/738
*	G	US-20040140995-A1	07-2004	Goldthwaite, Flora	H04N5/44543	715/716
	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.

U.S. Patent and Trademark Office
PTO-892 (Rev. 01-2001)

Notice of References Cited

Part of Paper No. 20190116

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application of:

Jinyoung CHOI et al.

Application No.: 15/788,510

Confirmation No.: 5210

Filed: October 19, 2017

Art Unit: 2422

For: METHOD OF PROVIDING EXTERNAL
DEVICE LIST AND IMAGE DISPLAY
DEVICE

Examiner: KHALID, OMER

REPLY UNDER 37 C.F.R. § 1.111

MS AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

INTRODUCTORY COMMENTS

In reply to the Office Action dated November 20, 2018, the following remarks are respectfully submitted in connection with the above-identified application.

A Listing of the Claims (No Changes); and

Remarks.

Attachments: English Translation of Priority Document, and
Certificate of Verification

A LISTING OF THE CLAIMS (NO CHANGES)

1. (Previously Presented) An image display device comprising:

a display;

a first external interface configured to receive a first image signal input from a first external device connected to the image display device;

a second external interface configured to receive a second image signal input from a second external device connected to the image display device; and

a controller coupled with the display, the first external interface and the second external interface, the controller configured to:

display a plurality of external device icons, on the display, wherein the plurality of external device icons include a first external device icon and a second external device icon, wherein a first default image corresponding to the first external interface is displayed on the first external device icon and a second default image corresponding to the second external device is displayed on the second external device icon, and

change the first default image to a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device, and

change the first image to the first default image in response to the second external device icon being selected,

wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed.

2. (Original) The image display device according to claim 1, wherein the controller is further configured to:

highlight the first external device icon in response to the first external device icon being selected, and

highlight the second external device icon in response to the second external device icon being selected.

3. (Original) The image display device according to claim 1, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device icons while the first external device icon is selected.

4. (Original) The image display device according to claim 1, wherein the first and second external device icons are selectable via a cursor positioned on the first and second external device icons, respectively.

5. (Original) The image display device according to claim 4, wherein the cursor is controlled by a remote controller interfacing with the image display device.

6. (Canceled)

7. (Canceled)

8. (Previously Presented) The image display device according to claim 1, wherein the controller is further configured to display a symbol representing that the first external device or the second external device is being connected to the display device on the first external device icon or the second external device icon.

9. (Previously Presented) The image display device according to claim 1, wherein the controller is further configured to:

change the second default image to a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device.

10. (Original) The image display device according to claim 1, wherein the controller is further configured to:

transmit a control command for controlling the first external device to the first external device, and

display an execution result of the control command on the display.

11. (Previously Presented) The image display device according to claim 1, wherein the first default image is an image identifying the first external interface and the second default image is an image identifying the second external interface.

12. (Previously Presented) The image display device according to claim 1, wherein the changed first image is an image which is currently displayed on the first external device.

13. (Previously Presented) The image display device according to claim 1, wherein the controller is further configured to display the first default image although first external device icon is selected if the first external device is not connected to the image display device.

14. (Previously Presented) A method of an image display device, the method comprising:
receiving, by a first external interface, a first image signal input from a first external device connected to the image display device;

receiving, by a second external interface, a second image signal input from a second external device connected to the image display device;

displaying a plurality of external device icons, on a display, wherein the plurality of external device icons include a first external device icon and a second external device icon, wherein a first default image corresponding to the first external interface is displayed on the first external device icon and a second default image corresponding to the second external interface is displayed on the second external device icon;

changing the first default image to a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device; and

changing the first image to the first default image in response to the second external device icon being selected,

wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed.

15. (Previously Presented) The method according to claim 14, further comprising:
highlighting the first external device icon in response to the first external device icon being selected; and

highlighting the second external device icon in response to the second external device icon being selected.

16. (Previously Presented) The method according to claim 14, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device icons while the first external device icon is selected.

17. (Previously Presented) The method according to claim 14, wherein the first and second external device icons are selectable via a cursor positioned on the first and second external device icons, respectively.

18. (Previously Presented) The method according to claim 17, wherein the cursor is controlled by a remote controller interfacing with the image display device.

19. (Previously Presented) The method according to claim 14, further comprising:
displaying a symbol representing that the first external device or the second external device is being connected to the display device on the first external device icon or the second external device icon.

20. (Previously Presented) The method according to claim 14, further comprising:
changing the second default image to a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device,

wherein the second image is displayed at a position corresponding to an area where the second external device icon is displayed.

21. (Previously Presented) The method according to claim 14, further comprising:
transmitting a control command for controlling the first external device to the first external device; and
displaying an execution result of the control command on the display.

22. (Previously Presented) The method according to claim 14, wherein the changed first image is an image which is currently displayed on the first external device.

23. (Previously Presented) The method according to claim 14, further comprising:
displaying the first default image although first external device icon is selected if the first external device is not connected to the image display device.

REMARKS

Applicant thanks the Examiner for the thorough examination of the present application. Reconsideration of this application, as amended, is respectfully requested.

Status of the Claims

Claims 1-5 and 8-23 are now present in this application. Claims 1 and 14 are independent. No changes have been made to the claims.

Rejection under 35 U.S.C. § 103

Claims 1-5, 8-11 and 12-23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Stecyk in view of Jeong, Tu and Lee. This rejection is respectfully traversed.

The Examiner applies a new reference, i.e., Jeong, and rejects claim 1 in view of a combination of four references (Jeong is newly cited while the other three references are from the rejection in the previous Office Action), in which Jeong is relied upon as teaching the majority of the features recited in the second half of claim 1.

However, Jeong is disqualified as prior art under 35 U.S.C. § 103(c). 35 U.S.C. § 103(c)(1) states:

Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person.

The only section of 35 U.S.C. § 102 that Jeong potentially qualifies under is 35 U.S.C. § 102(e), and Jeong and the claimed invention were both under an obligation of assignment to LG ELECTRONICS INC. at the time the claimed invention was made, as evidenced by the filed assignments in each application. Attached are an English translation of the priority document and a certificate of verification for the English translation. The claims are fully supported by the priority document (see, for example, FIGS. 10-15, which are the same as FIGS. 10-15 in the present application).

Thus, Jeong does not qualify as prior art per 35 U.S.C. § 103(c).

Accordingly, Applicant respectfully submits that the application should be in condition for allowance.

Finality of the Office Action is Precluded

The Examiner correctly indicates on the Office Action Summary page that this Office Action is “non-final,” but the Office Action indicates on page 14 that the Office Action is “final.” Since a new reference was applied to reject the Amendment filed along with a Request for Continued Examination (RCE) on September 14, 2018, Applicant assumes that the indication of “final” is an inadvertent typo. Nevertheless, if the Office Action is intended to be final, then finality should be withdrawn since Jeong does not qualify as prior art, and given that Jeong is used in a new grounds of rejection (going final in a first action would also be improper).

Conclusion

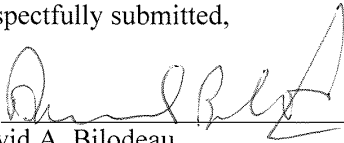
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact **Bradford F. Fritz**, Registration No. 42325, at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: DEC - 5 2018

Respectfully submitted,

By 
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Attachments: English Translation of Priority Document, and
Certificate of Verification



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/788,510	10/19/2017	Jinyoung CHOI	3449-2744PUS3	5210
2292	7590	11/20/2018		
BIRCH STEWART KOLASCH & BIRCH, LLP			EXAMINER	
8110 Gatehouse Road			KHALID, OMER	
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FALLS CHURCH, VA 22042-1248			ART UNIT	PAPER NUMBER
			2422	
			NOTIFICATION DATE	DELIVERY MODE
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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):

mailroom@bskb.com

Office Action Summary	Application No. 15/788,510	Applicant(s) CHOI et al.	
	Examiner OMER KHALID	Art Unit 2422	AIA 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 9/14/2018.
☐ 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) 1-5 and 8-23 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) 1-5 and 8-23 is/are rejected.

8) ☐ Claim(s) ____ 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 ____.

3) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date ____.

4) ☐ Other: ____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/14/2018 has been entered.

Response to Amendment

1. This office action is in response to communications filed 9/14/2018 Claims 1, 9, 11 are amended. Claims 2-5, 10 are original. Claim 8 is previously presented. Claims 6 and 7 are cancelled. Claims 12-23 are new.

Response to Arguments

Applicant's arguments with respect to claims 1-5, 8-11, 12-23 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5, 8-11, 12-23 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application 2003/0075983, Stecyk et al. (Stecyk) in view of U.S. Patent Application 2011/0252446, Jeong et al. (hereinafter Jeong) in further view of U.S. Patent 7681141, Tu further in view of U.S. Patent Application 2011/0131610, Lee et al. (hereinafter lee).

2. **Regarding Claim 1, Stecyk discloses** An image display device (**DTV 12**) comprising:
a display (**DTV 12**);
a first external interface configured to receive a first image signal input from a first external device connected to the image display device (**Fig. 2A: VCR 33 connected to image display (icon 63) through external device interface**);
a second external interface configured to receive a second image signal input from a second external device connected to the image display device (**Fig. 2A: DVD player 34 connected to image display (icon 64) through external device interface**); and
a controller coupled with the display(**Fig. 3A, 3B, 4; [0046], IR signals transmitted from a remote control device 20**), the first external interface (**Fig. 2C**) and the second external interface (**Fig. 2D**), the controller configured to:
display a plurality of external device icons (**Fig. 2A: 60 device selection window**), on the display (**Fig. 2A: 60**), wherein the plurality of external device icons include a first external device icon (**Fig. 2A: 63 VCR icon corresponding to VCR 33**) and a second external device icon (**Fig. 2A: 64 DVD player icon corresponding to DVD Player**), wherein a first default image corresponding to the first external interface is displayed on the first external device icon and a second default image corresponding to the second external device is displayed on the second external device icon, and
change the first default image to a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device (Fig. 5; [0065], The DM 110 is responsible for directing AV signals from external and internal devices to the main picture 13 and sub picture 14 of the DTV 12), and
change the first image to the first default image in response to the second external device icon being selected.

Stecyk does not explicitly disclose wherein a first default image corresponding to the first external interface is displayed on the first external device icon and a second default image corresponding to the second external device is displayed on the second external device icon,

change the first default image to a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device

and

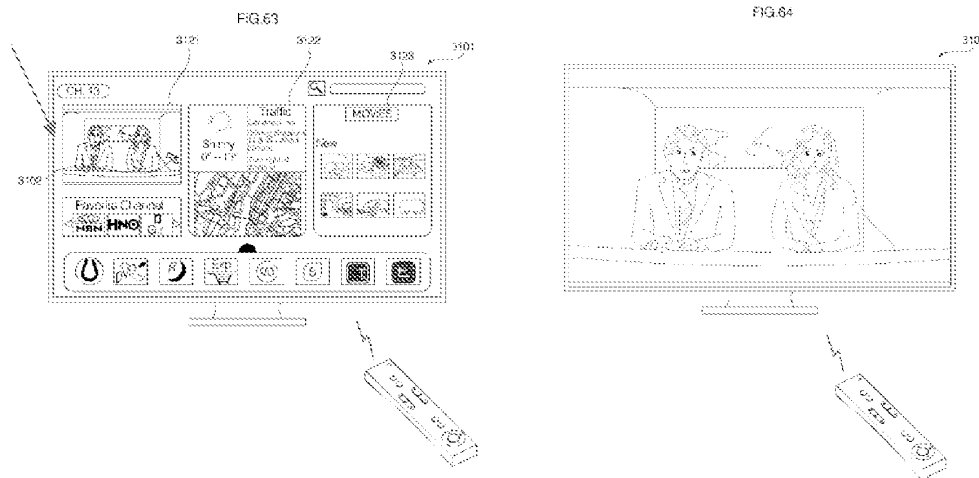
change the first image to the first default image in response to the second external device icon being selected.

However, Jeong 2011/0252446 teaches wherein a first default image (**Figs. 64-66: a first default image**) corresponding to the first external interface is displayed on the first external device icon (**Fig. 63: the card objects 3121 refers to a first external device icon (e.g. VCR, Roku, STB which displays a first default image shown in figs. 604-66) corresponding to a first external interface (see Fig. 60: 3121 and Fig. 63: 3121 card object is a first external interface)**) and a second default image (**Fig. 32: 1810**) corresponding to the second external device (**Fig. 60:DVD, see [0112]-[0115]**) is displayed on the second external device icon (**Fig. 32: 1315; [0382], if the broadcast image 1315 in the card object 1310 is selected using the pointer 205 corresponding to the motion of the remote controller 200 (see FIG. 32A), as shown in FIG. 32B, the broadcast image 1801 is displayed in full-screen on the display 180),**

change the first default image to a first image based on the first image signal (**Examiner notes the object 1312 in fig. 33 displays a first image 1810 on fig. 32 based on the image signal from the connected object 1312 to also receive Figs. 64-66: a changed default image**) in response to the first external device icon being selected if the first external device is connected to the image display device (**Figs. 32 and 33: 1317; [0383], if the object 1317 representing the external device in the card object 1310 is selected using the pointer 205 corresponding to the motion of the remote controller 200 (see FIG. 33A), as shown in FIG. 33B, a screen 1910 representing a connected external device among the external devices is displayed in full-screen on the display 180).**

Change the first image (a first image 1810) to the first default image (Figs. 64-66: a first default image) in response to the second external device icon being selected (Fig. 33; [0384], external device connection terminals (USB, components, RGB, HDMI, external inputs, etc.) is connected...object 1920 representing the “ external input terminal 1”)

It would have been obvious to one of ordinary skill in the art at the time the invention was made would be to modify the TV of Stecyk to be able to show images of connected external device icons as taught in Jeong for the purposes of enhancing user browsing experience.



Further, Tu teaches change the first image to the first default image (Fig. 3: particular video contents icon 340 is positioned into an attention area 310) in response to the second external device icon being selected (Fig. 3: 320 DVD, 318 TV, 324 game, column 5 lines 49-60, The icon is enlarged when the icon is moved into the center area indicating the selection of a type of multimedia contents, which can be video, DVD, TV, Game, etc....column 6 lines 50-60, The DVD icon 320 can be selected when video and/or audio stored on the optical disk 110 is to be viewed and/or listened to. When the optical disk 110 is recognized as a DVD, a legend “DVD” is displayed on the medium icon 320. Otherwise, when the optical disk is recognized as a CD, a legend “CD” is displayed on the medium icon 320.),

(Fig. 4: The attention area 310 of the displayed menu screen 302 shows the video contents icon 340 of the currently playing video shown in the background 330)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the peripheral device icons taught in Stecyk to have the icons show default images identifying the external devices connected as taught in Tu for the purposes enhancing user viewing experience.

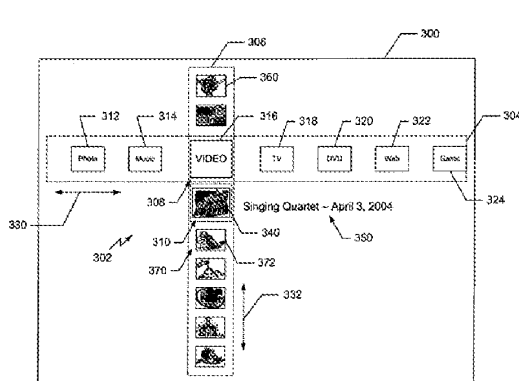


FIG. 3

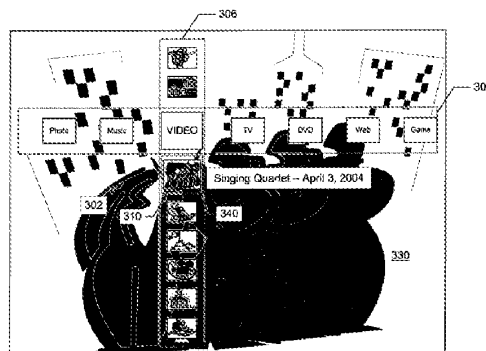
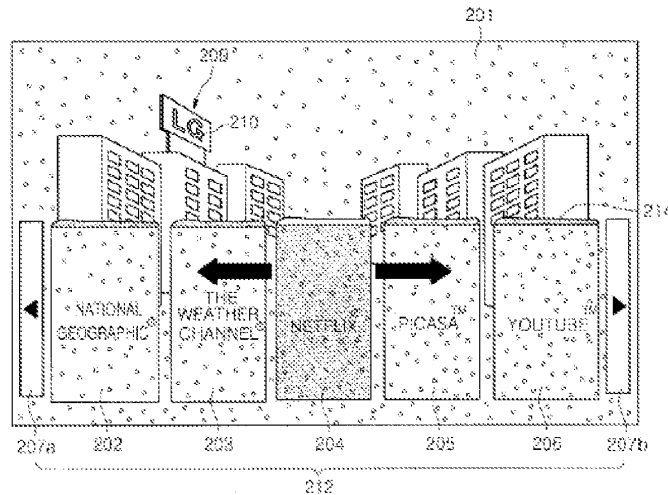


FIG. 4

Further Lee teaches change the first image to the first default image in response to the second external device icon being selected (Fig. 15 [0103], FIG. 15 shows an example of displaying a video or effect relating to weather over a background image 201 when a user selects an icon 203 corresponding to a weather information content provider 20. The effect may involve, for example, snow falling down over the city background image 201 and/or icons 212 in the menu screen. When icon 203 is selected, weather information may be received on the area where the network TV 30 is currently located. An effect corresponding to this weather information may then be displayed in the city included in background image 201).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to change the background image associated with the icon image as shown in Lee for providing the user feedback as to what icon is currently being displayed and was previously displayed. Hence, enhancing the user viewing experience.

Fig. 15



3. **Regarding Claim 2, Stecyk discloses** The image display device according to claim 1, wherein the controller is further configured to:

highlight the first external device icon in response to the first external device icon being selected ([0012], the user next navigates through the device selection window and highlights a device icon, such as a VCR icon, to play a movie on the VCR), and

highlight the second external device icon in response to the second external device icon being selected. ([0012], the user next navigates through the device selection window and highlights a device icon, such as a VCR icon, to play a movie on the VCR. Selection of the VCR and AVR from the device selection menu by pressing the “enter” or some other appropriate key on the system remote control while the corresponding icons are highlighted (selected)).

4. **Regarding Claim 3, Stecyk discloses** The image display device according to claim 1, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device

icons while the first external device icon is selected.([0046], DTV 12 includes a screen 11 with main 13 and sub 14 (i.e. PIP, POP, etc.) also see [0059]))

5. **Regarding Claim 4, Stecyk discloses** The image display device according to claim 1, wherein the first and second external device icons are selectable via a cursor positioned on the first and second external device icons, respectively.([0095], **The user U may then depress the left arrow of the adjust button 29 on the remote 20 to navigate within the device window 60 of the device selection menu 52 to the adjacent icon 65 corresponding to a IRC AV device 35.**)

Stecyk does not explicitly disclose icons are selectable via a cursor positioned on the first and second external device icons

However, Jeong teaches icons are selectable via a cursor positioned on the first and second external device icons (**Fig. 13: 205 pointer; Fig. 15; [0276] FIG. 15(b) illustrates selection of one application 620 from the application list 610 using the pointer 205 of the remote controller 200**)

It would have been obvious to one of ordinary skill in the art at the time the invention was made would be to modify the TV of Stecyk to be able to show images of connected external device icons as taught in Jeong for the purposes of enhancing user browsing experience.

6. **Regarding Claim 5, Stecyk discloses** The image display device according to claim 4, wherein the cursor is controlled by a remote controller interfacing with the image display device. ([0095]**The user U may then depress the left arrow of the adjust button 29 on the remote 20 to navigate within the device window 60 of the device selection menu 52 to the adjacent icon 65 corresponding to a IRC AV device 35.**)

Stecyk does not explicitly disclose wherein the cursor is controlled by a remote controller interfacing with the image display device.

However, Jeong teaches wherein the cursor is controlled by a remote controller interfacing with the image display device. (**Fig. 13: 205 pointer; Fig. 15; [0276] FIG. 15(b) illustrates selection of one application 620 from the application list 610 using the pointer 205 of the remote controller 200**)

It would have been obvious to one of ordinary skill in the art at the time the invention was made would be to modify the TV of Stecyk to be able to show images of connected external device icons as taught in Jeong for the purposes of enhancing user browsing experience.

7. **Regarding Claim 8, Stecyk does not explicitly disclose** The image display device according to claim 1, wherein the controller is further configured to display a symbol representing that the first external device or the second external device is being connected to the display device on the first external device icon or the second external device icon.

However, Jeong teaches wherein the controller is further configured to display a symbol representing that the first external device (**Fig. 33: 1317**) or the second external device is being connected to the display device on the first external device icon (**[0383], if the object 1317 representing the external device in the card object 1310 is selected using the pointer 205 corresponding to the motion of the remote controller 200 (see FIG. 33A), as shown in FIG. 33B, a screen 1910 representing a connected external device among the external devices is displayed in full-screen on the display 180**) or the second external device icon.

It would have been obvious to one of ordinary skill in the art at the time the invention was made would be to modify the TV of Stecyk to be able to show images of connected external device icons as taught in Jeong for the purposes of enhancing user browsing experience.

8. **Regarding Claim 9, Stecyk discloses** The image display device according to claim 1, wherein the controller is further configured to:

Change the second default image to a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device. (**Fig. 1; [0046], the DTV 12 includes a screen 11 with main 13 and sub 14 (e.g., PIP, POP, etc.) video outputs. [0064], AV signals from external and internal devices to the main picture 13 and sub picture 14. [0012], highlights a device icon, such as a VCR icon, to play a movie on the VCR. It is routine in the art that PIP displays a signal from a second component (i.e. VCR, DVD, or the like)**)

Stecyk does not explicitly disclose Change the second default image to a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device.

However Jeong teaches Change the second default image to a second image based on the second image signal (**Examiner notes the object 1312 in fig. 33 displays a first image 1810 on fig. 32 based on the image signal from the connected object 1312 to also receive Figs. 64-66: a changed default image**) in response to the second external device icon being selected if the second external device is connected to the image display device (**Figs. 32 and 33: 1317; [0383], if the object 1317 representing the external device in the card object 1310 is selected using the pointer 205 corresponding to the motion of the remote controller 200 (see FIG. 33A), as shown in FIG. 33B, a screen 1910 representing a connected external device among the external devices is displayed in full-screen on the display 180...(Fig. 33; [0384], external device connection terminals (USB, components, RGB, HDMI, external inputs, etc.) is connected...object 1920 representing the “external input terminal 1”**)

It would have been obvious to one of ordinary skill in the art at the time the invention was made would be to modify the TV of Stecyk to be able to show images of connected external device icons as taught in Jeong for the purposes of enhancing user browsing experience.

9. **Regarding Claim 10, Stecyk discloses** The image display device according to claim 1, wherein the controller is further configured to:

transmit a control command for controlling the first external device to the first external device, and display an execution result of the control command on the display. (**Fig. 4: 21; [0064], The remote 20 includes a control layer lever switch 21 to enable switching between layers to control a TV and other devices such as a cable box, a digital TV, a digital broadcast satellite tuner, a VCR, a DVD or an audio device**)

10. **Regarding Claim 11, Stecyk does not explicitly disclose** The image display device according to claim 1, wherein the first default image is an image identifying the first external interface and the second default image is an image identifying the second external interface

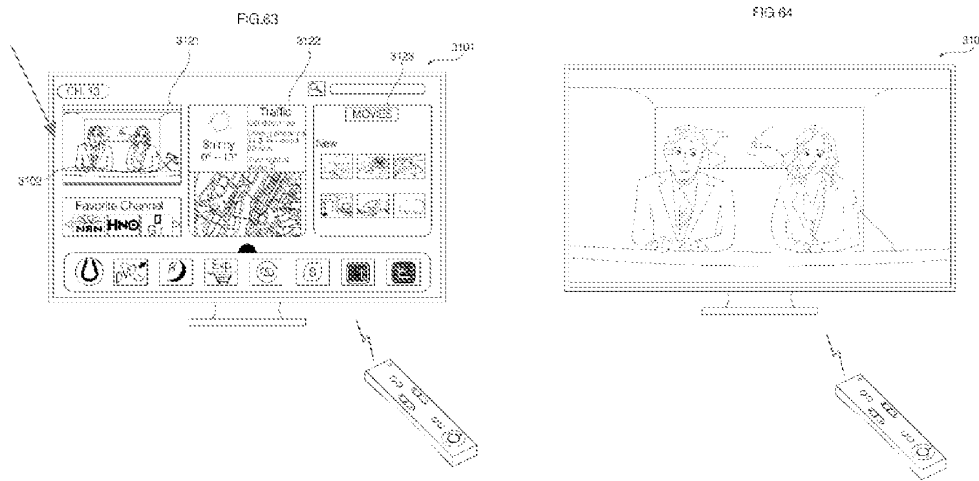
However, Jeong teaches wherein the first default image (Figs. 64-66: a first default image) is an image identifying the first external interface (Fig. 63: the card objects 3121 refers to a first external device icon (e.g. VCR, Roku, STB which displays a first default image shown in figs. 604-66) corresponding to a first external interface (see Fig. 60: 3121 and Fig. 63: 3121 card object is a first external interface) and the second default image (Fig. 32: 1810) is an image identifying the second external interface (Fig. 60: DVD, see [0112]-[0115]... (Fig. 32: 1315; [0382], if the broadcast image 1315 in the card object 1310 is selected using the pointer 205 corresponding to the motion of the remote controller 200 (see FIG. 32A), as shown in FIG. 32B, the broadcast image 1801 is displayed in full-screen on the display 180))

It would have been obvious to one of ordinary skill in the art at the time the invention was made would be to modify the TV of Stecyk to be able to show images of connected external device icons as taught in Jeong for the purposes of enhancing user browsing experience.

11. **Regarding Claim 12, Stecyk does not explicitly disclose** The image display device according to claim 1, wherein the changed first image is an image which is currently displayed on the first external device.

However, Jeong teaches wherein the changed first image (a first image 1810 to Figs. 64-66 a changed first image) is an image which is currently displayed on the first external device. (Fig. 33; [0384], external device connection terminals (USB, components, RGB, HDMI, external inputs, etc.) is connected...object 1920 representing the " external input terminal 1")

It would have been obvious to one of ordinary skill in the art at the time the invention was made would be to modify the TV of Stecyk to be able to show images of connected external device icons as taught in Jeong for the purposes of enhancing user browsing experience.



Further, Tu teaches wherein the changed first image (Fig. 3: particular video contents icon 340 is positioned into an attention area 310) is an image which is currently displayed on the first external device. (Fig. 3: 320 DVD, 318 TV, 324 game, column 5 lines 49-60, The icon is enlarged when the icon is moved into the center area indicating the selection of a type of multimedia contents, which can be video, DVD, TV, Game, etc....column 6 lines 50-60, The DVD icon 320 can be selected when video and/or audio stored on the optical disk 110 is to be viewed and/or listened to. When the optical disk 110 is recognized as a DVD, a legend "DVD" is displayed on the medium icon 320. Otherwise, when the optical disk is recognized as a CD, a legend "CD" is displayed on the medium icon 320.),

(Fig. 4: The attention area 310 of the displayed menu screen 302 shows the video contents icon 340 of the currently playing video shown in the background 330)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the peripheral device icons taught in Stecyk to have the icons show default images identifying the external devices connected as taught in Tu for the purposes enhancing user viewing experience.

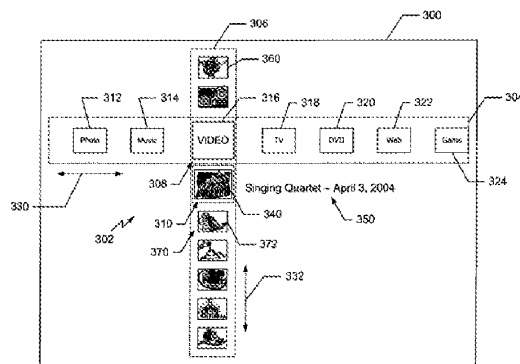


FIG. 3

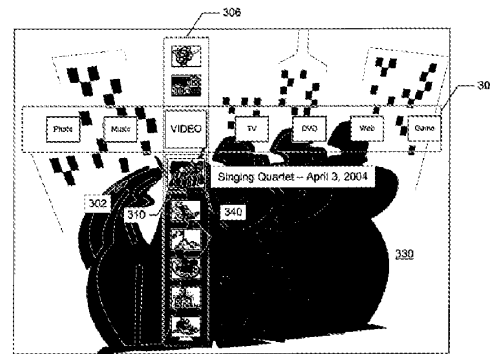


FIG. 4

12. **Regarding Claim 13, Stecyk discloses** The image display device according to claim 1, wherein the controller is further configured to display the first default image although first external device icon is selected if the first external device is not connected to the image display device.([0055], FIG. 2A and the DBS tuner and D-AVR icons 61 and 86 in FIGS. 2B-2C, may be used to indicate that a particular device is unavailable or disabled)

13. **Claim 14 is the method**, rejected with respect to the same limitations as rejected in **Claim 1**.

14. **Claim 15 is the method**, rejected with respect to the same limitations as rejected in **Claim 2**.

15. **Claim 16 is the method**, rejected with respect to the same limitations as rejected in **Claim 3**.

16. **Claim 17 is the method**, rejected with respect to the same limitations as rejected in **Claim 4**.

17. **Claim 18 is the method**, rejected with respect to the same limitations as rejected in **Claim 5**.

18. **Claim 19 is the method**, rejected with respect to the same limitations as rejected in **Claim 8**.

19. **Claim 20 is the method**, rejected with respect to the same limitations as rejected in **Claim 9**.

20. **Claim 21 is the method**, rejected with respect to the same limitations as rejected in **Claim 10**.
21. **Claim 22 is the method**, rejected with respect to the same limitations as rejected in **Claim 12**.
22. **Claim 23 is the method**, rejected with respect to the same limitations as rejected in **Claim 13**.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMER KHALID whose telephone number is (571)270-5997. The examiner can normally be reached on Monday- Friday 9am-7pm.

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, Jeffery Harold can be reached on (571) 272-7519. 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 <http://pair-direct.uspto.gov>. 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.

/OMER KHALID/
Examiner, Art Unit 2422
/JEFFEREY F HAROLD/
Supervisory Patent Examiner, Art Unit 2422

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application of:

Jinyoung CHOI et al.

Application No.: 15/788,510

Confirmation No.: 5210

Filed: October 19, 2017

Art Unit: 2422

For: METHOD OF PROVIDING EXTERNAL
DEVICE LIST AND IMAGE DISPLAY
DEVICE

Examiner: KHALID, OMER

AMENDMENT UNDER 37 C.F.R. § 1.114

MS RCE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

INTRODUCTORY COMMENTS

In reply to the Office Action dated June 28, 2018, the following amendments and remarks are respectfully submitted along with a Request for Continued Examination (RCE) in connection with the above-identified application.

Amendments to the Claims; and

Remarks.

Attachment: Request for Continued Examination (RCE)

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An image display device comprising:

a display;

a first external interface configured to receive a first image signal input from a first external device connected to the image display device;

a second external interface configured to receive a second image signal input from a second external device connected to the image display device; and

a controller coupled with the display, the first external interface and the second external interface, the controller configured to:

display a plurality of external device icons, on ~~a first area of the display~~, wherein the plurality of external device icons include a first external device icon ~~corresponding to the first external device~~ and a second external device icon ~~corresponding to the second external device~~, wherein a first default image identifying~~corresponding to the first external interface device~~ is displayed on the first external device icon and a second default image ~~identifying~~corresponding to the second external device is displayed on the second external device icon, and

change the first default image to display, on a second area of the display, a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device, and~~wherein the first image is an image which is currently being displayed on the first external device~~

change the first image to the first default image in response to the second external device icon being selected,

wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed.

2. (Original) The image display device according to claim 1, wherein the controller is further configured to:

highlight the first external device icon in response to the first external device icon being selected, and

highlight the second external device icon in response to the second external device icon being selected.

3. (Original) The image display device according to claim 1, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device icons while the first external device icon is selected.

4. (Original) The image display device according to claim 1, wherein the first and second external device icons are selectable via a cursor positioned on the first and second external device icons, respectively.

5. (Original) The image display device according to claim 4, wherein the cursor is controlled by a remote controller interfacing with the image display device.

6. (Canceled)

7. (Canceled)

8. (Previously Presented) The image display device according to claim 1, wherein the controller is further configured to display a symbol representing that the first external device or the second external device is being connected to the display device on the first external device icon or the second external device icon.

9. (Currently Amended) The image display device according to claim 1, wherein the controller is further configured to:

change the second default image to display, on the second area of the display, a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device.

10. (Original) The image display device according to claim 1, wherein the controller is further configured to:

transmit a control command for controlling the first external device to the first external device, and

display an execution result of the control command on the display.

11. (Currently Amended) The image display device according to claim 1, wherein the first default image is an image identifying the first external interface and the second default image is an image identifying the second external interface ~~image is displayed at a position corresponding to an area where the first external device icon is displayed.~~

12. (New) The image display device according to claim 1, wherein the changed first image is an image which is currently displayed on the first external device.

13. (New) The image display device according to claim 1, wherein the controller is further configured to display the first default image although first external device icon is selected if the first external device is not connected to the image display device.

14. (New) A method of an image display device, the method comprising:

receiving, by a first external interface, a first image signal input from a first external device connected to the image display device;

receiving, by a second external interface, a second image signal input from a second external device connected to the image display device;

displaying a plurality of external device icons, on a display, wherein the plurality of external device icons include a first external device icon and a second external device icon, wherein a first default image corresponding to the first external interface is displayed on the first external device icon and a second default image corresponding to the second external interface is displayed on the second external device icon;

changing the first default image to a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device; and

changing the first image to the first default image in response to the second external device icon being selected,

wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed.

15. (New) The method according to claim 14, further comprising:

highlighting the first external device icon in response to the first external device icon being selected; and

highlighting the second external device icon in response to the second external device icon being selected.

16. (New) The method according to claim 14, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device icons while the first external device icon is selected.

17. (New) The method according to claim 14, wherein the first and second external device icons are selectable via a cursor positioned on the first and second external device icons, respectively.

18. (New) The method according to claim 17, wherein the cursor is controlled by a remote controller interfacing with the image display device.

19. (New) The method according to claim 14, further comprising:

displaying a symbol representing that the first external device or the second external device is being connected to the display device on the first external device icon or the second external device icon.

20. (New) The method according to claim 14, further comprising:

changing the second default image to a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device,

wherein the second image is displayed at a position corresponding to an area where the second external device icon is displayed.

21. (New) The method according to claim 14, further comprising:

transmitting a control command for controlling the first external device to the first external device; and

displaying an execution result of the control command on the display.

22. (New) The method according to claim 14, wherein the changed first image is an image which is currently displayed on the first external device.

23. (New) The method according to claim 14, further comprising:

displaying the first default image although first external device icon is selected if the first external device is not connected to the image display device.

REMARKS

Applicant thanks the Examiner for the thorough examination of the present application. Reconsideration of this application, as amended, is respectfully requested.

Status of the Claims

Claims 1-5 and 8-23 are now present in this application. Claims 1 and 14 are independent.

By this Amendment, claims 1 and 9 have been amended, and claims 12-23 have been added. No new matter has been added. Reconsideration of this application, as amended, is respectfully requested.

Examiner Interview

Applicant thanks the Examiner for the courtesies extended to Applicant's representatives during the interview which was conducted on September 5, 2018. During the interview, Applicant's representatives discussed differences between the embodied invention and the cited references with the Examiner. Also, proposed amendments to the claims were discussed. The Examiner agreed that the proposed amendments would overcome the current art rejections and rejection under 35 U.S.C. § 101, but noted that the changes would require a further search and consideration. The claims have been amended in the manner discussed during the interview, and are believed to place the application into condition for allowance.

Rejection under 35 U.S.C. § 101

Claims 1-10 stand rejected under 35 U.S.C. § 101 as being directed to a judicial exception, an abstract idea, without significantly more. According to the Office Action, claims 1-10 allegedly lack additional elements sufficient to amount to significantly more than the judicial exception. This rejection is respectfully traversed.

As discussed during the interview, claim 1 has been amended to address the Examiner's concerns. Amended claim 1 recites additional elements sufficient to amount to significantly more than the judicial exception. For instance, amended claim 1 includes the advantage discussed in the specification and recites features representing an improvement to another technology or

technical field. Thus, amended independent claim 1 satisfies the second step of the *Alice* test by reciting features that solve a technological problem.

Accordingly, Applicant respectfully requests the rejection of claims 1-10 under 35 U.S.C. § 101 be reconsidered and withdrawn.

Rejections under 35 U.S.C. § 103

Claims 1-3 and 9-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Stecyk in view of Tu and Lee. Claims 4, 5 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Stecyk in view of Tu, Lee and Sato. These rejections are respectfully traversed.

As discussed above, the Examiner agreed that the changes to claim 1 overcome the rejection. Differences between the embodied invention and the cited references that were discussed during the interview are summarized and reiterated below.

Amended independent claim 1 recites:

“[a]n image display device comprising:

a display;

a first external interface configured to receive a first image signal input from a first external device connected to the image display device;

a second external interface configured to receive a second image signal input from a second external device connected to the image display device; and

a controller coupled with the display, the first external interface and the second external interface, the controller configured to:

display a plurality of external device icons, on the display, wherein the plurality of external device icons include a first external device icon and a second external device icon, wherein a first default image corresponding to the first external interface is displayed on the first external device icon and a second default image corresponding to the second external device is displayed on the second external device icon, and

change the first default image to a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device, and

change the first image to the first default image in response to the second external device icon being selected,

wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed.”

Amended claim 1 recites a sequence including specific transitions and specific spatial relationships and features that are not taught or suggested by any of the four different references cited by the Office Action.

The Office Action acknowledges that the majority of the second half of claim 1, as previously presented, is not taught by Stecyk. To this end, the Office Action makes reference to Tu (newly cited) and Lee (also owned by Applicant).

In contrast to amended claim 1, with reference to Fig. 3 of Tu, Tu is merely directed to a horizontally scrollable list of icons (304) displayed on a PC (e.g., an old playstation), in which each icon corresponds to a different category of content/files (e.g., music, photos, videos, games etc.), and when an icon (316) is scrolled to the center position of the screen – then more icons pop-out along the vertical direction (306), in which each of those icons (310, 370) correspond to a specific individual content items within that content category (e.g., different movies or shows within the “video” category, etc.). Also, when one of those icons is selected, a preview image can be displayed on the background behind the icons (Tu’s Fig. 4, item 330).

Tu does not teach or suggest wherein a first default image corresponding to the first external interface is displayed on the first external device icon and a second default image corresponding to the second external device is displayed on the second external device icon, as recited in amended claim 1. Rather, Tu’s icons merely correspond to a generic content category, such as music files, video files, games etc.

In further contrast, Tu does not teach or suggest the specifics of changing the first default image to a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device, and changing the first image to the first default image in response to the second external device icon being selected, as recited in amended claim 1. Tu is not concerned with such specific transitions.

In even further contrast, Tu does not teach or suggest wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed, as recited in amended claim 1.

Lee does not cure the deficiencies of Tu and Stecyk. Rather, Lee is directed to displaying a background effect (e.g., snow) which is related to an application icon that was selected by the user (e.g., the Weather Channel app icon). See Lee's Fig. 15 and paragraph [0103].

Accordingly, even if combined, Stecyk, Tu and Lee do not teach or suggest each and every specific feature recited in amended claim 1. Sato does not cure the deficiencies of Stecyk, Tu and Lee.

Claims 2-5 and 8-11 are allowable at least based on their dependency from claim 1, and/or further in view of their own respective features.

Accordingly, reconsideration and withdrawal the rejections are respectfully requested.

New Claims

Claims 12-23 have been added for the Examiner's consideration.

Claim 14 recites similar distinguishing features as claim 1 in a varying claim scope and is allowable for the same reasons as claim 1. Claims 12, 13 and 15-23 are allowable at least based on their dependency from claim 1 or 14, and/or further in view of their own respective features.

Accordingly, consideration and allowance of claims 12-23 are respectfully requested.

Conclusion

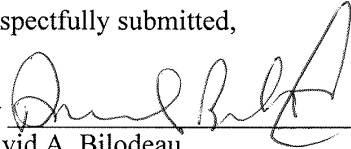
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact **Bradford F. Fritz**, Registration No. 63406, at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: SEP 14 2018

Respectfully submitted,

By 
David A. Bilodeau
Registration No.: 42325
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road, Suite 100 East
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703-205-8000

Attachment: Request for Continued Examination (RCE)



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/788,510	10/19/2017	Jinyoung CHOI	3449-2744PUS3	5210
2292 7590 06/28/2018 BIRCH STEWART KOLASCH & BIRCH, LLP 8110 Gatehouse Road Suite 100 East FALLS CHURCH, VA 22042-1248			EXAMINER KHALID, OMER	
			ART UNIT 2422	PAPER NUMBER
			NOTIFICATION DATE 06/28/2018	DELIVERY MODE 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):

mailroom@bskb.com

Office Action Summary	Application No. 15/788,510	Applicant(s) CHOI ET AL.	
	Examiner OMER KHALID	Art Unit 2422	AIA (First Inventor to File) 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 2/8/2018.
☐ 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) 1-5 and 7-11 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) 1-5 and 7-11 is/are rejected.
- 8) ☐ Claim(s) ____ 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 10/19/2017 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) | 3) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____. | 4) ☐ Other: ____. |

Art Unit: 2422

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

DETAILED ACTION

Response to Amendment

1. This office action is in response to communications filed 2/8/2018 Claims 1, and 8 are amended. Claims 2-5, 9, 10 are original. Claims 6 and 7 are cancelled. Claims 11 are new.

Response to Arguments

Applicant's arguments with respect to claims 1-5, 8-11 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Claim Rejections - 35 USC § 101

Applicant's arguments regarding the 101 rejection for abstract ideas is maintained. Displaying a symbol if an external device is connected is not considered significantly more. The concept is routine since all devices have an icon present if a hard drive is connected or if Bluetooth is connected. Therefore the case law *Electric Power Group* applies to the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2422

1. Claims 1-3, 9, 10, 11 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application 2003/0075983, Stecyk et al. (Stecyk) in view of U.S. Patent 7681141, Tu further in view of U.S. Patent Application 2011/0131610, Lee et al. (hereinafter lee).

2. **Regarding Claim 1, Stecyk discloses** An image display device (**DTV 12**) comprising:

a display (**DTV 12**);

a first external interface configured to receive a first image signal input from a first external device connected to the image display device (**Fig. 2A: VCR 33 connected to image display (icon 63) through external device interface**);

a second external interface configured to receive a second image signal input from a second external device connected to the image display device (**Fig. 2A: DVD player 34 connected to image display (icon 64) through external device interface**); and

a controller coupled with the display(**Fig. 3A, 3B, 4; [0046], IR signals transmitted from a remote control device 20**), the first external interface (**Fig. 2C**) and the second external interface (**Fig. 2D**), the controller configured to:

display a plurality of external device icons (**Fig. 2A: 60 device selection window**), on a first area of the display (**Fig. 2A: 60**), wherein the plurality of external device icons include a first external device icon corresponding to the first external device (**Fig. 2A: 63 VCR icon corresponding to VCR 33**) and a second external device icon corresponding the second external device (**Fig. 2A: 64 DVD player icon corresponding to DVD Player**), a first default image identifying the first external device is displayed on the first external device icon and a second default image identifying the second external device is displayed on the second external device icon, and display, on a second area of the display, a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device (**Fig. 5; [0065], The DM 110 is responsible for directing AV signals from external and internal devices to the main picture 13 and sub picture 14 of the DTV 12**), wherein the first image is an image which is currently being displayed on the first external device

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Stecyk does not explicitly disclose a first default image identifying the first external device is displayed on the first external device icon and a second default image identifying the second external device is displayed on the second external device icon,

wherein the first image is an image which is currently being displayed on the first external device

However, Tu teaches a first default image identifying the first external device is displayed on the first external device icon (Fig. 3: particular video contents icon 340 is positioned into an attention area 310) and a second default image identifying the second external device is displayed on the second external device icon (Fig. 3: 320 DVD, 318 TV, 324 game, column 5 lines 49-60, The icon is enlarged when the icon is moved into the center area indicating the selection of a type of multimedia contents, which can be video, DVD, TV, Game, etc....column 6 lines 50-60, The DVD icon 320 can be selected when video and/or audio stored on the optical disk 110 is to be viewed and/or listened to. When the optical disk 110 is recognized as a DVD, a legend "DVD" is displayed on the medium icon 320. Otherwise, when the optical disk is recognized as a CD, a legend "CD" is displayed on the medium icon 320.)

wherein the first image is an image which is currently being displayed on the first external device

(Fig. 4: The attention area 310 of the displayed menu screen 302 shows the video contents icon 340 of the currently playing video shown in the background 330)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the peripheral device icons taught in Stecyk to have the icons show default images identifying the external devices connected as taught in Tu for the purposes enhancing user viewing experience.

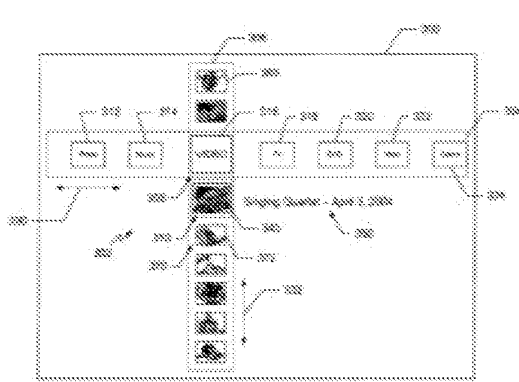


FIG. 3

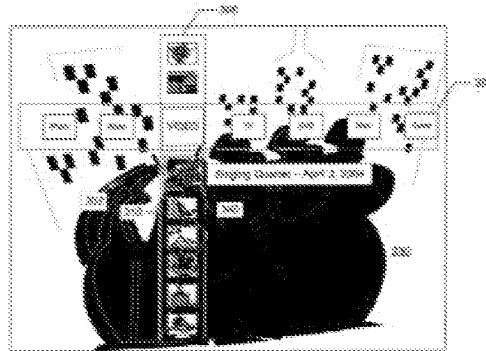


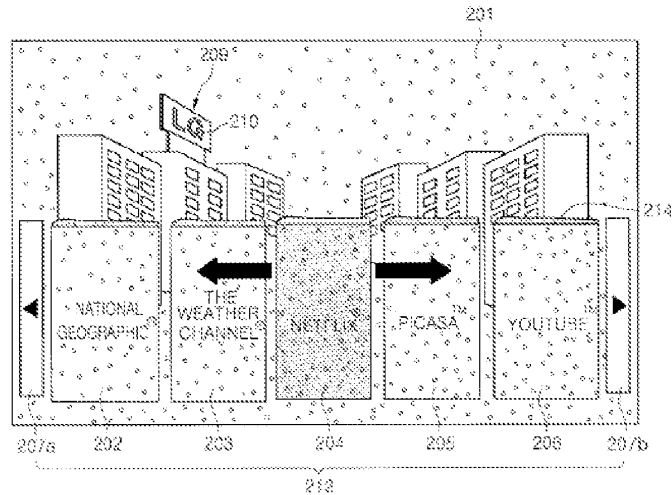
FIG. 4

Further Lee teaches a first default image identifying the first external device is displayed on the first external device icon and a second default image identifying the second external device is displayed on the second external device icon.

wherein the first image is an image which is currently being displayed on the first external device (Fig. 15 [0103], FIG. 15 shows an example of displaying a video or effect relating to weather over a background image 201 when a user selects an icon 203 corresponding to a weather information content provider 20. The effect may involve, for example, snow falling down over the city background image 201 and/or icons 212 in the menu screen. When icon 203 is selected, weather information may be received on the area where the network TV 30 is currently located. An effect corresponding to this weather information may then be displayed in the city included in background image 201).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to change the background image associated with the icon image as shown in Lee for providing the user feedback as to what icon is currently being displayed and was previously displayed. Hence, enhancing the user viewing experience.

Fig. 15



3. **Regarding Claim 2, Stecyk discloses** The image display device according to claim 1, wherein the controller is further configured to:

highlight the first external device icon in response to the first external device icon being selected
([0012], the user next navigates through the device selection window and highlights a device icon, such as a VCR icon, to play a movie on the VCR), and

highlight the second external device icon in response to the second external device icon being selected.([0012], the user next navigates through the device selection window and highlights a device icon, such as a VCR icon, to play a movie on the VCR. Selection of the VCR and AVR from the device selection menu by pressing the “enter” or some other appropriate key on the system remote control while the corresponding icons are highlighted (selected)).

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4. **Regarding Claim 3, Stecyk discloses** The image display device according to claim 1, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device icons while the first external device icon is selected. **([0046], DTV 12 includes a screen 11 with main 13 and sub 14 (i.e. PIP, POP, etc.) also see [0059]))**

9. **Regarding Claim 9, Stecyk discloses** The image display device according to claim 1, wherein the controller is further configured to:

display, on the second area of the display, a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device. **(Fig. 1; [0046], the DTV 12 includes a screen 11 with main 13 and sub 14 (e.g., PIP, POP, etc.) video outputs. [0064], AV signals from external and internal devices to the main picture 13 and sub picture 14. [0012], highlights a device icon, such as a VCR icon, to play a movie on the VCR. It is routine in the art that PIP displays a signal from a second component (i.e. VCR, DVD, or the like))**

10. **Regarding Claim 10, Stecyk discloses** The image display device according to claim 1, wherein the controller is further configured to:

transmit a control command for controlling the first external device to the first external device, and display an execution result of the control command on the display. **(Fig. 4: 21; [0064], The remote 20 includes a control layer lever switch 21 to enable switching between layers to control a TV and other devices such as a cable box, a digital TV, a digital broadcast satellite tuner, a VCR, a DVD or an audio device)**

Regarding Claim 11, Stecyk does not explicitly disclose The image display device according to claim 1, wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed.

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However Tu teaches wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed. **(Fig. 4: The attention area 310 of the displayed menu screen 302 shows the video contents icon 340 of the currently playing video shown in the background 330)**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the peripheral device icons taught in Styeck to have the icons show default images identifying the external devices connected as taught in Tu for the purposes enhancing user viewing experience.

Further Lee teaches wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed **(Fig. 15 [0103], FIG. 15 shows an example of displaying a video or effect relating to weather over a background image 201 when a user selects an icon 203 corresponding to a weather information content provider 20. The effect may involve, for example, snow falling down over the city background image 201 and/or icons 212 in the menu screen. When icon 203 is selected, weather information may be received on the area where the network TV 30 is currently located. An effect corresponding to this weather information may then be displayed in the city included in background image 201).**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to change the background image associated with the icon image as shown in Lee for providing the user feedback as to what icon is currently being displayed and was previously displayed. Hence, enhancing the user viewing experience.

Claims 4, 5, 8 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application 2003/0075983, Stecyk et al. (Stecyk) in view of U.S. Patent 7681141, Tu, further in view of U.S. Patent Application 2011/0131610, Lee et al. (hereinafter lee) further in view of U.S. Patent 6825858, Sato

5. **Regarding Claim 4, Stecyk discloses** The image display device according to claim 1, wherein the first and second external device icons are selectable via a cursor positioned on the first and second external device icons, respectively. **([0095], The user U may then depress the left arrow of the adjust button 29 on the remote 20 to navigate within the device window 60 of the device selection menu 52 to the adjacent icon 65 corresponding to a IRC AV device 35.)**

Stecyk does not explicitly disclose icons are selectable via a cursor positioned on the first and second external device icons

However, Tu teaches icons are selectable via a cursor positioned on the first and second external device icons **(Column 1 line 22, by selecting or clicking with a mouse)**

Further, Sato teaches icons are selectable via a cursor positioned on the first and second external device icons **(Column 2 lines 2-4, desired graphic item is selected among the graphic items 19a-19e displayed in the ordinate axis direction by a user's action of pointing it with a cursor)**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the remote control of Stecyk and Tu to visually show the icons can be selected with a cursor via a remote control as taught in Sato for the purposes of enhancing user selection experience.

6. **Regarding Claim 5, Stecyk discloses** The image display device according to claim 4, wherein the cursor is controlled by a remote controller interfacing with the image display device. **([0095]The user U may then depress the left arrow of the adjust button 29 on the remote 20 to navigate within the device window 60 of the device selection menu 52 to the adjacent icon 65 corresponding to a IRC AV device 35.)**

Stecyk in view of Tu does not explicitly disclose wherein the cursor is controlled by a remote controller interfacing with the image display device.

Further, Sato teaches wherein the cursor is controlled by a remote controller interfacing with the image display device. **(Column 2 lines 2-4, desired graphic item is selected among the graphic**

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items 19a-19e displayed in the ordinate axis direction by a user's action of pointing it with a cursor)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the remote control of Stecyk to visually show the icons can be selected with a cursor via a remote control as taught in Sato for the purposes of enhancing user selection experience.

8. **Regarding Claim 8, Stecyk in view of Tu does not explicitly disclose** The image display device according to claim 1, wherein the controller is further configured to display a symbol representing that the first external device or the second external device is being connected to the display device on the first external device icon or the second external device icon.

Further, Sato teaches wherein the controller is further configured to display the symbol on the first external device icon or the second external device icon. **(Fig. 13 icons are highlighted if they are connected, examiner's broadest reasonable interpretation of a symbol is being interpreted as a highlight)**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to visually show the icons associated with the peripheral devices are connected or not connected as taught in Sato and combine it with Stecyk interface for the purposes of enhancing user entertainment experience.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH

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shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMER KHALID whose telephone number is (571)270-5997. The examiner can normally be reached on 9am-7:30pm Monday-Friday.

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, Jeffery Harold can be reached on (571)272-7519. 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 <http://pair-direct.uspto.gov>. 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.

/OMER KHALID/
Examiner, Art Unit 2422

/JEFFEREY F HAROLD/
Supervisory Patent Examiner, Art Unit 2422

Docket No.: 3449-2744PUS3
(Patent)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application of:

Jinyoung CHOI et al.

Application No.: 15/788,510

Confirmation No.: 5210

Filed: October 19, 2017

Art Unit: 2422

For: METHOD OF PROVIDING EXTERNAL
DEVICE LIST AND IMAGE DISPLAY
DEVICE

Examiner: KHALID, OMER

AMENDMENT UNDER 37 C.F.R. § 1.111

MS AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

INTRODUCTORY COMMENTS

In reply to the Office Action dated December 06, 2017, the following amendments and remarks are respectfully submitted in connection with the above-identified application.

Amendments to the Claims begin on page 2.

Remarks begin on page 5.

Attachment: Terminal Disclaimer

BIRCH, STEWART, KOLASCH & BIRCH, LLP

DAB/DAB/sds

AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** An image display device comprising:

a display;

a first external interface configured to receive a first image signal input from a first external device connected to the image display device;

a second external interface configured to receive a second image signal input from a second external device connected to the image display device; and

a controller coupled with the display, the first external interface and the second external interface, the controller configured to:

display a plurality of external device icons, on a first area of the display, wherein the plurality of external device icons include a first external device icon corresponding to the first external device and a second external device icon corresponding the second external device, a first default image identifying the first external device is displayed on the first external device icon and a second default image identifying the second external device is displayed on the second external device icon, and

display, on a second area of the display, a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device, wherein the first image is an image which is currently being displayed on the first external device~~wherein the controller is further configured to display a symbol representing that the first external device or the second external device is connected to the display device.~~

2. (Original) The image display device according to claim 1, wherein the controller is further configured to:

highlight the first external device icon in response to the first external device icon being selected, and

highlight the second external device icon in response to the second external device icon being selected.

3. (Original) The image display device according to claim 1, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device icons while the first external device icon is selected.

4. (Original) The image display device according to claim 1, wherein the first and second external device icons are selectable via a cursor positioned on the first and second external device icons, respectively.

5. (Original) The image display device according to claim 4, wherein the cursor is controlled by a remote controller interfacing with the image display device.

6. **(Canceled)**

7. **(Canceled)**

8. **(Currently Amended)** The image display device according to claim 1, wherein the controller is further configured to ~~display the~~ display a symbol representing that the first external device or the second external device is being connected to the display device on the first external device icon or the second external device icon.

9. (Original) The image display device according to claim 1, wherein the controller is further configured to:

display, on the second area of the display, a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device.

10. (Original) The image display device according to claim 1, wherein the controller is further configured to:

transmit a control command for controlling the first external device to the first external device, and

display an execution result of the control command on the display.

11. **(New)** The image display device according to claim 1, wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed.

REMARKS

Favorable reconsideration of this application as presently amended in light of the following discussion is respectfully requested.

Claims 1-5 and 8-11 are pending in the present application. Claims 6 and 7 have been canceled, claims 1 and 8 have been amended and claim 11 has been added by the present amendment.

In the outstanding Office Action, claim 1 were rejected on the ground of non-statutory double patenting over claims 1 and 11 of U.S. Patent No. 9,800,924; claims 1-10 were rejected under 35 U.S.C. § 101; claims 1-5 and 7-10 were rejected under 35 U.S.C. § 103 as unpatentable over Stecyk et al. in view of Sato; and claim 6 was rejected under 35 U.S.C. § 103(a) as unpatentable over Stecyk et al. in view of Sato and Lee et al.

Enclosed is a Terminal Disclaimer to overcome the double patenting rejection.

Regarding the rejections of claims 1-10 under 35 U.S.C. § 101, the Office Action indicates the feature “display a symbol representing that the first external device or the second external device is connected to the display device” is an abstract idea. It is respectfully noted that this feature has been canceled from claim 1. Claim 1 has also been amended to include additional features regarding the displaying of a first default image and a second default image respectively on the first external device icon and the second external device icon as well as clarifying that the first image is displayed on the second area of the display in response to the first external device icon being selected if the first external device is connected to the image display device. Thus, the claimed invention provides convenience to the user in operating the image display device. For example, the user can quickly look at the display and determine the first external device and the second external device by viewing the corresponding default images. In addition, as described in paragraph [0252] of the filed application, the user can confirm an image signal in advance, which is input from an external device before switching the input of the external device, so that the user’s convenience is improved. Thus, it is respectfully submitted the claim as a whole does amount to significantly more than an abstract idea. Therefore, it is respectfully requested this rejection be withdrawn.

Independent claim 1 has been amended to include subject matter similar to that recited in dependent claims 6 and 7 and additional features. Accordingly, comments will be presented

distinguishing independent claim 1 over the rejection of claim 6 under 35 U.S.C. § 103(a) as unpatentable over Stecyk et al. in view of Sato and Lee et al.

In more detail, independent claim 1 includes a combination of elements and is directed to an image display device including a display; a first external interface configured to receive a first image signal input from a first external device connected to the image display device; a second external interface configured to receive a second image signal input from a second external device connected to the image display device; and a controller coupled with the display, the first external interface and the second external interface, the controller configured to display a plurality of external device icons, on a first area of the display, wherein the plurality of external device icons include a first external device icon corresponding to the first external device and a second external device icon corresponding the second external device, a first default image identifying the first external device is displayed on the first external device icon and a second default image identifying the second external device is displayed on the second external device icon, and display, on a second area of the display, a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device, wherein the first image is an image which is currently being displayed on the first external device.

These features are supported at least by the non-limiting examples shown in Figs. 5, 10-13 and 15 and described in the corresponding description of the specification. For example, these figs. illustrate an image display device 100 including a display 180; a first external interface 135 configured to receive a first image signal input from a first external device connected to the image display device 100; a second external interface 135 configured to receive a second image signal input from a second external device connected to the image display device 100; and a controller 170 coupled with the display 180, the first external interface 135 and the second external interface 135, the controller 170 configured to display a plurality of external device icons 820, on a first area of the display 180, wherein the plurality of external device icons 820 include a first external device icon 840 corresponding to the first external device and a second external device icon 841 (Fig. 15) corresponding the second external device (S700 in Fig. 10 and see Fig. 11), a first default image identifying the first external device is displayed on the first external device icon and a second default image identifying the second external device is displayed on the second external device icon (original claim 7 and see default images in Fig. 11),

and display, on a second area of the display 180, a first image based on the first image signal 860 in response to the first external device icon 840 being selected if the first external device is connected to the image display device 100 (S720 and see Fig. 12), wherein the first image is an image which is currently being displayed on the first external device (original claim 6 and paragraph [0251] of the filed application).

The Office Action relies on Fig. 15 of Lee et al. as disclosing the first image being an image which is currently displayed on the first external device, and relies on Fig. 2A of Stecyk et al. as teachings features related to displaying a default image identifying the first external interface. However, Stecyk et al. merely discloses displaying icon 61, 62, 63, etc. for different devices. As shown in Fig. 2A, the icons are the same and there is no default image identifying the first external device or the second external device. Rather, the icon 61, 62, 63, etc. are the same and merely include text underneath the icons to determine what the external device is. As shown in Fig. 2A, this arrangement clutters the display and is difficult for the user to identify the external devices especially from a distance.

Sato distinguishes between graphic items corresponding to connected devices and graphic items corresponding to devices that are not connected, but does not teach or suggest displaying the default images identifying external devices as in the claimed invention.

In addition, the icon 203 in Fig. 15 of Lee et al. discloses the Weather Channel which is the content provider and does not display a default image that identifies the external device. If the icon 203 is selected, Lee displays a background image 201 that gives an image or effect related to the weather, based on the weather information provided from the content provider. However, Applicant respectfully submits this does not correspond to displaying the first image in response to the first external device icon being selected.

Accordingly, it is respectfully submitted independent claim 1 are each of the claims depending are allowable.

Further, dependent claim 11 has been added to set forth the invention in a varying scope and corresponds to features allowed in the parent application. That is, new claim 11 clarifies the first image is displayed at a position corresponding to an area where the first external device icon is displayed. These features are supported at least by Fig. 13 and the corresponding description.

Conclusion

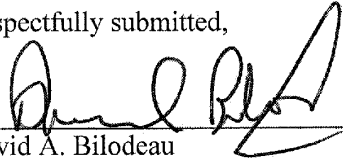
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application; the Examiner is respectfully requested to contact David A. Bilodeau, Registration No. 42325, at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: FEB 7 2018

Respectfully submitted,

By 
David A. Bilodeau
Registration No.: 42325
BIRCH, STEWART, KOLASCH & BIRCH, LLP
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Attachment: Terminal Disclaimer



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/788,510	10/19/2017	Jinyoung CHOI	3449-2744PUS3	5210
2292 7590 12/06/2017 BIRCH STEWART KOLASCH & BIRCH, LLP 8110 Gatehouse Road Suite 100 East FALLS CHURCH, VA 22042-1248			EXAMINER KHALID, OMER	
			ART UNIT 2422	PAPER NUMBER
			NOTIFICATION DATE 12/06/2017	DELIVERY MODE 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):

mailroom@bskb.com

Office Action Summary	Application No. 15/788,510	Applicant(s) CHOI ET AL.	
	Examiner OMER KHALID	Art Unit 2422	AIA (First Inventor to File) 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 10/19/2017.
☐ 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) 1-10 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) 1-10 is/are rejected.

8) ☐ Claim(s) _____ 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 10/19/2017 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 _____.

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

4) ☐ Other: _____.

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

DETAILED ACTION

Double Patenting

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 §§ 706.02(l)(1) - 706.02(l)(3) 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.

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For more information about eTerminal Disclaimers, refer to

www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

Claim1 rejected on the ground of nonstatutory double patenting over claims 1 and 11 of U.S. Patent No. 9800924 since the claims, if allowed, would improperly extend the “right to exclude” already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

Claims 1, 2, 3, 4, 5, 8, 10 of this application 15/788,510 conflict with **claims 1, 2, 4, 5, 6, 7, and 11** of **Patent 9800924** 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

<i>Instant Application 15788510</i>	<i>Patent 9800924</i>
1. An image display device comprising: a display; a first external interface configured to receive a first image signal input from a first external device connected to the image display device; a second external interface configured to receive a second image signal input from a second external device connected to the image display device; and a controller coupled with the display, the first external interface and the second external	1. An image display device comprising: a display; a first external interface configured to receive a first image signal input from a first external device connected to the image display device; a second external interface configured to receive a second image signal input from a second external device connected to the image display device; and a controller coupled with the display, the first external interface and the second external interface, the controller configured to: display a plurality of external device icons on the display, wherein the plurality of external device icons

interface, the controller configured to: display a plurality of external device icons, on a first area of the display, wherein the plurality of external device icons include a first external device icon corresponding to the first external device and a second external device icon corresponding the second external device, and display, on a second area of the display, a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device, wherein the controller is further configured to display a symbol representing that the first external device or the second external device is connected to the display device.	include a first external device icon corresponding to the first external device and a second external device icon corresponding the second external device, wherein a first default image identifying the first external interface is displayed on the first external device icon and a second default image identifying the second external interface is displayed on the second external device icon, display the first default image if the first external device is not connected to the image display device, change the first default image to a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device, wherein the first image is displayed at a position corresponding to an area where the first external device icon is displayed, display the second default image if the second external device is not connected to the image display device, and change the second default image to a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device, wherein the second image is displayed at a position corresponding to an area where the second external device icon is displayed.
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2. The image display device according to claim 1, wherein the controller is further configured to: highlight the first external device icon in response to the first external device icon being selected, and highlight the second external device icon in response to the second external device icon being selected. 3. The image display device according to claim 1, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device icons while the first external device icon is selected. 4. The image display device according to claim 1, wherein the first and second external device icons are selectable via a cursor	11. (Currently Amended) The image display device according to claim 1, wherein <u>the controller is further configured to display a symbol representing that the first external device or the second external device is connected to the display device.</u> 2. The image display device according to claim 1, wherein the controller is further configured to: highlight the first external device icon in response to the first external device icon being selected, and highlight the second external device icon in response to the second external device icon being selected. 5. The image display device according to claim 1, wherein the first image displayed on the first external device icon is simultaneously displayed with the plurality of external device icons for a period of time while the first external device icon is selected. 6. The image display device according to claim 1, wherein the first and second external device icons are selectable via a cursor
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positioned on the first and second external device icons, respectively. 5. The image display device according to claim 4, wherein the cursor is controlled by a remote controller interfacing with the image display device. 8. The image display device according to claim 1, wherein the controller is further configured to display the symbol on the first external device icon or the second external device icon. 10. The image display device according to claim 1, wherein the controller is further configured to: transmit a control command for controlling the first external device to the first external device, and display an execution result of the control command on the display.	positioned on the first and second external device icons, respectively. 7. The image display device according to claim 6, wherein the cursor is controlled by a remote controller interfacing with the image display device. 11. (Currently Amended) The image display device according to claim 1, wherein <u>the</u> controller is further configured to display a symbol representing that the first external device or the second external <u>device</u> is connected to the display device. 4. The image display device according to claim 1, wherein the controller is further configured to: transmit a control command for controlling the first external device to the first external device, and display an execution result of the control command on the display.

Claims 1 of the instant application 15788510 fully encompasses the Patent 9800924.

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Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 is generic to all that is recited in claims 1 and 11 of Patent 9800924. That is, Claim 1 is anticipated by claims 1 and 11 of Patent 9800924 until a Terminal Disclaimer is filed and approved.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-10 are rejected under 35 U.S.C. 101 because the Supreme Court issued a unanimous decision on June 19, 2014 in the case of Alice Corp. v. CLC Bank regarding an abstract ideas for subject matter eligibility under 35 U.S.C. 101. Combination of elements, in the claim is sufficient to ensure that the claim amounts to **significantly more** than the abstract idea itself. The limitations in the claim must show a patent-eligible application of the abstract idea, e.g., **more than** a mere instruction to apply the abstract idea **beyond generally linking** the use of abstract idea to a particular technological environment. Adding the words such as “**CRM**” to mere instructions to implement on abstract idea on a computer which requires **no more than a generic computer** to perform a generic computer function that is all well-understood, routine, and conventional activities previously known to the industry **May Not overcome the 35 U.S.C. 101** rejections.

October 2017 Update: Interim Eligibility Guidance Identifying Abstract Ideas

SUBJECT MATTER ELIGIBILITY ASSESMENT OF AN ABSTRACT IDEA

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Applicant's claims are assist for "Subject Matter Eligibility" (SME) under 35 U.S.C. 101 for judicial exception to be an abstract idea in accordance with the 2014 Interim Eligibility Guidance and July 2015 Update: Interim Eligibility Guidance Identifying Abstract Ideas.

A determination has been made what applicant's claimed invention and the claims have been construed in accordance with its broadest reasonable interpretation (BRI). Referring to the eligibility flowchart reproduced in the *Quick Reference Sheet*. **Applicant's claim 1 discloses "1. An image display device comprising: a display;**

a first external interface configured to receive a first image signal input from a first external device connected to the image display device;

a second external interface configured to receive a second image signal input from a second external device connected to the image display device; and

a controller coupled with the display, the first external interface and the second external interface, the controller configured to:

display a plurality of external device icons, on a first area of the display, wherein the plurality of external device icons include a first external device icon corresponding to the first external device and a second external device icon corresponding the second external device, and display, on a second area of the display, a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device,

wherein the controller is further configured to display a symbol representing that the first external device or the second external device is connected to the display device."

The claimed invention fall within one of the four statutory categories of invention, *process (method)*, *machine (i.e. apparatus or device)*, *manufacturing*, and *composition of matter*. Examiner has identify applicant's invention to fall within "machine"

The limitations in the claim that sets forth or describes the abstract idea are:

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Claim 1. “display a symbol representing that the first external device or the second external device is connected to the display device”.

Claim 1 is rejected under 35 U.S.C. 101 because limitations are considered an abstract idea.

The claim does not include additional elements that are sufficient to amount to significantly more than the judicial exception because: Applicant’s invention is “display a symbol representing that the first external device or the second external device is connected to the display device”. Claim 1 is **(An Idea ‘Of Itself; and Collecting information, analyzing it, and displaying certain results of the collection and analysis (Electric Power Group) from Quick reference sheet) based on the October 2017 Update: Interim Eligibility Guidance Identifying Abstract Ideas built points.**

Therefore the claim as a whole does not amount to significantly more than the abstract idea.

There are no other elements in the claim in addition to the abstract idea. As such; the § 101 rejection is proper.

There are no elements in the disclosure that could be added to the claim that may make the claims eligible.

Claim Interpretation

The following is a quotation of 35 U.S.C. 112(f):

(f) Element in Claim for a Combination. – An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

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Use of the word “means” (or “step for”) in a claim with functional language creates a rebuttable presumption that the claim element is to be treated in accordance with 35 U.S.C. 112(f) (pre-AIA 35 U.S.C. 112, sixth paragraph). The presumption that 35 U.S.C. 112(f) (pre-AIA 35 U.S.C. 112, sixth paragraph) is invoked is rebutted when the function is recited with sufficient structure, material, or acts within the claim itself to entirely perform the recited function.

Absence of the word “means” (or “step for”) in a claim creates a rebuttable presumption that the claim element **is not** to be treated in accordance with 35 U.S.C. 112(f) (pre-AIA 35 U.S.C. 112, sixth paragraph). The presumption that 35 U.S.C. 112(f) (pre-AIA 35 U.S.C. 112, sixth paragraph) is not invoked is rebutted when the claim element recites function but fails to recite sufficiently definite structure, material or acts to perform that function.

Claim elements in this application that use the word “means” (or “step for”) are presumed to invoke 35 U.S.C. 112(f) except as otherwise indicated in an Office action. Similarly, claim elements that do not use the word “means” (or “step for”) are presumed not to invoke 35 U.S.C. 112(f) except as otherwise indicated in an Office action.

The claims in this application are given their broadest reasonable interpretation using the plain meaning of the claim language in light of the specification as it would be understood by one of ordinary skill in the art. The broadest reasonable interpretation of a claim element (also commonly referred to as a claim limitation) is limited by the description in the specification when 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is invoked.

As explained in MPEP § 2181, subsection I, claim limitations that meet the following three-prong test will be interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph:

- (A) the claim limitation uses the term “means” or “step” or a term used as a substitute for “means” that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;
- (B) the term “means” or “step” or the generic placeholder is modified by functional language, typically, but not always linked by the transition word “for” (e.g., “means for”) or another linking word or phrase, such as “configured to” or “so that”; and

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- (C) the term “means” or “step” or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

Use of the word “means” (or “step”) in a claim with functional language creates a rebuttable presumption that the claim limitation is to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites sufficient structure, material, or acts to entirely perform the recited function.

Absence of the word “means” (or “step”) in a claim creates a rebuttable presumption that the claim limitation is not to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is not interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites function without reciting sufficient structure, material or acts to entirely perform the recited function.

Claim limitations in this application that use the word “means” (or “step”) are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action. Conversely, claim limitations in this application that do not use the word “means” (or “step”) are not being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action.

Claim limitation **“a first external interface configured to receive a first image signal input from a first external device connected to the image display device”** has/have been interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, because it uses/they use a generic placeholder **“configured to”** coupled with functional language **“receive a first image signal input from a first external device connected to the image display device”** without reciting sufficient structure to achieve the function.

Since the claim limitation(s) invokes 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, claim(s) **1** has/have been interpreted to cover the corresponding structure described in the specification that achieves the claimed function, and equivalents thereof.

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A review of the specification shows that the following appears to be the corresponding structure described in the specification for the 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph limitation: **[0096], The external device interface unit 135 may connect an external device with the image display device 100, and for this, may include an A/V input/output unit (not shown) or a wireless communication unit (not shown). [0097] The external device interface unit 135 may be used for wire/wireless connection of an external device such as a Digital Versatile Disk (DVD) player, a Blu-ray player, a game console, a camera, a camcorder, and a computer (such as a notebook computer).**

Claim limitation **“a second external interface configured to receive a second image signal input from a second external device connected to the image display device”** has/have been interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, because it uses/they use a generic placeholder **“configured to”** coupled with functional language **“receive a second image signal input from a second external device connected to the image display device”** without reciting sufficient structure to achieve the function.

Since the claim limitation(s) invokes 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, claim(s) **1** has/have been interpreted to cover the corresponding structure described in the specification that achieves the claimed function, and equivalents thereof.

A review of the specification shows that the following appears to be the corresponding structure described in the specification for the 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph limitation: **[0103] –[0109], The network interface unit 133 may provide an interface for connecting the image display device 100 to a wire/wireless network including an internet network. The network interface unit 133 may receive contents such as movies, advertisings, games, VODs, and broadcast signals and information thereon, which are provided from a CP or an NP via a network.**

Claim limitation **“controller configured to: display a plurality of external device icons... display a symbol representing that the first external device or the second external device is connected to the display device.”** has/have been interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, because it uses/they use a generic placeholder **“configured to”** coupled

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with functional language “**display a plurality of external device icons... display a symbol representing that the first external device or the second external device is connected to the display device.**” without reciting sufficient structure to achieve the function.

Since the claim limitation(s) invokes 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, claim(s) **1** has/have been interpreted to cover the corresponding structure described in the specification that achieves the claimed function, and equivalents thereof.

A review of the specification shows that the following appears to be the corresponding structure described in the specification for the 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph limitation: **[0122], control unit 170 may control overall operations of the image display device 100. [0128], the control unit 170 may play contents stored in the image display device 100, received broadcast contents, or external input contents inputted from an external. The contents may have various formats such as a broadcast image, an external input image, an audio file, a still image, an accessed web page, and a document file.**

Claim limitation “**a control command for controlling the first external device to the first external device**” has/have been interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, because it uses/they use a generic placeholder “**for**” coupled with functional language “**controlling the first external device to the first external device**” without reciting sufficient structure to achieve the function.

Since the claim limitation(s) invokes 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, claim(s) **10** has/have been interpreted to cover the corresponding structure described in the specification that achieves the claimed function, and equivalents thereof.

A review of the specification shows that the following appears to be the corresponding structure described in the specification for the 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph limitation: **[0260] The remote control device 200 transmits a control command for controlling an external device.**

If applicant wishes to provide further explanation or dispute the examiner’s interpretation of the corresponding structure, applicant must identify the corresponding structure with reference to the

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specification by page and line number, and to the drawing, if any, by reference characters in response to this Office action.

If applicant does not intend to have the claim limitation(s) treated under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, applicant may amend the claim(s) so that it/they will clearly not invoke 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, or present a sufficient showing that the claim recites/recite sufficient structure, material, or acts for performing the claimed function to preclude application of 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph.

For more information, see MPEP § 2173 *et seq.* and *Supplementary Examination Guidelines for Determining Compliance With 35 U.S.C. 112 and for Treatment of Related Issues in Patent Applications*, 76 FR 7162, 7167 (Feb. 9, 2011).

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5, 7-10 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent Application 2003/0075983, Stecyk et al. (Stecyk) in view of U.S. Patent 6825858, Sato

2. **Regarding Claim 1, Stecyk discloses** An image display device (**DTV 12**) comprising:

a display (**DTV 12**);

a first external interface configured to receive a first image signal input from a first external device connected to the image display device (**Fig. 2A: VCR 33 connected to image display (icon 63) through external device interface**);

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a second external interface configured to receive a second image signal input from a second external device connected to the image display device (**Fig. 2A: DVD player 34 connected to image display (icon 64) through external device interface**); and

a controller coupled with the display(**Fig. 3A, 3B, 4; [0046], IR signals transmitted from a remote control device 20**), the first external interface (**Fig. 2C**) and the second external interface (**Fig. 2D**), the controller configured to:

display a plurality of external device icons (**Fig. 2A: 60 device selection window**), on a first area of the display (**Fig. 2A: 60**), wherein the plurality of external device icons include a first external device icon corresponding to the first external device (**Fig. 2A: 63 VCR icon corresponding to VCR 33**) and a second external device icon corresponding the second external device (**Fig. 2A: 64 DVD player icon corresponding to DVD Player**), and display, on a second area of the display, a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device (**Fig. 5; [0065], The DM 110 is responsible for directing AV signals from external and internal devices to the main picture 13 and sub picture 14 of the DTV 12**),

wherein the controller is further configured to display a symbol representing that the first external device or the second external device is connected to the display device.

Stecyk does not explicitly disclose wherein the controller is further configured to display a symbol representing that the first external device or the second external device is connected to the display device.

However, Sato teaches wherein the controller is further configured to display a symbol representing that the first external device or the second external device is connected to the display device. (**Fig. 13 connected device icons are highlighted when they are connected. Examiner notes that additional indications such as, icons, symbols, and highlights are all design choices that can be selected to show which icon is connected.**)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to visually show the icons associated with the peripheral devices are connected or not connected as taught

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in Sato and combine it with Stecyk interface for the purposes of enhancing user entertainment experience.

3. **Regarding Claim 2, Stecyk discloses** The image display device according to claim 1, wherein the controller is further configured to:

highlight the first external device icon in response to the first external device icon being selected ([0012], the user next navigates through the device selection window and highlights a device icon, such as a VCR icon, to play a movie on the VCR), and

highlight the second external device icon in response to the second external device icon being selected.([0012], the user next navigates through the device selection window and highlights a device icon, such as a VCR icon, to play a movie on the VCR. Selection of the VCR and AVR from the device selection menu by pressing the “enter” or some other appropriate key on the system remote control while the corresponding icons are highlighted (selected)).

4. **Regarding Claim 3, Stecyk discloses** The image display device according to claim 1, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device icons while the first external device icon is selected.([0046], DTV 12 includes a screen 11 with main 13 and sub 14 (i.e. PIP, POP, etc.) also see [0059]))

5. **Regarding Claim 4, Stecyk discloses** The image display device according to claim 1, wherein the first and second external device icons are selectable via a cursor positioned on the first and second external device icons, respectively.([0095], The user U may then depress the left arrow of the adjust button 29 on the remote 20 to navigate within the device window 60 of the device selection menu 52 to the adjacent icon 65 corresponding to a IRC AV device 35.)

Stecyk does not explicitly disclose icons are selectable via a cursor positioned on the first and second external device icons

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However, Sato teaches icons are selectable via a cursor positioned on the first and second external device icons **(Column 2 lines 2-4, desired graphic item is selected among the graphic items 19a-19e displayed in the ordinate axis direction by a user's action of pointing it with a cursor)**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the remote control of Stecyk to visually show the icons can be selected with a cursor via a remote control as taught in Sato for the purposes of enhancing user selection experience.

6. **Regarding Claim 5, Stecyk discloses** The image display device according to claim 4, wherein the cursor is controlled by a remote controller interfacing with the image display device. **([0095]The user U may then depress the left arrow of the adjust button 29 on the remote 20 to navigate within the device window 60 of the device selection menu 52 to the adjacent icon 65 corresponding to a IRC AV device 35.)**

Stecyk does not explicitly disclose wherein the cursor is controlled by a remote controller interfacing with the image display device.

However, Sato teaches wherein the cursor is controlled by a remote controller interfacing with the image display device. **(Column 2 lines 2-4, desired graphic item is selected among the graphic items 19a-19e displayed in the ordinate axis direction by a user's action of pointing it with a cursor)**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the remote control of Stecyk to visually show the icons can be selected with a cursor via a remote control as taught in Sato for the purposes of enhancing user selection experience.

7. **Regarding Claim 7, Stecyk discloses** The image display device according to claim 1, wherein the controller is further configured to display a default image identifying the first external interface. **(Fig. 2A: 63 VCR icon corresponding to VCR 33)**

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8. **Regarding Claim 8, Stecyk does not explicitly disclose** The image display device according to claim 1, wherein the controller is further configured to display the symbol on the first external device icon or the second external device icon.

However, Sato teaches wherein the controller is further configured to display the symbol on the first external device icon or the second external device icon. **(Fig. 13 icons are highlighted if they are connected, examiner's broadest reasonable interpretation of a symbol is being interpreted as a highlight)**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to visually show the icons associated with the peripheral devices are connected or not connected as taught in Sato and combine it with Stecyk interface for the purposes of enhancing user entertainment experience.

9. **Regarding Claim 9, Stecyk discloses** The image display device according to claim 1, wherein the controller is further configured to:

display, on the second area of the display, a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device. **(Fig. 1; [0046], the DTV 12 includes a screen 11 with main 13 and sub 14 (e.g., PIP, POP, etc.) video outputs. [0064], AV signals from external and internal devices to the main picture 13 and sub picture 14. [0012], highlights a device icon, such as a VCR icon, to play a movie on the VCR. It is routine in the art that PIP displays a signal from a second component (i.e. VCR, DVD, or the like))**

10. **Regarding Claim 10, Stecyk discloses** The image display device according to claim 1, wherein the controller is further configured to:

transmit a control command for controlling the first external device to the first external device, and display an execution result of the control command on the display. **(Fig. 4: 21; [0064], The remote 20 includes a control layer lever switch 21 to enable switching between layers to control a**

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TV and other devices such as a cable box, a digital TV, a digital broadcast satellite tuner, a VCR, a DVD or an audio device)

11. Claim 6 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application 2003/0075983, Stecyk et al. (Stecyk) in view of U.S. Patent 6825858, Sato further in view of 2011/0131610, Lee et al. (hereinafter Lee).

12. **Regarding Claim 6, Stecyk in view of Sato does not explicitly disclose** The image display device according to claim 1, wherein the first image is an image which is currently displayed on the first external device. **(First image on screen 11 of first external device (i.e. TV))**

However Lee teaches wherein the first image is an image which is currently displayed on the first external device. **(Fig. 15 [0016], FIG. 15 shows an example of displaying a video or effect relating to weather over a background image 201 when a user selects an icon 203 corresponding to a weather information content provider 20. The effect may involve, for example, snow falling down over the city background image 201 and/or icons 212 in the menu screen; Fig. 16: SI05 connect with content provider server of selected icon).**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to change the background image associated with the icon image as shown in Lee for providing the user features enhancing the user viewing experience.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMER KHALID whose telephone number is (571)270-5997. The examiner can normally be reached on 9am-7:30pm Monday-Friday.

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>.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery Harold can be reached on (571)272-7519. 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 <http://pair-direct.uspto.gov>. 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.

/OMER KHALID/
Examiner, Art Unit 2422

**METHOD OF PROVIDING EXTERNAL DEVICE LIST AND
IMAGE DISPLAY DEVICE**

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a Continuation of co-pending U.S. Application No. 15/390,198, filed on December 23, 2016, which is a Continuation of U.S. Application No. 13/535,735, filed on June 28, 2012 (now U.S. Patent No. 9,532,102), which claims priority under 35 U.S.C. § 119(a) and 35 U.S.C. § 365 to Application No. 10-2011-0088863, filed in Republic of Korea on September 2, 2011, all of which are hereby expressly incorporated by reference into the present application.

BACKGROUND

[0002] The present invention relates to an image display device, and more particularly, to a method for providing a list of external devices thereof.

[0003] Recently, digital TV services using a wire or wireless communication network are becoming more common. The digital TV services provide various services that typical analog broadcasting services cannot provide.

[0004] For example, an Internet Protocol Television (IPTV) service (i.e., one type of the digital TV services) provides interaction through which a user may actively select kinds of watching programs and watching time. The IPTV service may provide various additional services such as internet search, home shopping, and online game on the basis of the interaction.

SUMMARY

[0005] Embodiments provide a method of providing an external device list, which allows a user to recognize an input switch in advance before an image signal of an external device, which is applied to an image display device, is switched for input, and an image display device thereof.

[0006] In one embodiment, a method of providing an external device list to an image display device includes: displaying a plurality of external device icons connectible to the image display device; positioning a pointer on a first external device icon among the plurality of

external device icons; and displaying on a screen of the image display device an image signal of an external device corresponding to the first external device icon having the pointer thereon.

[0007] In another embodiment, an image display device includes: a display unit displaying a plurality of external device icons connectible to the image display device; and a control unit performing a control to display an image signal of an external device corresponding to a first external device icon having a pointer thereon when the pointer is positioned on the first external device icon among the plurality of external device icons.

[0008] The details of one or more embodiments are set forth in the accompanying drawings and the description below. Other features will be apparent from the description and drawings, and from the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a view illustrating a configuration of a broadcast system according to an embodiment.

[0010] FIG. 2 is a view illustrating a configuration of a broadcast system according to another embodiment.

[0011] FIG. 3 is a view illustrating a method for transmitting/receiving data between an image display device and a service provider according to an embodiment.

[0012] FIG. 4 is a block diagram illustrating a configuration of an image display device according to an embodiment.

[0013] FIG. 5 is a block diagram illustrating a configuration of an image display device according to another embodiment.

[0014] FIG. 6 is a view illustrating a platform structure of an image display device according to embodiments.

[0015] FIG. 7 is a view illustrating a method of controlling an operation of an image display device by using a remote control device according to an embodiment.

[0016] FIG. 8 is a block diagram illustrating a configuration of a remote control device according to an embodiment.

[0017] FIG. 9 is a view illustrating a configuration of a home screen displayed on an image display device according to an embodiment.

[0018] FIG. 10 is a flowchart illustrating a method of providing an external device list according to a first embodiment.

[0019] FIGS. 11 to 17 are views illustrating a screen that provides an external device list of an image display device according to the first embodiment.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0020] Hereinafter, a method for providing an external device list and an image display device thereof will be described in more detail with reference to the accompanying drawings.

[0021] The image display device as an intelligent image display device having a computer supporting function in addition to a broadcasting receiving function further includes an internet function besides a solid broadcasting receiving function so that it may have an easy to use interface such as a handwriting input device, a touch screen, or a space remote controller. Moreover, after accessing internet and a computer with a wire or wireless internet supporting function, a function for e-mail, web browsing, banking, or game may be available. For such various functions, a standardized general OS may be used.

[0022] Accordingly, the image display device according to an embodiment may perform user-friendly various functions because a variety of applications may be freely added or deleted on a general OS kernel. The image display device may be a network TV, HBBTV, and a smart TV, for a specific example, and may be applied to a smart phone, if necessary.

[0023] Furthermore, although embodiments of the present invention will be described with reference to the accompanying drawings and contents therein, the present invention is not limited thereto.

[0024] The terms used in this specification are selected from currently widely used general terms in consideration of functions of the present invention, but may vary according to the intentions or practices of those skilled in the art or the advent of new technology. Additionally, in certain cases, there may be terms that an applicant may arbitrarily select, and in this case, their meanings are described below. Accordingly, the terms used in this specification should be interpreted on the basis of substantial implications that the terms have and the contents across this specification not the simple names of the terms

[0025] FIG. 1 is a view illustrating a configuration of a broadcasting system, that is, a schematic view illustrating an entire broadcasting system including an image display device according to an embodiment.

[0026] Referring to FIG. 1, the broadcasting system includes a Content Provider (CP) 10, a Service Provider (SP) 20, a Network Provider (NP) 30 and a Home Network End User (HNED) 40.

[0027] The HNED 40 may correspond to a client 100, i.e., the image display device according to an embodiment, and for example, the client 100 may be a network TV, a smart TV, and an IPTV.

[0028] Moreover, the CP 10 manufactures and provides various contents. As shown in FIG. 1, the CP 10 may be a terrestrial broadcaster, a cable System Operator (SO), a Multiple System Operator (MSO), a satellite broadcaster, or an Internet broadcaster.

[0029] Additionally, the CP 10 may provide various applications besides the broadcast contents. This will be described in more detail later.

[0030] The SP 20 may package contents that the CP 10 provides, and provides the packaged contents as services. For example, the SP 20 may package first terrestrial broadcast, second terrestrial broadcast, cable MSO, satellite broadcast, various internet broadcasts, and applications, and then, provide them to a user.

[0031] Moreover, the SP 20 may provide services to the client 100 through a unicast or multicast method.

[0032] The unicast method is a 1:1 data transmission method between one transmitter and one receiver. For example, in the case of the unicast method, when a receiver requests data to a server, the server transmits the requested data to the receiver in response to the request.

[0033] The multicast method is to transmit data to a plurality of receivers in a specific group. For example, a server may transmit data to a plurality of pre-registered receivers simultaneously. In order for such a multicast registration, an Internet Group Management Protocol (IGMP) may be used.

[0034] The NP 30 may provide a network to provide the service to the client 100, and the client 100 may establish a Home Network End User (HNED) to receive the service.

[0035] Conditional Access or Content Protection may be used as a means to protect contents transmitted from the system. As examples of the Conditional Access or Content

Protection, methods such as CableCARD and Downloadable Conditional Access System (DCAS) may be used.

[0036] Moreover, it is possible for the client 100 to provide contents via a network. In this case, the client 100 may become a CP, and the CP 10 may receive contents from the client 100. Accordingly, a bidirectional contents service or data service may be available.

[0037] According to an embodiment, the CP 10 may provide a network service such as a Social Network Site (SNS), a blog, a micro blog, or an instant messenger.

[0038] For example, the CP 10 providing the SNS service may include a server (not shown) storing various kinds of contents such as texts or uploaded images that a plurality of users create in the SNS.

[0039] In more detail, a user accesses the server of the CP 10 providing the SNS service by using an image display device, and designates accounts that the user wants, so that the user may confirm messages created by the plurality of the designated accounts.

[0040] Additionally, if a user requests the SNS service, an image display device, i.e., the client 100, accesses the server of the CP 10 in order to receive the messages of the designated accounts, and then, displays the received messages sequentially in order of a corresponding message created, for example, displays them in a top to bottom direction.

[0041] Referring to FIG. 2, the image display device 100 corresponding to the client of FIG. 1 may be connected to a broadcasting network and internet network.

[0042] For example, the image display device 100 may include a broadcast interface 101, a section filter 102, an AIT filter 103, an application data processor 104, a broadcast data processor 105, a media player 106, an internet protocol processor 107, an internet interface 108, and a runtime module 109.

[0043] Moreover, the broadcast interface 101 of the image display device 100 may receive Application Information Table (AIT) data, real time broadcast content, application data or a stream event. The real time broadcast content may be Linear A/V Content.

[0044] The section filter 102 performs section filtering on four data received through the broadcast interface 101 in order to transmit AIT data into the AIT filter 102, linear A/V content into the broadcast data processor 105, and stream event and application data into the application data processor 104.

[0045] The internet interface 108 may receive Non-Linear A/V content and application data. For example, the Non-Linear A/V content may be Content On Demand (COD) application.

[0046] Furthermore, the Non-Linear A/V content may be transmitted to the media player 106, and the application data may be transmitted to the runtime module 109.

[0047] Additionally, the runtime module 109 may include an application manager and a browser. The application manager may control a life cycle on interactive application by using AIT data, and the browser may display and process the interactive application

[0048] FIG. 3 is a view illustrating a method for transmitting/receiving data between an image display device and a SP according to an embodiment.

[0049] Referring to FIG. 3, the SP performs a service provider discovery operation in operation S301. The image display device transmits a SP Attachment Request signal in operation S302. Once the SP attachment is completed, the image display device receives provisioning information in operation S303. Furthermore, the image display device receives a master SI table from the SP in operation S304, a Virtual Channel Map table in operation S305, a Virtual Channel Description table in operation S306, and a Source table in operation S307.

[0050] For example, the service provider discovery operation may refer to a process that SPs providing IPTV related services search for a server that provides information on the services that the SPs provide.

[0051] A method of searching for an address list that helps receiving information on a Service Discovery (SD) server, for example, SP discovery information, may be the following three methods. First, an address preset in an image display device or an address manually set by a user may be used. Second, a DHCP based SP discovery method may be used. Third, a DNS SRV-based SP discovery method may be used.

[0052] Moreover, the image display device accesses a server having an address obtained by one of the three methods in order to receive a service provider discovery record that contains information necessary for service discovery for each SP, and performs a service search operation by using the received service provider discovery record. Moreover, the above processes may be available in a push mode or a pull mode.

[0053] Furthermore, the image display device accesses a SP attachment server designated as a SP attachment locator of a SP discovery record, and performs a registration procedure (or a service attachment procedure).

[0054] Moreover, the image display device accesses an authentication service server of the SP designated as the SP authentication locator to perform an additional authentication procedure, and then, performs a service authentication procedure.

[0055] After the service attachment procedure is successful, data transmitted from the server to the image display device may have a form of a provisioning information table.

[0056] During the service attachment operation, the image display device includes its ID and position information in data that are transmitted to the server, and a service attachment server may specify a service that the image display device subscribes on the basis of the data.

[0057] Address information used for obtaining Service Information that the image display device wants to receive may be provided in a form of the provisioning information table. In addition, the address information may correspond to access information on the master SI table. In this case, providing a customized service for each subscriber may be easy.

[0058] Moreover, the Service Information may include a master SI table record for managing access information on a virtual channel map and its version, a virtual channel map table for providing a service list in a package form, a virtual channel description table including detailed information of each channel, and a source table including access information for accessing an actual service.

[0059] FIG. 4 is a block diagram illustrating a configuration of an image display device according to an embodiment.

[0060] Referring to FIG. 4, the image display device 100 includes an Network Interface 111, a TCP/IP Manager 112, a Service Delivery Manager 113, a Demux 115, a PSI&(PSIP and/or SI) decoder 114, an Audio Decoder 116, a Video Decoder 117, a Display A/V and OSD Module 118, a Service Control Manager 119, a Service Discovery Manager 120, a Metadata Manager 122, an SI&Metadata DB 121, a UI manager 124, and a service manager 123.

[0061] The network interface 111 receives or transmits packets from or to a network. That is, the network interface unit 111 may receive services and contents from a SP via a network.

[0062] The TCP/IP manager 112 may be involved in delivering packets from a source to a destination, which are received and transmitted by the image display device 100. Moreover, the TCP/IP manager 112 classifies the received packets in order correspond to a proper protocol, and outputs the classified packets into the service delivery manager 113, the service discovery manager 120, the service control manager 119, and the metadata manager 122.

[0063] Additionally, the service delivery manager 113 is responsible for controlling the received service data. For example, when the service delivery manager 113 controls real-time streaming data, RTP/RTCP may be used.

[0064] When the real-time streaming data are transmitted using the RTP, the service delivery manager 113 parses the received data packet according to the RTP and transmits the parsed data to the Demux 115, or stores the received data packet in the SI&Metadata DB 121. Moreover, the service delivery manager 113 may feed back the network reception information to a server that provides services by using the RTCP.

[0065] The Demux 115 demultiplexes the received packet into audio, video, and Program Specific Information (PSI) data in order to transmit them into the audio/video decoders 116 and 117 and the PSI&(PSIP and/or SI) Decoder 114.

[0066] The PSI&(PSIP and/or SI) Decoder 114 may decode service information such as PSI, and for example, may receive a PSI section, a Program and Service Information Protocol (PSIP) section, or a Service Information (SI) section demultiplexed in the Demux 115 in order to decode them.

[0067] Moreover, the PSI&(PSIP and/or SI) Decoder 114 may decode the received sections to create a database for service information, and the service information may be stored in the SI&Metadata DB 121.

[0068] The audio/video decoders 116 and 117 may decode vide data and audio data received from the Demux 115, and the decoded audio and video data may be provided to a user through the Display A/V and OSD Module 118.

[0069] Moreover, the UI manager 124 and the service manager 123 may manage an overall status of the image display device 100, provide a user interface, and mange another manager.

[0070] For example, the UI manager 124 provides a Graphic User Interface (GUI) for a user through an On Screen Display (OSD), and receives a key input from a user in order to

perform an operation of a receiver according to the key input. Moreover, when receiving a key input signal for a channel selection from a user, the UI manager 124 may transmit the key input signal to the service manager 123.

[0071] The service manager 123 may control a service related manager such as the service delivery manager 113, the service discovery manager 120, the service control manager 119, and the metadata manager 122.

[0072] Additionally, the service manager 123 creates a channel map, and selects a channel by using the channel map according to a key input received from the UI manager 124.

[0073] And, the service manager 123 receives service information on a channel from the PSI&(PSIP and/or SI) Decoder 114, and sets audio/video Packet Identifier (PID) of the selected channel in the Demux 115.

[0074] The service discovery manager 120 provides information necessary for selecting a SP that provides service. For example, on receiving a signal on channel selection from the service manager 123, the service discovery manager 120 may find a service by using the received signal.

[0075] Moreover, the service control manager 119 is responsible for service selection and control. For example, when a user selects a Live Broadcasting service like a typical broadcasting method, IGMP or RTSP is used. When a service such as Video On Demand (VOD) is selected, RTSP is used for service selection and control.

[0076] The RTSP protocol provides a trick mode with respect to real-time streaming. The service control manager 119 may initialize and manage a session passing through an IMC gateway by using an IP Multimedia Subsystem (IMS) and a Session Initiation Protocol (SIP).

[0077] The metadata manager 122 manages service related metadata and stores the metadata in the SI&Metadata DB 121.

[0078] And, the SI&Metadata DB 121 may store the service information decoded by the PSI&(PSIP and/or SI) Decoder 114, the metadata that the metadata manager 122 manages, and the information necessary for selecting a SP that the service discovery manager 120 provides.

[0079] Furthermore, the SI&Metadata DB 121 may store setup data on a system, and for example, may be implemented using NonVolatile RAM (NVRAM) or flash memory.

[0080] Additionally, an IG 750 may be a gateway including functions necessary for accessing an IMS based IPTV service.

[0081] FIG. 5 is a block diagram illustrating a configuration of an image display device according to another embodiment.

[0082] Referring to FIG. 5, the image display device 100 may include a broadcast receiving unit 130, an external device interface unit 135, a storage unit 140, a user input interface unit 150, a control unit 170, a display unit 180, an audio output unit 185, and a power supply unit 190. Moreover, the broadcast receiving unit 130 may include a tuner 131, a demodulation unit 132, and a network interface unit 133.

[0083] The tuner 131 may select a channel selected by a user among Radio Frequency (RF) broadcast signals received through an antenna, or an RF broadcast signal corresponding to all pre-stored channels, and may convert the selected RF broadcast signal into an intermediate frequency signal or a baseband image or sound signal.

[0084] For example, the tuner 131 converts the selected RF broadcast signal into a digital IF signal DIF if it is a digital broadcast signal, or into an analog baseband image or sound signal CVBS/SIF if it is an analog broadcast signal.

[0085] That is, the tuner 131 may process both a digital broadcast signal and an analog broadcast signal, and the analog baseband image or sound signal CVBS/SIF outputted from the tuner 131 may be directly inputted to the control unit 170.

[0086] Moreover, the tuner 131 may receive an RF broadcast signal of a single carrier according to the Advanced Television System Committee (ATSC) format or an RF broadcast signal of a plurality of carriers according to the Digital Video Broadcasting (DVB) format.

[0087] Furthermore, the tuner 131 may sequentially select RF broadcast signals of all broadcast channels stored through a channel memory function from RF broadcast signals received through an antenna, and then, may convert the selected RF broadcast signals into an intermediate frequency signal or a baseband image or sound signal.

[0088] The demodulation unit 132 may receive the digital IF signal DIF converted by the tuner 131, and then, may perform a demodulation operation thereon. For example, if the digital IF signal outputted from the tuner 131 is the ATSC format, the demodulator 132 may perform an 8-Vestigal Side Band (8-VSB) demodulation.

[0089] Additionally, the demodulation unit 132 may perform channel decoding, and for this, may include a Trellis Decoder, a De-interleaver, and a Reed Solomon Decoder to perform Trellis decoding, de-interleaving, and Reed Solomon decoding.

[0090] For example, if the digital IF signal outputted from the tuner 131 is the DVB format, the demodulation unit 132 may perform Coded Orthogonal Frequency Division Modulation (COFDMA) modulation.

[0091] Additionally, the demodulation unit 132 may perform channel decoding, and for this, may include a convolution decoder, a De-interleaver, and a Reed Solomon Decoder to perform convolutional decoding, de-interleaving, and Reed Solomon decoding.

[0092] The demodulation unit 132 may output a stream signal TS after performing demodulation and channel decoding, and the stream signal may be a signal into which an image signal, sound signal, or a data signal is multiplexed.

[0093] For example, the stream signal may be an MPEG-2 Transport Stream (TS) into which an MPEG-2 standard image signal and a Dolby AC-3 standard sound signal are multiplexed. In more detail, the MPEG-2 TS may include a 4 byte header and a 184 byte payload.

[0094] Furthermore, the demodulation unit 132 may include an ATSC demodulation unit and a DVB demodulation unit separately according to the ATSC format and the DVB format.

[0095] The stream signal outputted from the demodulation unit 132 may be inputted to the control unit 170. The control unit 180 may output an image to the display unit 180 and a sound to the audio output unit 185 after demultiplexing and processing an image/sound signal.

[0096] The external device interface unit 135 may connect an external device with the image display device 100, and for this, may include an A/V input/output unit (not shown) or a wireless communication unit (not shown).

[0097] The external device interface unit 135 may be used for wire/wireless connection of an external device such as a Digital Versatile Disk (DVD) player, a Bluray player, a game console, a camera, a camcorder, and a computer (such as a notebook computer).

[0098] Moreover, the external device interface unit 135 may deliver an image, sound, or data signal inputted from a connected external into the control unit 170 of the image display

device 100, and may output the image, sound, or data signal processed in the control unit 170 into the connected external device.

[0099] The A/V input/output unit may include a USB terminal, a Composite Video Banking Sync (CVBS) terminal, a component terminal, an S-video terminal (i.e., an analog type), a Digital Visual Interface (DVI) terminal, a High Definition Multimedia Interface (HDMI) terminal, an RGB terminal, and a D-SUB terminal, in order to input an image and sound signal of an external device into the image display device 100.

[0100] Furthermore, the wireless communication unit may perform a short-range wireless communication with another electronic device. For example, the image display device 100 and another electronic device may be connected to a network through communication standards such as Bluetooth, Radio Frequency Identification (RFID), infrared Data Association (IrDA), Ultra Wideband (UWB), ZigBee, and Digital Living Network Alliance (DLNA).

[0101] Moreover, the external device interface unit 135 is connected to various set top boxes through at least one of the above various terminals in order to perform an input/output operation of a set top box.

[0102] In addition, the external device interface unit 135 may receive applications or lists of applications in an adjacent external device, and then may deliver them to the control unit 170 or the storage unit 140.

[0103] The network interface unit 133 may provide an interface for connecting the image display device 100 to a wire/wireless network including an internet network. For example, the network interface unit 133 may include an Ethernet terminal for accessing a wired network or may be connected to a wireless network through a communication standard such as Wireless LAN (WLAN) such as Wi-Fi, Wireless broadband (Wibro), World Interoperability for Microwave Access (Wimax), and High Speed Downlink Packet Access (HSDPA).

[0104] Moreover, the network interface unit 133 may transmit/receive data to/from another user or another electronic device via a connected network or another network linked to the connected network.

[0105] Additionally, the network interface unit 133 may transmit some contents data stored in the image display device 100 to a selected user or electronic device among users or other electronic devices pre-registered in the image display device 100.

[0106] The network interface unit 133 may access a predetermined web page via a connected network or another network linked to the connected network. That is, the network interface unit 133 may access a predetermined web page via a network to transmit/receive data to/from a corresponding sever.

[0107] Then, the network interface unit 133 may receive contents or data provided from a CP or a network operator. That is, the network interface unit 133 may receive contents such as movies, advertisings, games, VODs, and broadcast signals and information thereon, which are provided from a CP or an NP via a network.

[0108] Additionally, the network interface unit 133 may receive update information and update files of a firmware provided from a CP or a network operator, and may transmit data to an internet provider, a CP, or a network operator.

[0109] The network interface unit 133 may select and receive a wanted application from applications open to air via a network.

[0110] The storage unit 140 may store a program for processing and controlling each signal in the control unit 170, and may store the processed image, sound or data signals.

[0111] Moreover, the storage unit 140 may perform a function for temporarily storing image, sound or data signals inputted from the external device interface unit 135 or the network interface unit 133, and may store information on a predetermined broadcast channel through a channel memory function.

[0112] The storage unit 140 may store applications or lists of applications inputted from the external device interface unit 135 or the network interface unit 133.

[0113] The storage unit 140 may include a storage medium having at least one type of a flash memory type, a hard disk type, a multimedia card micro type, a card memory type (for example, SD or XD memory), a RAM type, and an EEPROM type.

[0114] The image display device 100 may play contents files stored in the storage unit 140 such as movie files, still image files, music files, document files, and application files and may provide them to a user.

[0115] The user input interface unit 150 may deliver a signal that a user inputs to the control unit 170 or may deliver a signal from the control unit 170 to a user. For example, the user input interface unit 150 may receive a control signal such as power on/off, channel selection, and screen setting from a remote control device 200 and may process the received control signal

according to various communication methods such as an RF communication method or an IR communication method. Or, the user input interface unit 150 may transmit a control signal from the control unit 170 to the remote control device 200.

[0116] Additionally, the user input interface unit 150 may deliver to the control unit 170 a control signal inputted from a local key (not shown) such as a power key, a channel key, a volume key, and a setting key.

[0117] For example, the user input interface unit 150 may deliver to the control unit 170 a control signal inputted from a sensing unit (not shown) that senses a gesture of a user, and may transmit a signal from the control unit 170 to a sensing unit (not shown). Moreover, the sensing unit (not shown) may include a touch sensor, a sound sensor, a position sensor, and a motion sensor.

[0118] The control unit 170 may demultiplex a stream inputted from the tuner 131, the demodulation unit 132, or the external device interface unit 135, or may process demultiplexed signals in order to generate and output a signal for image or sound output.

[0119] The image signal processed in the control unit 170 is inputted to the display unit 180, and then, is displayed as an image corresponding to a corresponding image signal. Additionally, the image signal processed in the control unit 170 is inputted to an external output device through the external device interface unit 135f.

[0120] The sound signal processed in the control unit 170 may be outputted to the audio output unit 185 as audio. Moreover, the sound signal processed in the control unit 170 is inputted to an external output device through the external device interface unit 135.

[0121] Although not shown in FIG. 6, the control unit 170 may include a demultiplexing unit and an image processing unit. This will be described below with reference to FIG. 10.

[0122] Besides that, the control unit 170 may control overall operations of the image display device 100. For example, the control unit 170 controls the tuner 131 to tune an RF broadcast corresponding to a channel that a user selects or a pre-stored channel.

[0123] Additionally, the control unit 170 may control the image display device 100 through a user command inputted through the user input interface unit 150 or an internal program, and may access a network to download applications that a user wants or lists of applications into the image display device 100.

[0124] For example, the control unit 170 controls the tuner 131 to receive a signal of a selected channel according to a predetermined channel selection command received through the user input interface unit 150, and may process an image, sound, or data signal of the selected channel.

[0125] The control unit 170 may output channel information that a user selects in addition to a processed image or sound signal through the display unit 180 or the audio output unit 185.

[0126] Moreover, the control unit 170 may output an image or sound signal of an external device such as a camera or a camcorder, which is inputted through the external device interface unit 135, through the display unit 180 or the audio output unit 185 according to an external device image play command received through the user input interface unit 150.

[0127] Furthermore, the control unit 170 may control the display unit 180 to display an image, and for example, the control unit 170 may control the display unit 180 to display a broadcast image inputted through the tuner 131, an external input image inputted through the external device interface unit 135, an image inputted through a network interface unit, or an image stored in the storage unit 140. In this case, an image displayed on the display unit 180 may be a still or moving image or a 2D or 3D image.

[0128] Additionally, the control unit 170 may play contents stored in the image display device 100, received broadcast contents, or external input contents inputted from an external. The contents may have various formats such as a broadcast image, an external input image, an audio file, a still image, an accessed web page, and a document file.

[0129] Moreover, although not shown in FIG. 5, the image display device 100 may further include a channel browsing processing unit for generating a thumbnail image corresponding to a channel signal or an external input signal.

[0130] The channel browsing processing unit receives a stream signal TS outputted from the demodulation unit 132, or a stream signal outputted from the external device interface unit 135, and extracts an image from the inputted stream signal to generate a thumbnail image.

[0131] The generated thumbnail image may be inputted to the control unit 170 as it is or after being encoded, or may be inputted to the control unit 170 after being encoded into a stream format.

[0132] The control unit 170 may display a thumbnail list including a plurality of thumbnail images on the display unit 180 by using the inputted thumbnail image. The plurality of thumbnail images in the thumbnail list may be sequentially or simultaneously updated. Accordingly, a user may simply recognize contents of a plurality of broadcast channels.

[0133] The display unit 180 converts an image signal, a data signal, and an OSD signal processed in the control unit 170, or an image signal and a data signal received in the external device interface unit 135 into R, G, and B signals in order to generate a driving signal.

[0134] For this, the display unit 180 may include a PDP, an LCD, an OLED, a flexible display, and a 3D display, or may include a touch screen used as an input device in addition to an output device.

[0135] The audio output unit 185 receives a signal sound-processed in the control unit 170, for example, a stereo signal, a 3.1 channel signal, or a 5.1 channel signal, and then, outputs the signal as sound. For this, various types of speakers may be used.

[0136] Moreover, the image display device 100 may further include a capturing unit (not shown) for capturing an image of a user, and image information obtained by the capturing unit (not shown) may be inputted to the control unit 170.

[0137] In this case, the control unit 170 may detect a user's gesture by combining an image captured through the capturing unit (not shown) and a signal detected through a sensing unit (not shown) or using it separately.

[0138] The power supply unit 190 supplies corresponding power to the image display device 100 generally. For example, the power supply unit 190 may supply power to the control unit 170, the display unit 180, and the audio output unit 185, which may be realized in a form of a System On Chip (SOC).

[0139] For this, the power supply unit 190 may include a converter (not shown) for converting AC power into DC power. If the display unit 180 is implemented using a liquid crystal panel including a plurality of backlight lamps, the power supply unit 190 may further include an inverter (not shown) for PWM operation in order to provide brightness adjustment and dimming driving.

[0140] The remote control device 200 transmits a user input to the user input interface unit 150. For this, the remote control device 200 may use Bluetooth, Radio Frequency (RF) communication, IR communication, Ultra Wideband (UWB), or ZigBee.

[0141] Additionally, the remote control device 200 receives an image, sound, or data signal outputted from the user input interface unit 150, and then, displays the received signal or outputs sound or vibration.

[0142] The image display device 100 may be a fixed digital broadcast receiver that receives at least one of an ATSC type (8-VSB type) digital broadcast, a DVB-T type (COFDM type) digital broadcast, and an ISDB-T type (BST-OFDM type) digital broadcast.

[0143] Moreover, since the image display device 100 of FIG. 5 is just one embodiment of the present invention, some components shown herein may be integrated, added, or omitted according to the specification of the actually-realized image display device 100.

[0144] That is, more than two components may be integrated into one component, or one component may be divided into more than two components, if necessary. Furthermore, a function in each block is used for describing an embodiment of the present invention, and its specific operation or device does not limit the scope of the present invention.

[0145] According to another embodiment of the present invention, unlike FIG. 5, the image display device 100 may receive an image through the network interface unit 133 or the external device interface unit 135 and may play the received image without the tuner 131 and the demodulation unit 132

[0146] For example, the image display device 100 may include an image processing device such as a set top box for receiving broadcast signals or contents according to various network services and a contents playing device for playing contents inputted from the image processing device.

[0147] In this case, a method of providing an external device list according to an embodiment may be performed by the above separated image processing device such as a set top box or the above separate contents playing device including the display unit 180 and the audio output unit 185 in addition to the image display device 100 described with reference to FIG. 5.

[0148] FIG. 6 is a view illustrating a platform structure of an image display device. The platform of the image display device 100 may include OS-based software for performing the above various operations.

[0149] Referring to FIG. 6A, the platform of the image display device 100 as a separate platform includes a Legacy System platform 400 and a smart system platform 405, which are separately designed.

[0150] An OS kernel 410 may be commonly used in the Legacy System platform 400 and the smart system platform 405. The Legacy System platform 400 may include a driver 420, a Middleware 430, and an Application 450 on the OS kernel 410.

[0151] Moreover, the smart system platform 405 may include a Library 435, a Framework 440, and an application 455 on the OS kernel 410.

[0152] The OS kernel 410 as a core of an operating system may provide hardware driver driving when the image display device 100 is driven, the security of hardware and a processor in the image display device 100, efficient management of a system resource, memory management, an interface for hardware by hardware abstraction, a multi processor, schedule management according to a multi processor, and power management.

[0153] For example, a hardware driver in the OS kernel 410 may include at least one of a display driver, a Wi-Fi driver, a Bluetooth driver, a USB driver, an audio driver, a power management driver, a binder driver, and a memory driver.

[0154] Moreover, the hardware driver in the OS kernel 410 as a driver for a hardware device in the OS kernel 410 may include a character device driver, a block device driver, and a network device driver.

[0155] Furthermore, the block device driver may include a buffer for storing a unit size as data are transmitted by a specific block unit, and the character device driver may not include the buffer as data are transmitted by a basic data unit, i.e., a character unit.

[0156] The OS kernel 410 may be implemented with various OS based kernels such as Unix base (Linux) kernel and Window base kernel, and may be available for other electronic devices as an open OS.

[0157] The driver 420 is disposed between the OS kernel 410 and the middleware 430, and drives a device in order for operations of the middleware 430 and the application 450.

[0158] For example, the driver 420 may include drivers for a micom, a display module, a Graphic Processing Unit (GPU), a Frame Rate Converter (FRC), a General Purpose Input/Output Pin (GPIO), an HDMI, a System Decoder or demultiplexer (SDEC), a Video Decoder (VDEC), an Audio Decoder (ADEC), a Personal Video Recorder (PVR), an Inter-Integrated Circuit (I2C) in the image display device 100. The above drivers may operate in linkage with a hardware driver in the OS kernel 410.

[0159] Additionally, the driver 420 may further include a driver for a remote control device 200, for example, a space remote controller. The driver for a space remote controller may be included in the OS kernel 410 or the middleware 430 in addition to the driver 420.

[0160] The middleware 430 is disposed between the OS kernel 410 and the application 450, and serves as a medium to exchange data between other hardware or software. Accordingly, the standardized interface may be available, and various environmental supports and interworking with other tasks having different systems may also be available.

[0161] For example, the middleware 430 in the legacy system platform 400 may include a Multimedia and Hypermedia information coding Experts Group (MHEG) middleware and an Advanced Common Application Platform (ACAP) middleware, and may further include a PSIP or SI middleware (i.e., a broadcast information related middleware), and a DLNA middleware (i.e., a peripheral communication related middleware).

[0162] Additionally, the application 450 on the middleware 430, i.e., the application 450 in the legacy system platform 400, may include a User Interface Application for various menus in the image display device 100.

[0163] The application 450 on the middleware 430 may be edited by a user's choice and may be updated via a network. Through the application 450, it is possible to enter a wanted menu in various user interfaces according to an input of a remote control device while watching a broadcast image.

[0164] Moreover, the application 450 in the legacy system platform 400 may further include at least one of a TV guide application, a Bluetooth application, a reservation application, a Digital Video Recorder (DVR) application, and a hotkey application.

[0165] Moreover, the library 435 in the smart system platform 405 is disposed between the OS kernel 410 and the framework 440, and forms a base of the Framework 440. For example, the library 435 may include a Secure Socket Layer (SSL) (i.e., a security related library), a WebKit (i.e., a web engine related library), a libc (i.e., a c library), and a Media Framework (i.e., a media related library such as video formats and audio formats. The library 435 may be programmed with C or C++, so that it may be exposed to developer through the framework 440.

[0166] The library 435 may include the runtime 437 having a core java library and a Virtual Machine (VM). The runtime 437 may form a basic of the framework 440 in addition to the library 435.

[0167] The VM may perform a plurality of instances, i.e., multitasking. Furthermore, according to each application in the application 455, each VM may be allocated and executed. In this case, a Binder driver (not shown) in the OS kernel 410 may operate for schedule adjustment or interconnect between plurality of instances.

[0168] In addition, the binder driver and the runtime 437 may connect a java-based application with a C-based library. The library 436 and the runtime 437 may correspond to the middleware of the legacy system.

[0169] Moreover, the framework 440 in the smart system platform 405 includes a program, which is a base of an application in the application 455. The framework 440 is compatible with any application. Its component may be reused, moved, or replaced.

[0170] The framework 440 may include a support program, i.e., a program for binding components of other software. For example, the framework 440 may include a resource manager, an activity manager related to the activity of application, a notification manager, and a content provider for summarizing sharing information between applications.

[0171] The application 455 on the framework 440 includes various programs that are driven in the image display device 100 to be displayed. For example, the application 455 may include a Core Application that has at least one of email, short message service (SMS), calendar, map, and browser.

[0172] Furthermore, the above framework 440 or application 450 may be programmed with JAVA.

[0173] In addition, the application 455 may be divided into an application 460 stored in the image display device 100 and cannot be deleted by a user and an application 475 downloaded via a network and stored and freely installed or deleted by a user.

[0174] Through applications in the application 455, internet phone service, Video On Demand (VOD) service, web album service, Social Networking Service (SNS), Location Based Service (LBS), map service, web search service, and application search service may be provided. Additionally, various functions such as games and scheduling may be performed.

[0175] Moreover, as shown in FIG. 6B, the platform of the image display device 100 as an integrated platform may include an OS kernel 510, a driver 520, a Middleware 530, a Framework 540, and an Application 550.

[0176] When compared to FIG. 6A, there are differences that the library 435 is omitted and the application 550 is an integrated layer in the platform shown in FIG. 6B. Besides that, the driver 520 and the framework 540 are the same as those in FIG. 6A.

[0177] The platforms shown in FIGS. 6A and 6B may be generally available for various electronic devices in addition to the image display device 100, and may be stored in or loaded into the storage unit 140 or control unit of FIG. 5, or an additional processor (not shown).

[0178] Moreover, the platform may be stored in or installed into the SI&metadata DB 711, UI manager 714, and service manager 713 of FIG. 4, and may further include an additional application processor (not shown) to execute the application.

[0179] Furthermore, a method of providing an external device list according to an embodiment, which will be described in detail below, may be implemented with a computer executable program.

[0180] FIG. 7 is a view illustrating a method of providing an external device list through a remote control device according to an embodiment.

[0181] As shown in FIG. 7A, a pointer 205 corresponding to the remote control device 200 is displayed on a display unit 180.

[0182] A user may move the remote control device 200 up and down and left and right, or may rotate it. The pointer 205 displayed on the display unit 180 of the image display device corresponds to the movement of the remote control device 200. Since the corresponding pointer 205 moves and is displayed corresponding to the movement on 3D space as shown in the drawing, the remote control device 200 may be called a space remote controller.

[0183] As shown in FIG. 7B, when a user moves the remote control device 200 to the left, the pointer 205 displayed on the display unit 180 of the image display device moves to the left in correspondence to the movement of the remote control device 200.

[0184] Information on the movement of the remote control device 200, which is sensed by a sensor of the remote control device 200, is transmitted to the image display device. The image display device may calculate the coordinates of the pointer 205 from the information

on the movement of the remote control device 200. The image display device may display the pointer 205 in correspondence to the calculated coordinates.

[0185] FIG. 7C illustrates the case that a user moves the remote control device 200 away from the display unit 180 while a specific button in the remote control device 200 is pressed. By doing so, a selected area in the display unit 180 corresponding to the pointer 205 may be zoomed in and enlarged.

[0186] On the contrary, when a user moves the remote control device 200 closer to the display unit 180, a selected area on the display unit 180 corresponding to the pointer 205 may be zoomed out and reduced.

[0187] On the other hand, when the remote control device 200 becomes far from the display unit 180, a selected area may be zoomed out, and when the remote control device 200 becomes closer to the display unit 180, a selected area may be zoomed in.

[0188] Moreover, while a specific button in the remote control device 200 is pressed, up/down and left/right movements may be disregarded. That is, when the remote control device 200 becomes closer to or away from the display unit 180, up/down and left/right movements may be disregarded but only the back and forth movements may be recognized. While a specific button in the remote control device 200 is not pressed, the pointer 205 moves in correspondence to the up/down and left/right movements of the remote control device 200.

[0189] Moreover, the moving speed or moving direction of the pointer 205 may correspond to that of the remote control device 200.

[0190] Furthermore, the pointer of this specification means an object displayed on the display unit 180 in correspondence to an operation of the remote control device 200. Accordingly, besides an arrow shape displayed as the pointer 205 in the drawing, the pointer 205 may have various shapes of objects. For example, the pointer 205 conceptually may include a dot, a cursor, and a thick outline. Moreover, the pointer 205 may be displayed on the display unit 180, corresponding to a point on the x-axis and the y-axis, and also a plurality of points such as a line and a surface.

[0191] FIG. 8 is a block diagram illustrating a configuration of a remote control device according to an embodiment. The remote control device 200 may include a wireless communication unit 225, a user input unit 235, a sensor unit 240, an output unit 250, a power supply unit 260, a storage unit 270, and a control unit 280.

[0192] Referring to FIG. 8, the wireless communication unit 225 transmits/receives a signal to/from an arbitrary one of the image display devices according to the above-mentioned embodiments.

[0193] The remote control device 200 includes an RF module 221 for transmitting/receiving a signal to/from the image display device 100 according to RF communication standards, and an IR module 223 for transmitting/receiving a signal to/from the image display device 100 according to IR communication standards.

[0194] Moreover, the remote control device 200 transmits a signal containing information on the movement thereof to the image display device 100 through the RF module 221.

[0195] Moreover, the remote control device 200 may receive a signal that the image display device 100 transmits through the RF module 221, and may transmit commands on power on/off, channel change, and volume change to the image display device 100 through the IR module 223, if necessary.

[0196] The user input unit 235 may be configured with a keypad, a button, a touch pad, or a touch screen. A user may input commands related to the image display device 100 to the remote control device 200 by manipulating the user input unit 235. If the user input unit 235 has a hard key button, a user may input commands related to the image display device 100 to the remote control device 200 through a push operation of the hard key button.

[0197] If the user input unit 235 has a touch screen, a user may input commands related to the image display device 100 to the remote control device 200 by touching a soft key of the touch screen. Moreover, the user input unit 235 may include various kinds of input means that a user manipulates such as a scroll key and a jog key, and this embodiment does not limit the scope of the present invention.

[0198] The sensor unit 240 may include a gyro sensor 241 or an acceleration sensor 243. The gyro sensor 241 may sense information on the movement of the remote control device 200.

[0199] For example, the gyro sensor 241 may sense information on the operation of the remote control device 200 on the bases of x, y, and z axes and the acceleration sensor 243 may sense information on the moving speed of the remote control device 200. Furthermore, the remote control device 200 may further include a distance measurement sensor that senses the

distance between the remote control device 200 and the display unit 180 of the image display device 100.

[0200] The output unit 250 may output an image or sound signal corresponding to the manipulation of the user input unit 235 or a signal transmitted from the image display device 100. A user may recognize the manipulation of the user input unit 235 or the control of the image display device 100 through the output unit 250.

[0201] For example, the output unit 250 may include an LED module that is turned on/off, a vibration module 253 that vibrates, a sound outputting module 255 that outputs sound, or a display module 257 that outputs an image, when the user input unit 235 is manipulated or a signal is transmitted to or received from the image display device 100 through the wireless communication unit 225.

[0202] Moreover, the power supply unit 260 supplies power to the remote control device 200, and stops supplying power to the remote control device 200 when the remote control device 200 does not move for a predetermined time, so that power waste may be reduced. The power supply unit 260 may restart to supply power after a predetermined key in the remote control device 200 is manipulated.

[0203] The storage unit 270 may store various kinds of programs and application data necessary for controls or operations of the remote control device 200. If the remote control device 200 wirelessly transmits and receives a signal through the image display device 100 and the RF module 221, the remote control device 200 and the image display device 100 may transmit/receive a signal in a predetermined frequency band.

[0204] The control unit 280 of the remote control device 200 may store in the storage unit 270 information on a frequency band for wirelessly transmitting/receiving a signal to/from the image display device 100 paired with the remote control device 200, and may refer to the stored information.

[0205] The control unit 280 controls general matters related to a control of the remote control device 200. The control unit 280 may transmit to the image display device 100 a signal corresponding to a predetermined key manipulation of the user input unit 235 or a signal corresponding to the movement of the remote control device 200 sensed by the sensing unit 240 through the wireless communication unit 225.

[0206] FIG. 9 is a view illustrating a configuration of a home screen displayed on an image display device according to an embodiment.

[0207] The configuration of the home screen shown in FIG. 9 may be an example of a basic screen of the image display device 100. Such a screen may be set with an initial screen when power is on or starting from a standby mode, or a basic screen by an operation of a home key equipped in the remote control device 200.

[0208] Referring to FIG. 9, the home screen 600 may include a card object region. The card object region may include a plurality of card objects 610, 620, and 630, which are classified by the sources of contents.

[0209] A card object BROADCAST 610 for displaying a broadcast image, a card object NETCAST 620 for displaying a CP list, and a card object APP STORE for displaying a list of applications provided are shown in the drawing.

[0210] Moreover, as a card object that is not displayed on the display unit 180 and is disposed on a hidden area 601 but is replaced and displayed when a card object is moved, a card object CHANNEL BROWSER 640 for displaying a thumbnail list of broadcast channels, a card object TV GUIDE 650 for displaying a broadcast guide list, a card object RESERVATION/REC 660 for displaying a reservation list, a card object MY MEDIA 670 for displaying a media list of a device disposed in or connected to the image display device, and a card object TV GUIDE2 680 for displaying a broadcast guide list may be shown in the drawing.

[0211] The card object BROADCAST 610 for displaying a broadcast image may include a broadcast image 615 received through the tuner 110 or the network interface unit 130, an object 612 for displaying corresponding broadcast image related information, an object 617 for displaying an external device, and a setup object 618.

[0212] Since the broadcast image 615 is displayed as a card object and its size is fixed by a locking function, a user may continuously watch a broadcast image.

[0213] The broadcast image 615 may have a size that is changed by the manipulation of a user. For example, the size of the corresponding broadcast image 615 may be enlarged or reduced by drag using the pointer 205 of the remote control device 200. By such an enlargement or reduction, the number of card objects displayed on the display unit 180 may be two or four instead of three in the drawing.

[0214] Moreover, when the broadcast image 615 in the card object is selected, it may be displayed on the display unit 180 in a full screen.

[0215] The object 612 for displaying corresponding broadcast image related information may include a channel number DTV7-1, a channel name YBC HD, a broadcast program title Oh! Lady, and a broadcast time pm 08:0008:50. By doing so, a user may intuitively recognize information on the broadcast image 615.

[0216] When the object 612 for displaying corresponding broadcast image related information is selected, related EPG information may be displayed on the display unit 180.

[0217] Moreover, an object 602 for displaying a date 03.24, a day of the week THU, and a current time pm 08:13 may be displayed on the card object 610 for displaying a broadcast image. By doing so, a user may intuitively recognize time information.

[0218] An object 617 for displaying an external device may display an external device connected to the image display device 100. For example, when the object 617 for displaying an external device is selected, a list of external devices connected to the image display device 100 may be displayed.

[0219] The setup object 618 may be used for inputting various settings of the image display device 100. For example, various settings such as image setting, audio setting, screen setting, reservation setting, pointing setting of the remote control device 200, and network setting may be made.

[0220] Moreover, the card object 620 for displaying a CP list may include a card object title NETCAST 622 and a CP list 625. In the drawing, Yakoo, Metflix, weather.com, Picason, and My tube are shown as CPs in the CP list 625, but various settings are possible.

[0221] When the card object title 622 is selected, the corresponding card object 620 may be displayed on the display unit 180 in a full screen.

[0222] Moreover, when a predetermined CP in the CP list 625 is selected, a screen including a contents list that a corresponding CP provides may be displayed on the display unit 180.

[0223] The card object 630 for displaying a list of applications provided may include the card object title APP STORE 632 and the application list 635. The application list 635 may be a list, which is aligned being classified by each item in an application store. In the drawing,

the list may be displayed being aligned in a popular order HOT and the latest order NEW, but the present invention is not limited thereto. That is, various examples are available.

[0224] When the card object title 632 is selected, the corresponding card object 630 may be displayed on the display unit 180 in a full screen.

[0225] Moreover, when a predetermined application item in the application list 635 is selected, a screen for providing information on a corresponding application may be displayed on the display unit 180.

[0226] A login item 627, a help item 628, and an exit item 629 may be displayed on the card objects 620 and 630.

[0227] The login item 627 may be used for accessing an application store or logging in a network connected to an image display device. The help item 628 may be used for the help during an operation of the image display device 100. The exit item 629 may be used for exiting from a corresponding home screen. At this point, a broadcast image being received may be displayed in a full screen.

[0228] An object for displaying the number of entire card objects may be displayed below the card objects 620 and 630. The object may display the number of entire card objects, of course, the number of card objects among the entire card objects displayed on the display unit 180.

[0229] Moreover, the card object 640 for displaying a thumbnail list of a broadcast channel may include a card object title CHANNEL BROWSER 642 and a thumbnail list 645 of a broadcast channel. Broadcast channels received sequentially are displayed as thumbnail images in the drawing, but the present invention is not limited thereto. That is, a video is possible. The thumbnail list may include a thumbnail image and channel information on a corresponding channel. By doing so, a user may intuitively recognize content of a corresponding channel.

[0230] Such a thumbnail image may be a thumbnail image on a preference channel that a user registers in advance or a thumbnail image on a channel after or before the broadcast image 615 in the card object 610. Moreover, eight thumbnail images are shown in the drawing, but various settings are possible. Additionally, a thumbnail image in a thumbnail list may be updated.

[0231] When the card object title 642 is selected, the corresponding card object 640 may be displayed on the display unit 180 in a full screen. That is, content on a thumbnail list may be displayed on the display unit 180.

[0232] Moreover, when a predetermined thumbnail image in the thumbnail list 645 of a broadcast channel is selected, a broadcast image corresponding to a corresponding thumbnail image may be displayed on the display unit 180.

[0233] The card object 650 for displaying a broadcast guide list may include a card object title TV GUIDE 652 and a broadcast guide list 655. The broadcast guide list 655 may be a list for broadcast programs or broadcast images of other channels after the broadcast image 615 in the card object 610, but the present invention is not limited thereto. That is, various examples are available.

[0234] Additionally, when the card object title 652 is selected, the corresponding card object 650 may be displayed on the display unit 180 in a full screen.

[0235] Moreover, when a predetermined broadcast item in the broadcast guide list 655 is selected, a broadcast image corresponding to a corresponding broadcast item may be displayed on the display unit 180, or broadcast information corresponding to a corresponding broadcast item may be displayed on the display unit 180.

[0236] The card object 660 for displaying a broadcast reservation list or a recording list may include a card object title RESERVATION/REC 662 and a broadcast reservation list or recording list 665. The broadcast reservation list or recording list 665 may be a list including broadcast items that a user reserves in advance or broadcast items recorded according thereto. In the drawing, a thumbnail image is displayed by each corresponding item, but various examples are available.

[0237] Additionally, when the card object title 662 is selected, the corresponding card object 660 may be displayed on the display unit 180 in a full screen.

[0238] Furthermore, a broadcast item set in advance for reservation or a broadcast item recorded in the broadcast reservation list or recording list 665 is selected, broadcast information on a corresponding broadcast or a recorded broadcast image may be displayed on the display unit 180.

[0239] The card object 670 for displaying a media list may include a card object title MY MEDIA 672 and a media list 675. The media list 675 may be a list of media stored in the

image display device 100 or stored in a device connected to thereto. Video, still images, and audio are shown as an example in the drawing, but besides that, various examples such as text documents and e-book documents are available.

[0240] Additionally, when the card object title 672 is selected, the corresponding card object 670 may be displayed on the display unit 180 in a full screen.

[0241] Moreover, when a predetermined media item in the media list 675 is selected, a screen corresponding to a corresponding media may be displayed on the display unit 180.

[0242] The card object TV GUIDE 680 for displaying a broadcast guide list may include a card object title TV GUIDE 682 and a broadcast guide list 685. The broadcast guide list 685 may be a guide list for each broadcast type. A list for each broadcast type is shown in the drawing by classifying broadcasts into entertainments such as drama, news, or sports, but various settings are available. That is, the broadcast guide list may be a list for each type such as drama, movie, news, sports, and animation. By doing so, a user may confirm a guide list that classifies broadcasts into each genre

[0243] When the card object title 682 is selected, the corresponding card object 680 may be displayed on the display unit 180 in a full screen.

[0244] Moreover, when a predetermined broadcast item in the broadcast guide list 685 is selected, a screen corresponding to a corresponding broadcast image may be displayed on the display unit 180.

[0245] The card objects 620 and 630 displayed on the display unit 180 and the card objects 640, 650, 660, 670, and 680 disposed on the hidden area 601 and not displayed on the display unit 180 may be interchangeable by an input for moving a card object.

[0246] That is, at least one of the card objects 620 and 630 displayed on the display unit 180 may be moved on the hidden area 601, and at least one of the card objects 640, 650, 660, 670, and 680 disposed on the hidden area 601 may be displayed on the display unit 180.

[0247] Furthermore, the home screen 600 of the image display device 100 may further include a card object for displaying information on software upgrade.

[0248] Hereinafter, referring to FIGS. 10 to 16, a method of providing an external device list according to a first embodiment will be described. FIG. 10 is a flowchart illustrating the method of providing an external device list according to the first embodiment. FIGS. 11 to 16

are views illustrating a screen that provides an external device list of an image display device according to the first embodiment.

[0249] Referring to FIGS. 10 to 16, first, the control unit 170 displays a plurality of external device icons, which allows external devices to be connected to the image display device 100, on the display unit 180 of the image display device 100 in operation S700. Here, a plurality of external devices as external devices connected to the image display device 100 via a wired/wireless network may include a Digital Versatile Disc (DVD) player, a DVD recorder, a Blu-ray Disc (BD) player, a set top box, a digital TV, a personal computer (PC), a camera, a camcorder, an HDD player, and a memory card. However, they are just examples of external devices. Thus, a device having a built-in recording medium for recording a file may serve as an external device.

[0250] As shown in FIG. 11, a plurality of external device icons 820 representing a plurality of external devices are displayed on the full screen 810 of the display unit 180. Moreover, the control unit 170 determines which external device icons 820 are connected to the image display device 100 in order to display specific symbols 830a, 830b, and 830c on the external device icons that are being connected to the image display device 100. Therefore, external device icons that are not being connected to the image display device 100 are distinguished. Here, displaying a specific symbol on an external device icon is used as one example of a method of distinguishing icons from each other, but the present invention is not limited thereto. That is, any one of letters, symbols, colors, and flashing lights may be used for distinction.

[0251] The control unit 170 determines which one of the plurality of external device icons displayed on the display unit 180 has a pointer thereon in operation S710.

[0252] As shown in FIG. 12, when the pointer 850 is positioned on the first external device icon 840 among the plurality of external device icons 820, the control unit 170 may display an image signal 860, which is inputted from an external device related the first external device icon 840 (for example, a BD player), on the full screen 810 of the image display device 100 in operation S720. Through this, a user could confirm an image signal in advance, which is inputted from an external device before switching the input of the external device, so that the user's convenience may be improved.

[0253] Moreover, when the pointer 850 is positioned on the first external device icon 840 among the plurality of external device icons 820, the first external device icon 840 having the pointer 850 thereon may be highlighted.

[0254] Moreover, as shown in FIG. 13, an image signal 860 of an external device related to the first external device icon 840 having the pointer 850 thereon may be displayed on the area where the first external device icon 840 is displayed.

[0255] Moreover, as shown in FIG. 14, when the pointer 850 is positioned on the first external device icon 840, a predetermined popup window 861 is displayed on an area adjacent to the first external device icon 840, and an image signal 860 of an external device related to the first external device icon 840 may be displayed on the popup window 861.

[0256] As shown in FIG. 15, when the pointer 850 is positioned on one of the plurality of external device icons 820 (for example, the second external device icon 841 representing a PC), the control unit 170 displays the image signal 860, which is inputted from an external device (for example, the PC) related to the first external device icon 840 having the pointer 850 thereon, on the full screen 810 of the image display device. In this state, when an input is received to select the second external device icon 841 in operation S730, as shown in FIG. 16, a popup window 870 that asks whether to select an input switch to a PC (i.e., a second external device) is displayed on the full screen of the image display device 100.

[0257] Then, if the input switch to the external device is selected through the popup window 870, the input is switched to the PC (i.e., the second external device) in operation S740.

[0258] Accordingly, as shown in FIG. 17, an image signal 880 of the PC (i.e., the selected second external device) is displayed on the full screen 810 of the image display device 100.

[0259] Furthermore, the remote control device 200 that controls the image display device 100 may control the input-switched external device. This will be described in more detail.

[0260] The remote control device 200 transmits a control command for controlling an external device to the input-switched external device through the image display device 100 in operation S750. In response to the transmitted control command, a control command result of the external device is displayed on the full screen 810 of the image display device 100.

[0261] For example, as shown in FIG. 17, while the image signal 880 of the second external device is displayed on the display unit 180, in case that a control command of the

remote control device 200 is transmitted to a corresponding external device, the pointer 850 displayed on the image signal 880 of the second external device may be manipulated in response to the control command.

[0262] By doing so, the remote control device 200 that controls the image display device 100 may identically control the input-switched external device, so that the user's convenience may be improved.

[0263] According to embodiments, since an image signal inputted from an external device is provided in advance before input switching, ease of use and service efficiency may be improved.

[0264] The method of providing an external device list according to the present invention may be programmed to be executed in a computer and may be stored on a computer readable recording medium. Examples of the computer readable recording medium include read-only memory (ROM), random-access memory (RAM), CD-ROMs, magnetic tapes, floppy disks, and optical data storage devices.

[0265] The computer readable recording medium can also be distributed over network coupled computer systems so that the computer readable code is stored and executed in a distributed fashion. Also, functional programs, codes, and code segments for accomplishing the present invention can be easily construed by programmers skilled in the art to which the present invention pertains.

[0266] Moreover, although the preferred embodiments of the present invention are described above, the present invention is not limited the above-mentioned specific embodiments. It will be understood by those skilled in the art that various changes in forms and details may be made therein without departing from the spirit and scope of the invention. Also, these modified embodiments should be understood without departing from the technical scope or prospect of the present invention.

What is claimed is:

1. An image display device comprising:
 - a display;
 - a first external interface configured to receive a first image signal input from a first external device connected to the image display device;
 - a second external interface configured to receive a second image signal input from a second external device connected to the image display device; and
 - a controller coupled with the display, the first external interface and the second external interface, the controller configured to:
 - display a plurality of external device icons, on a first area of the display, wherein the plurality of external device icons include a first external device icon corresponding to the first external device and a second external device icon corresponding the second external device, and
 - display, on a second area of the display, a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device,
 - wherein the controller is further configured to display a symbol representing that the first external device or the second external device is connected to the display device.
2. The image display device according to claim 1, wherein the controller is further configured to:
 - highlight the first external device icon in response to the first external device icon being selected, and
 - highlight the second external device icon in response to the second external device icon being selected.
3. The image display device according to claim 1, wherein the first image displayed on the display is simultaneously displayed with the plurality of external device icons while the first external device icon is selected.

4. The image display device according to claim 1, wherein the first and second external device icons are selectable via a cursor positioned on the first and second external device icons, respectively.

5. The image display device according to claim 4, wherein the cursor is controlled by a remote controller interfacing with the image display device.

6. The image display device according to claim 1, wherein the first image is an image which is currently displayed on the first external device.

7. The image display device according to claim 1, wherein the controller is further configured to display a default image identifying the first external interface.

8. The image display device according to claim 1, wherein the controller is further configured to display the symbol on the first external device icon or the second external device icon.

9. The image display device according to claim 1, wherein the controller is further configured to:

display, on the second area of the display, a second image based on the second image signal in response to the second external device icon being selected if the second external device is connected to the image display device.

10. The image display device according to claim 1, wherein the controller is further configured to:

transmit a control command for controlling the first external device to the first external device, and

display an execution result of the control command on the display.

ABSTRACT OF THE DISCLOSURE

An image display device including a display; a first external interface configured to receive a first image signal input from a first external device connected to the image display device; a second external interface configured to receive a second image signal input from a second external device connected to the image display device; and a controller coupled with the display, the first external interface and the second external interface, the controller configured to display a plurality of external device icons, on a first area of the display, wherein the plurality of external device icons include a first external device icon corresponding to the first external device and a second external device icon corresponding the second external device, and display, on a second area of the display, a first image based on the first image signal in response to the first external device icon being selected if the first external device is connected to the image display device. The controller is further configured to display a symbol representing that the first external device or the second external device is connected to the display device.

FIG.1

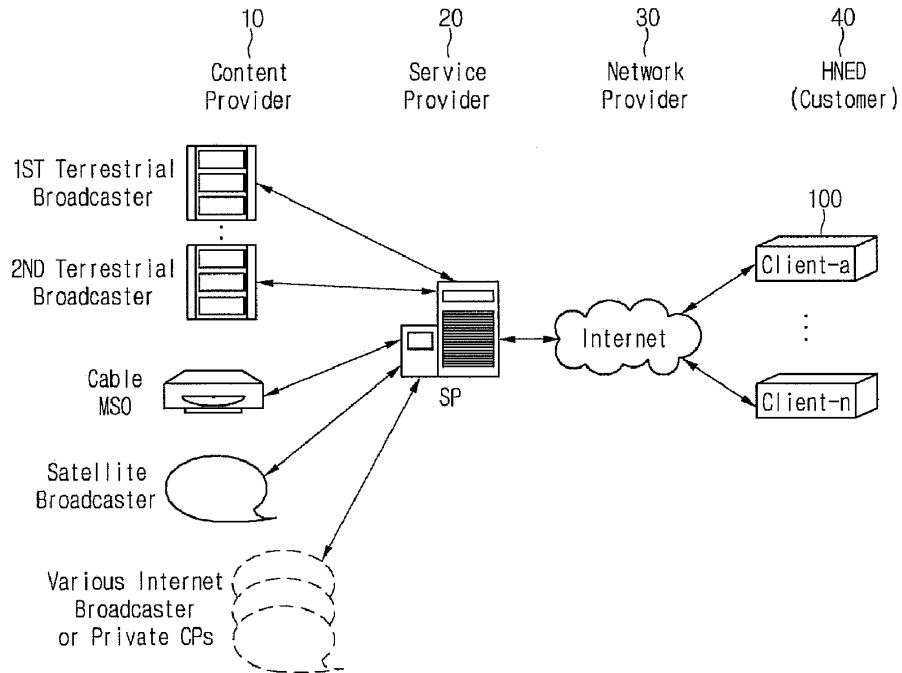


FIG.2

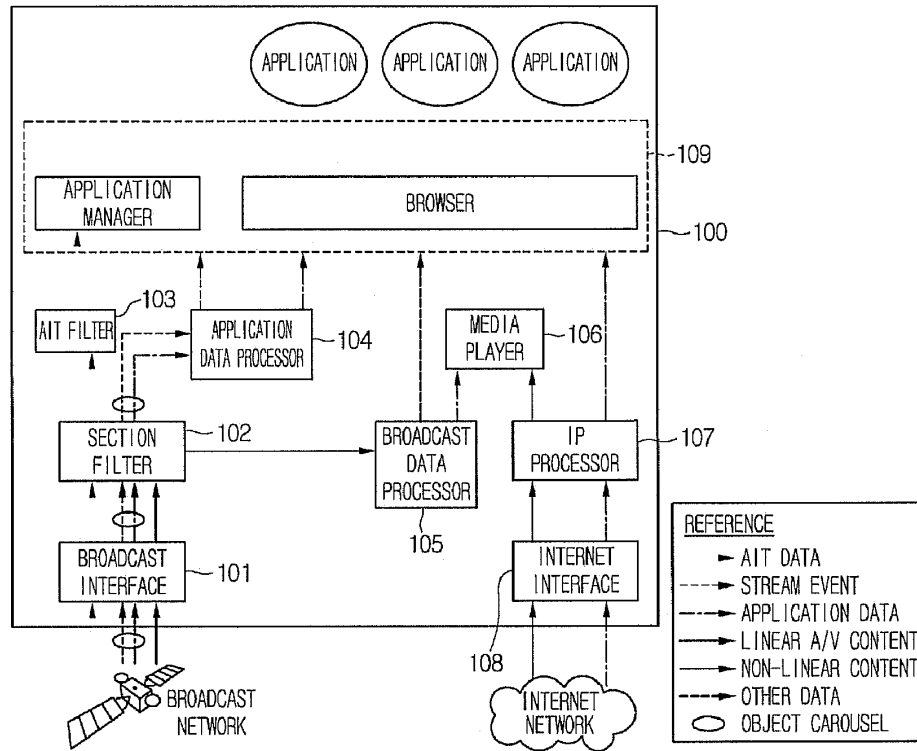


FIG.3

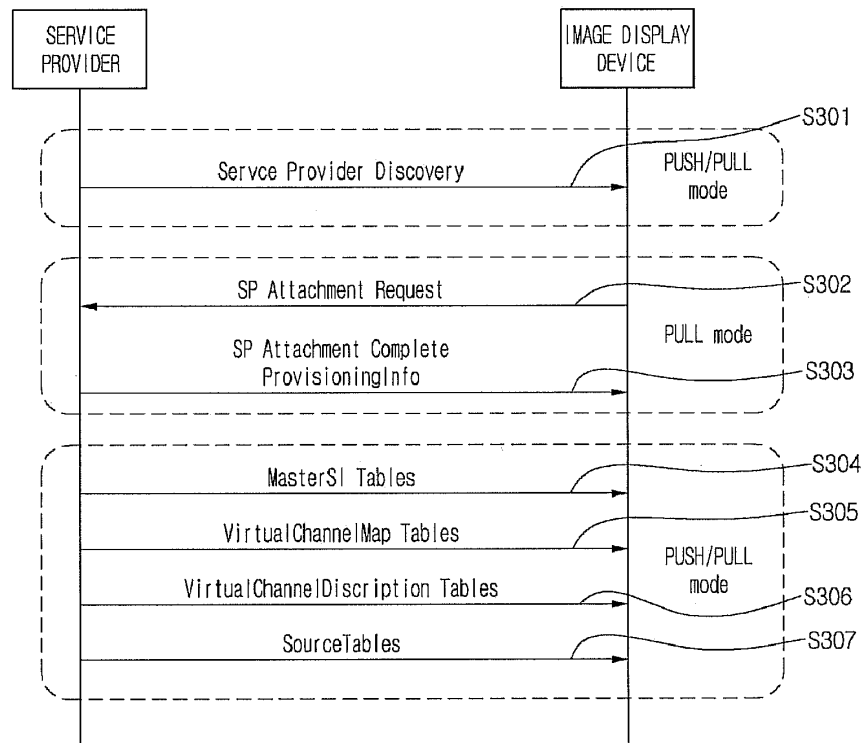
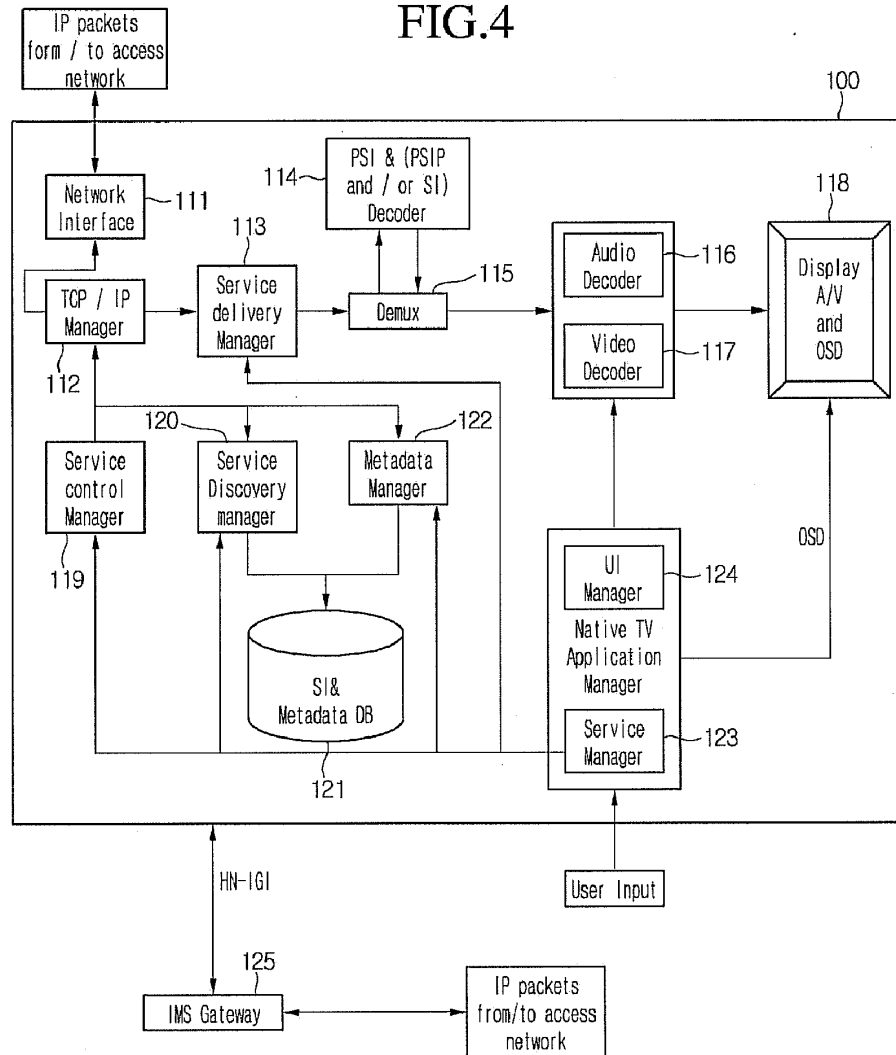


FIG.4



100

FIG.5

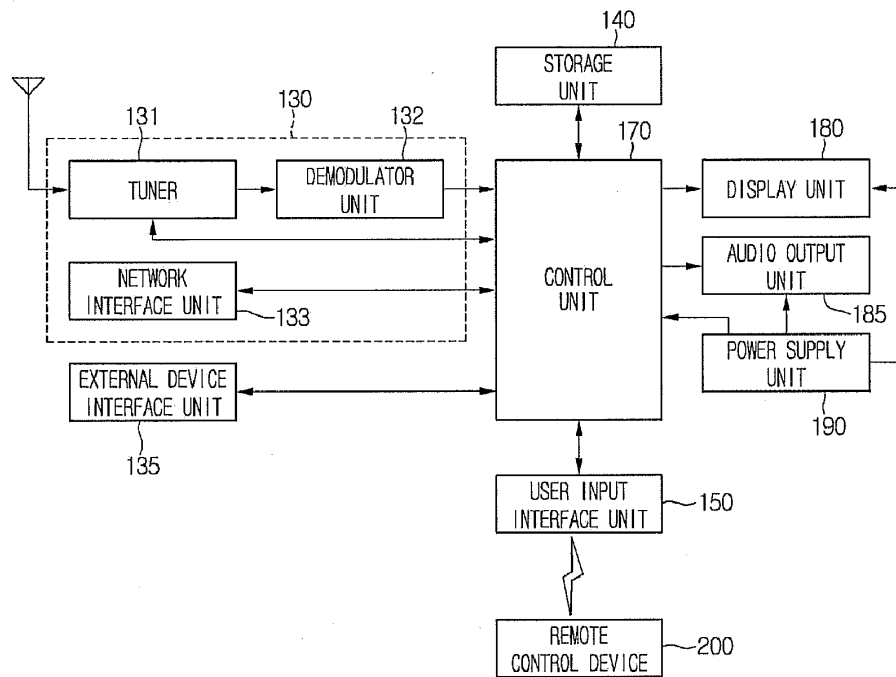
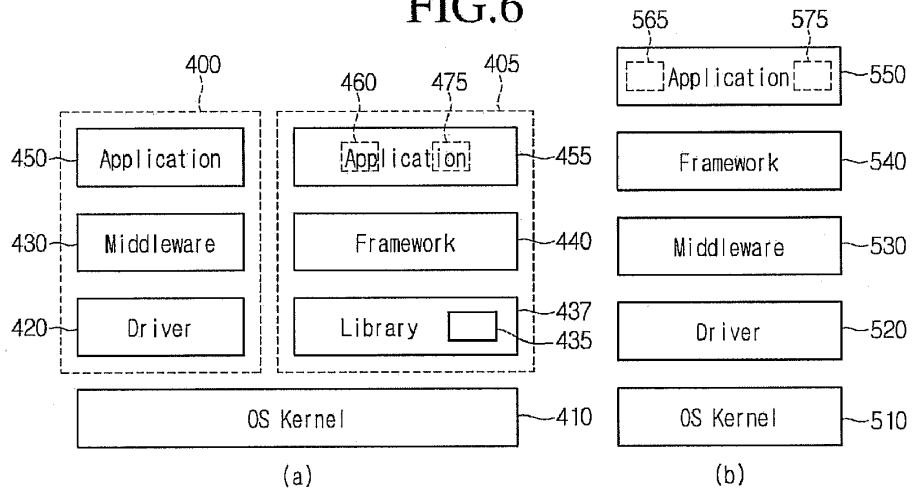


FIG.6



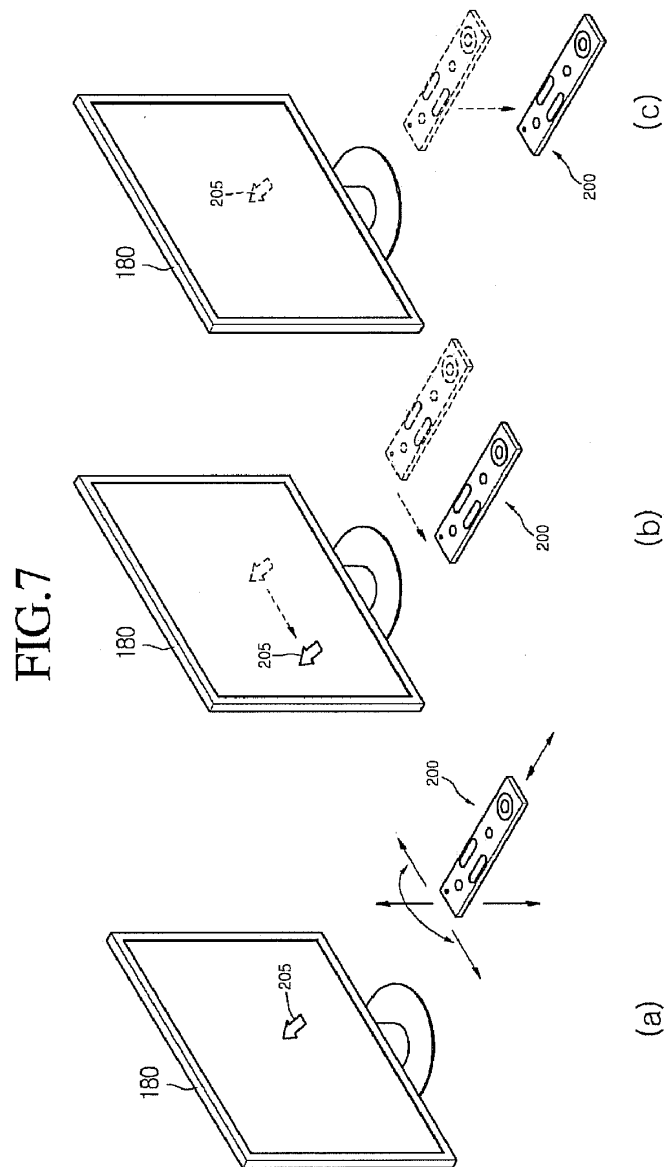


FIG. 8

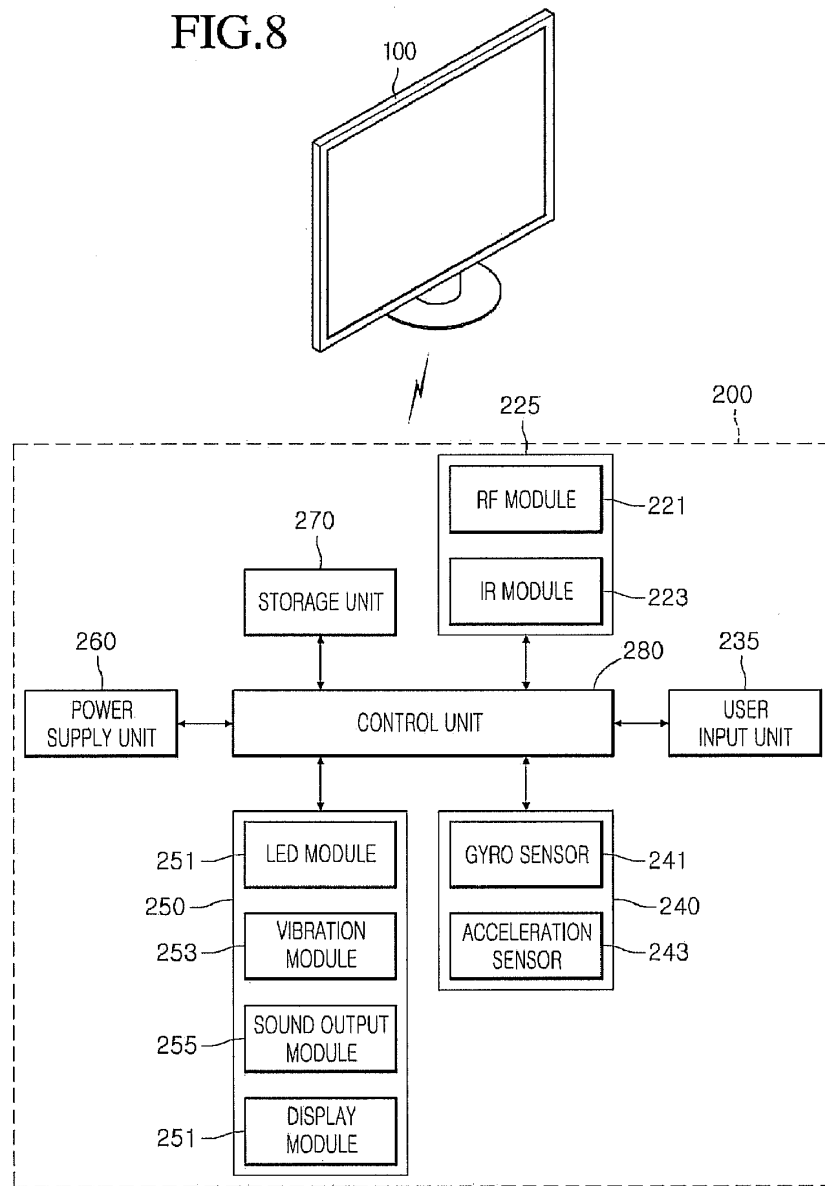


FIG. 9

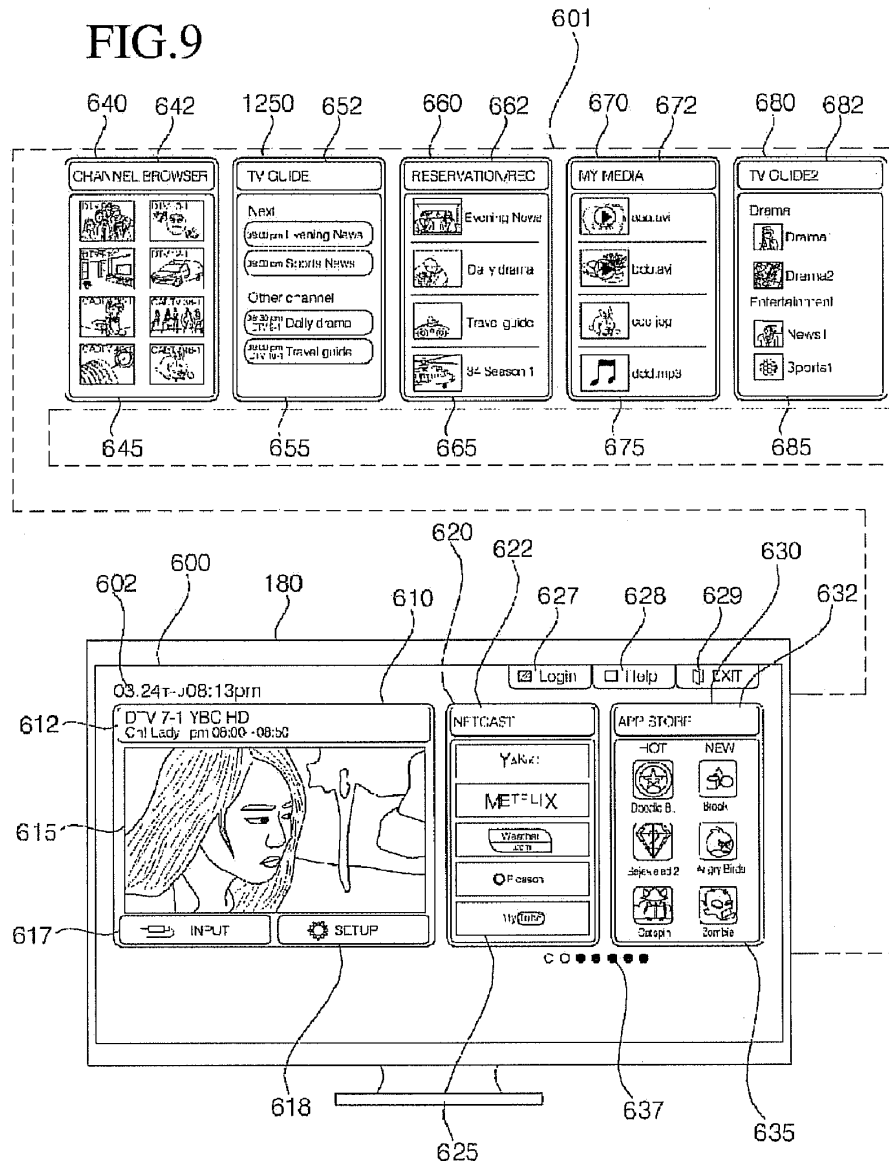


FIG.10

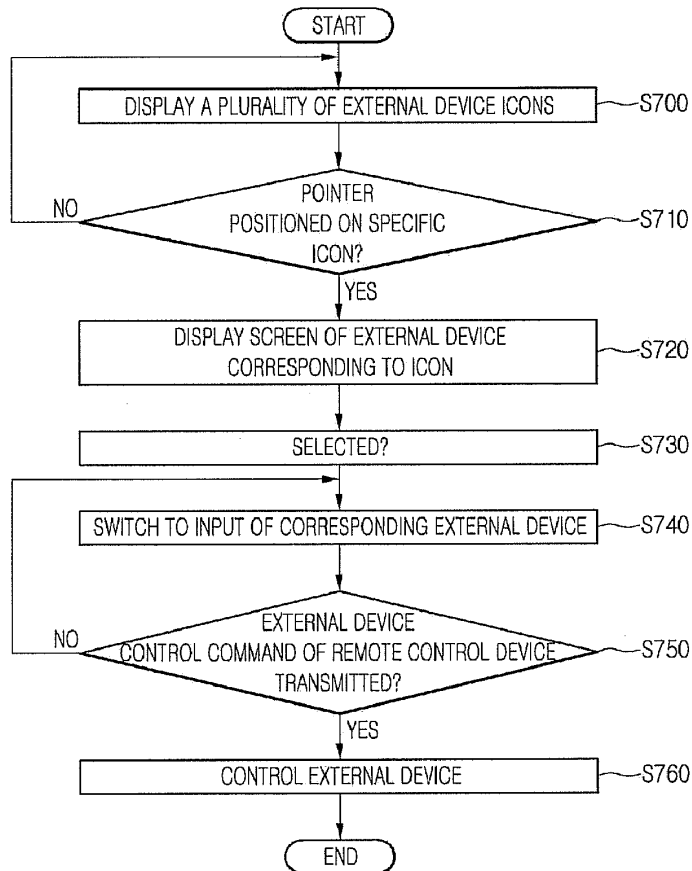
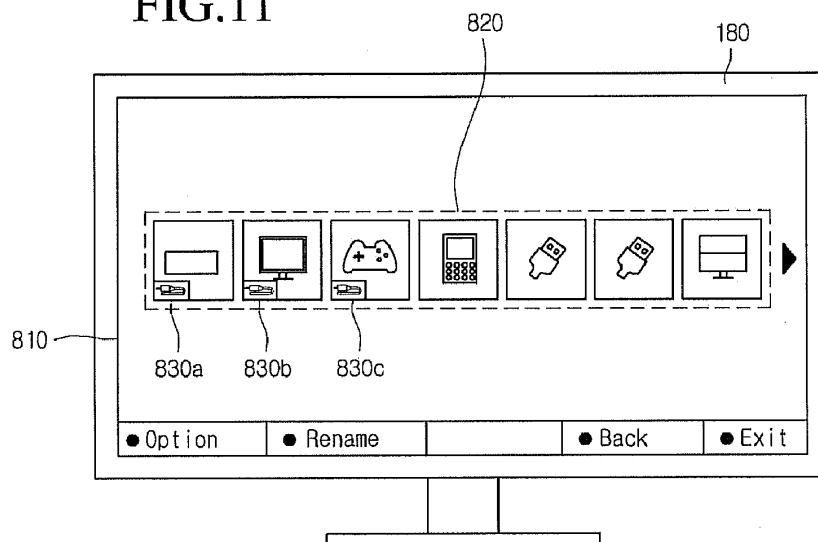


FIG.11



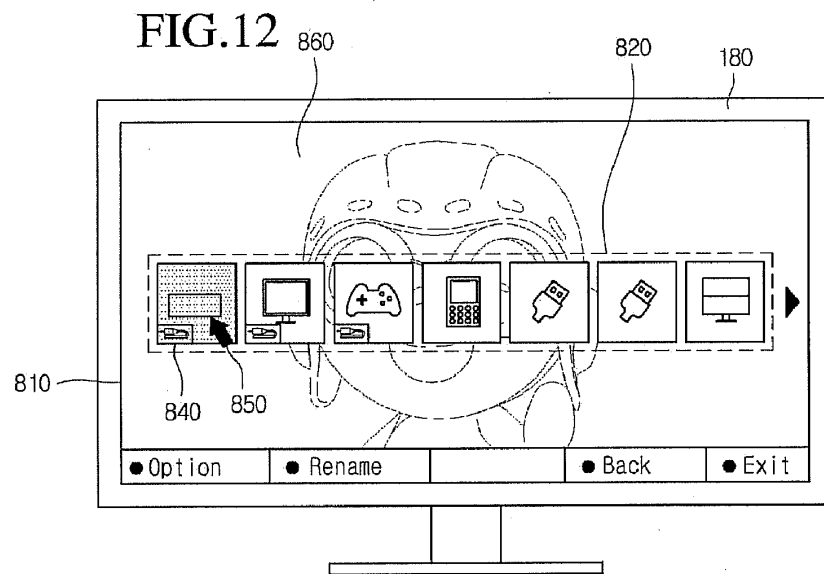


FIG.13

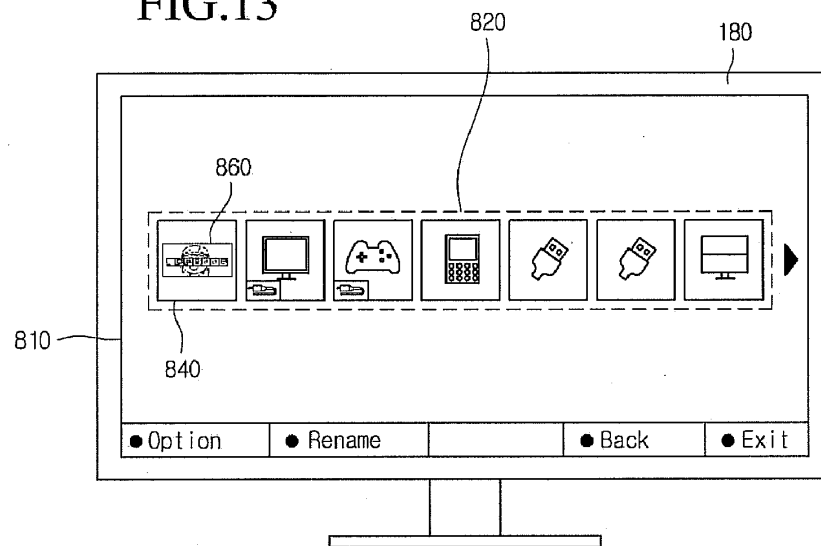


FIG.14

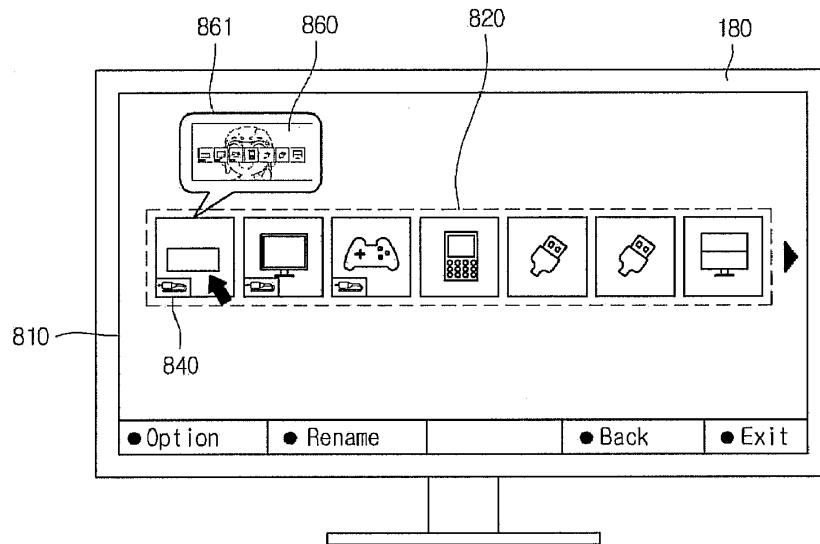


FIG.15

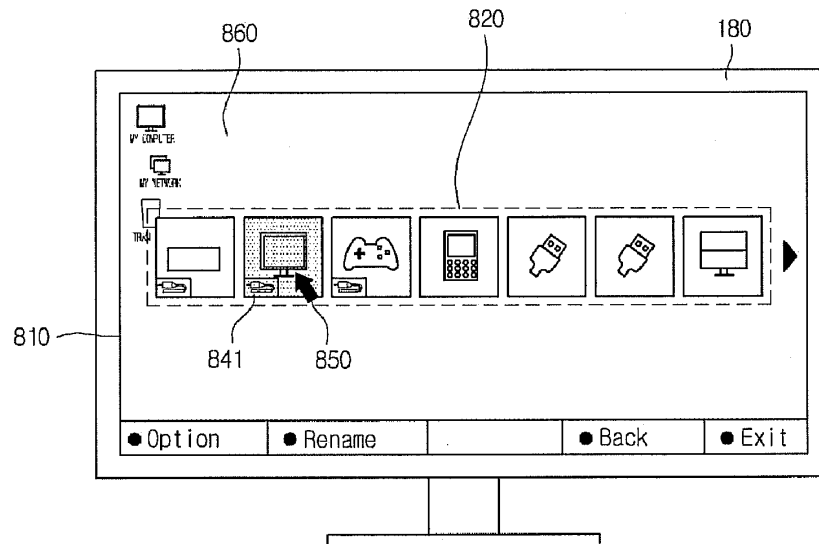


FIG.16

