In re Application of
Jung Yong Kang, et al.
Application No. 10/782,879
Patent No. 7,362,340
Filed: February 23, 2004
Attorney Docket No. 2950-0290P

This is a notice regarding your request for acceptance of a fee deficiency submission under 37 CFR 1.28.

The Office no longer investigates or rejects original or reissue patent under 37 CFR 1.56. 1098 Off. Gaz. Pat. Office 502 (January 3, 1989). Therefore, nothing in this Notice is intended to imply that an investigation was done.

Your fee deficiency submission under 37 CFR 1.28 is hereby ACCEPTED.

This patent is no longer entitled to small entity status. Accordingly, all future fees paid in this patent must be paid at the large entity rate.

Inquiries related to this communication should be directed to the undersigned at (571) 272-2991.

/Terri Johnson/
Terri Johnson
Petitions Examiner
Office of Petitions
Docket No.: RPL-0436

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Jung Yong KANG

Serial No.: 10/782,879
Patent No.: 7,362,340

Filed: February 23, 2004
Issued: April 22, 2008

Confirmation No.: 86/269,222
Group Art Unit: 2628
Examiner: Jin Cheng WANG

For: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

PETITION TO ACCEPT NOTIFICATION OF LOSS OF
ENTITLEMENT TO SMALL ENTITY STATUS UNDER 37 C.F.R. §1.28(c)

ATTENTION: OFFICE OF PETITIONS
U.S. Patent and Trademark Office
Customer Service Window, MAIL STOP PETITIONS
Randolph Building 401 Dulany Street
Alexandria, Virginia 22314

Sir:

Applicant petitions the U.S. Patent and Trademark Office to Accept Notification of Loss of Entitlement To Small Entity Status in connection with the above-identified application pursuant to 37 C.F.R. §1.28(c). Please contact Applicant’s undersigned representative with any questions.

APPLICANT HEREBY PETITIONS FOR THE ACCEPTANCE OF THIS
NOTIFICATION OF LOSS OF ENTITLEMENT TO SMALL ENTITY STATUS
UNDER 37 C.F.R. §1.28(c) OF THIS APPLICATION

NOTE: The error will be excused upon compliance with the following items:
(1) Payment of deficiency owed; and
(2) Itemization of the deficiency payment.

1. Payment of Deficiency Owed Under 37 C.F.R. 1.28(e)(12)
The Commissioner is hereby authorized to charge my Deposit Account No. 16-0607 in the amount of $1,285.00.

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Adjustment date: 06/13/2012 CKHLOK
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Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
KED & ASSOCIATES, LLP

Carol L. Druzbick
Registration No. 40,287

Correspondence Address:
P.O. Box 221200
Chantilly, VA 20153-1200
703 766-3777 CLD
Date: June 19, 2012
Please direct all correspondence to Customer Number 34610

Encs: Payment of Deficiency Owed Under 37 C.F.R. 1.28(c)(2)
      Itemization of the Deficiency Payment Under 37 C.F.R. 1.28(c)(2)(ii)
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Jung Yong KANG

Confirmation No.: 7103

Serial No.: 10/782,879
Patent No.: 7,362,340

Group Art Unit: 2628

Filed: February 23, 2004

Issued: April 22, 2008

Examiner: Jin Cheng WANG

Customer No.: 34610

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703 766-3777 CLDxmd

Date: June 19, 2012
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Encs: Payment of Deficiency Owed Under 37 C.F.R. 1.28(c)(2)
Itemization of the Deficiency Payment Under 37 C.F.R. 1.28(c)(2)(ii)
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**Payment information:**

Submitted with Payment
- no

**File Listing:**

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**Warnings:**

**Information:**
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of  
Jung Yong KANG

Serial No.: 10/782,879  
Patent No.: 7,362,340

Filed: February 23, 2004  
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1. Payment of Deficiency Owed Under 37 C.F.R. 1.28(c) 16-0607 565.00 DA

The Commissioner is hereby authorized to charge my Deposit Account No. 16-0607 in the amount of $1,285.00.
2. Itemization of the Deficiency Payment Under 37 C.F.R. 1.28(c)(2)(ii)

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Carol L. Druzbick
Registration No. 40,287

Correspondence Address:
P.O. Box 221200
Chantilly, VA 20153-1200
703 766-3777 CLD @md
Date: June 14, 2012

Please direct all correspondence to Customer Number 34610

Encs: Payment of Deficiency Owed Under 37 C.F.R. 1.28(c)(2)
Itemization of the Deficiency Payment Under 37 C.F.R. 1.28(c)(2)(ii)
ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

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

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

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

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

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

Jung Yong Kang, Kyunggi-Do, KOREA, REPUBLIC OF;
**PART B - FEE(S) TRANSMITTAL**

Complete and send this form, together with applicable fee(s), to:  
Mail:  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
Fax: (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 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  
12/3/2007  
BIRCH STEWART KOLASCH & BIRCH LLP  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

**APPLICATION NO.** 10/782,879  
**FILING DATE:** 02/23/2004  
**FIRST NAMED INVENTOR:** Jung Yong Kang  
**ATTORNEY DOCKET NO.:** 2950-0290P  
**CONFIRMATION NO.:** 7103

**TITLE OF INVENTION:** METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

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**EXAMINER:** WANG, JIN CHENG  
2628  
345-660000

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 01-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list  
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

**ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (primi or type):**

Please check the appropriate assignee category or categories (will not be printed on the patent):  
☐ Individual  ☑ Corporation or other private group entity  ☐ Government

**NAME:** HUMAX CO., LTD.  
**CITY:** YOUGIN CITY, REPUBLIC OF KOREA

3. **ADDRESS:**

4. The following fee(s) are submitted:
   ☑ Issue Fee  
   ☑ Publication Fee (No small entity discount permitted)  
   ☑ Advance Order - # of Copies: Four (4)  

5. **Change in Entity Status (from status indicated above):**
   ☐ a. Applicant claims SMALL ENTITY status. Sec 37 CFR 1.27.  
   ☐ b. Applicant is no longer claiming SMALL ENTITY status. Sec 37 CFR 1.27(g)(2).

**NOTE:** The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature:  

Typed or printed name:  

Date: February 29, 2008  
Registration No.: 40,953

This collection of information 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 33 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, 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.

**PTOL-25 (Rev. 08/07) Approved for use through 08/31/2010.**  
OMB 0561-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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**Title of Invention:** METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

**First Named Inventor/Applicant Name:** Jung Yong Kang

**Filer:** Esther Hyeri Chong/Seth Domnarski

**Attorney Docket Number:** 2950-0290P

Filed as Small Entity

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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

- Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)
- Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)
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**Warnings:**

**Information:**

Total Files Size (in bytes): 73905

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.
NOTICE OF ALLOWANCE AND FEE(S) DUE

2292 7590 12/03/2007
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

APPLICATION NO.  FILING DATE  FIRST NAMED INVENTOR  ATTORNEY DOCKET NO.  CONFIRMATION NO.
10/782,879  02/23/2004  Jung Yong Kang  2950-0290P  7103

TITLE OF INVENTION: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

EXAMINER
WANG, JIN CHENG

ART UNIT  PAPER NUMBER
2628

DATE MAILED: 12/03/2007

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 SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

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: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.
PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail
Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax
(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
12/03/2007
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

APPLICATION NO. 10/782,879
FILING DATE 02/23/2004
FIRST NAMED INVENTOR Jung Yong Kang
ATTORNEY DOCKET NO. 2950-0290P
CONFIRMATION NO. 7103

TITLE OF INVENTION: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

APPL. TYPE SMALL ENTITY ISSUE FEE DUE PUBLICATION FEE DUE PREV. PAID ISSUE FEE TOTAL FEE(S) DUE DATE DUE
nonprovisional YES $720 $300 $0 $1020 03/03/2008

EXAMINER WANG, JIN CHENG
ART UNIT 2628
CLASS-SUBCLASS 345-660000

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 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list:
   (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
   (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to
   2 registered patent attorneys or agents. If no name is listed, no name will be printed.

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 has been filed for recordation as set forth in 37 CFR 3.11. 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. The following fee(s) are submitted:
   □ Issue Fee
   □ Publication Fee (No small entity discount permitted)
   □ Advance Order - # of Copies

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)
   □ A check is enclosed.
   □ Payment by credit card. Form PTO-2038 is attached.
   □ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number ________ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)
   □ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
   □ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature ____________________________

Typed or printed name ____________________________

Registration No. ____________________________

This collection of information 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 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, 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.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.
OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

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

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

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

Application No. 10/782,879
Applicant(s) KANG, JUNG YONG
Examiner Jin-Cheng Wang
Art Unit 2628

-- 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 10/31/2007.

2. ☐ The allowed claim(s) is/are 1, 3, 4, 6, 7, 10, 12, 13, 15 and 16.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☑ All    b) ☐ Some*   c) ☐ None of 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.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
       1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ 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)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☑ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.
Reasons for Allowance

Claims 1, 3-4, and 6-7 of the amendment dated 10/31/2007 are allowed. The following is an examiner's statement of reasons for allowance of claims 1, 3-4, and 6-7: Nothing in the prior art anticipates or suggests, "wherein the part of the rear end of the graphic image excluded from the valid display period corresponds to an amount the slam: point of the graphic image is shifted to within the valid display period" in a method for controlling a resolution of a graphic image comprising: (a) selecting a first resolution value of the graphic image to be displayed on an external display unit, said first resolution value corresponding to first horizontal and vertical resolution values; (b) additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value, and said second resolution value corresponding to second horizontal and vertical resolution values corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the first resolution value selected at the step (a) is displayed within the valid screen size; (c) confirming a source type on the graphic image to be displayed on the external display unit and a screen mode; (d) referring to at least one from the selected first and second resolution values and reconfiguring the graphic image according to a result of the confirmation; and (e) shifting a start point of the graphic image controlled by the second horizontal and vertical resolution values selected at the step (b) to within a valid display period contained between horizontal sync signals and excluding part of a rear end of the graphic image from a valid display period such that a number of pixels of the graphic image in a horizontal direction is reduced and a number of lines of the graphic image in a vertical direction is reduced, wherein if the source type of the confirmed graphic image is a source type other than a video or
broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the referring step (d) refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image based on a full screen mode, the referring step (d) refers only to the first resolution value: and wherein the part of the rear end of the graphic image excluded from the valid display period corresponds to an amount the slam: point of the graphic image is shifted to within the valid display period; set forth in the independent claim 1. The claims 3-4 and 6-7 depend upon the claim 1 and are allowed for the same reason as the base claim 1.

Claims 10, 12-13 and 15-16 of the amendment dated 10/31/2007 are allowed for same reasons discussed above.

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

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. 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.

jcw
Jinheng Wang, P.E.
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NONE

Assistant Examiner (Date)


Total Claims Allowed:

10

O.G. Print Claim(s) O.G. Print Figure

Claim 1 Fig. 5

U.S. Patent and Trademark Office
# Index of Claims

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- Claims renumbered in the same order as presented by applicant
- CPA
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- R.1.47

U.S. Patent and Trademark Office
**BIB DATA SHEET**

**CONFIRMATION NO. 7103**

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**APPLICANTS**
Jung Yong Kang, Kyunggi-Do, KOREA, REPUBLIC OF;

**CONTINUING DATA**
None - Gene

**FOREIGN APPLICATIONS**
Republic of Korea 03-10909 02/21/2003

**IF REQUIRED, FOREIGN FILING LICENSE GRANTED**
SMALL ENTITY

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Foreign Priority claimed [☐] Yes [☐] No
35 USC 119(a-d) conditions met [☐] Yes [☐] No
Met after Allowance
Verified and Acknowledged

**ADDRESS**
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747
UNITED STATES

**TITLE**
Method for controlling resolution of graphic image

**FILING FEE RECEIVED**
450

FEES: Authority has been given in Paper
No. __________ to charge/credit DEPOSIT ACCOUNT
No. __________ for following:

- [☐] All Fees
- [☐] 1.16 Fees (Filing)
- [☐] 1.17 Fees (Processing Ext. of time)
- [☐] 1.18 Fees (Issue)
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BIB (Rev. 05/07)
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Request for Continued Examination (RCE) Transmittal

Application Number 10/782,879-Conf. #7103
Filing Date February 23, 2004
First Named Inventor Jung Yong KANG
Art Unit 2628
Examiner Name J. C. Wang
Attorney Docket Number 2950-0290P

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application. Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application.

1. Submission required under 37 CFR 1.114  
   Note: if the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
   a. ❑ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
      i. ❑ Consider the arguments in the Appeal Brief or Reply Brief previously filed on __________________
      ii. ❑ Other __________________
   b. ❑ Enclosed
      i. ❑ Amendment/Reply
      ii. ❑ Affidavit(s)/Declaration(s)
      ii. ❑ Information Disclosure Statement (IDS)
      iv. ❑ Other __________________

2. Miscellaneous
   a. ❑ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of ________ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
   b. ❑ Other __________________

3. Fees
   The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
   a. ❑ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments to Deposit Account No. 02-2448. I have enclosed a duplicate copy of this sheet.
      i. ❑ RCE fee required under 37 CFR 1.17(e)
      ii. ❑ Extension of time fee (37 CFR 1.136 and 1.17)
      iii. ❑ Other __________________
   b. ❑ Check in the amount of $ ________________ enclosed
   c. ❑ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature ____________________________ Date October 31, 2007
Name (Prin/Type) Esther H. Chong Registration No. 40,953

11/01/2007 HLE333 00000030 022448 10782879
01 FC:2801 405.00 A

Birch, Stewart, Kolasch & Birch, LLP
PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) 
FY 2006

Application Number 10/782,879-Conf. #7103

For: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

Art Unit 2628

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

- One month (37 CFR 1.17(a)(1)) $120
- Two months (37 CFR 1.17(a)(2)) $460
- Three months (37 CFR 1.17(a)(3)) $1050
- Four months (37 CFR 1.17(a)(4)) $1640
- Five months (37 CFR 1.17(a)(5)) $2230

Applicant claims small entity status. See 37 CFR 1.27.

A check in the amount of the fee is enclosed.

Payment by credit card. Form PTO-2038 is attached.

The Director has already been authorized to charge fees in this application to a Deposit Account.

The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 02-2448.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the 

applicant/inventor.

assignee of record of the entire interest. See 37 CFR 3.71.

Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/66).

attorney or agent of record. Registration Number 40,953

attorney or agent under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34

Signature

Esther H. Chong

Typed or printed name

Date

October 31, 2007

Telephone Number

(703) 205-8000

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

Total of 1 forms are submitted.
Effective on 12/02/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

### FEE TRANSMITTAL
For FY 2008

- Applicant claims small entity status. See 37 CFR 1.27
- Total Amount of Payment: $465.00

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For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)
- Charge fee(s) indicated below
- Credit any overpayment
- Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17

### FEE CALCULATION

#### 1. BASIC FILING, SEARCH, AND EXAMINATION FEES

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#### 2. EXCESS CLAIM FEES

- Each claim over 20 (including Reissues): 50 / 25
- Each independent claim over 3 (including Reissues): 210 / 105
- Multiple dependent claims: 370 / 185

#### 3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $260 ($130 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(a).

- Total Sheets: 100
- Extra Sheets: 50
- Number of each additional 50 or fraction thereof: (round up to a whole number)
- Fee Paid ($) =

#### 4. OTHER FEES

- Non-English Specification, $130 fee (no small entity discount): $405.00
- Other (e.g., late filing surcharge): 2801 Request for continued examination (RCE) (see 37 ..., 405.00
- 2251 Extension for response within first month, 60.00

**SUBMITTED BY**

<table>
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<th>Registration No. (Attorney/Agent)</th>
<th>Telephone</th>
<th>Date</th>
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<td>Esther H. Chong</td>
<td>40,953</td>
<td>(703) 205-8000</td>
<td>October 31, 2007</td>
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Birch, Stewart, Kolasch & Birch, LLP
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Jung Yong KANG

Application No.: 10/782,879
Confirmation No.: 7103

Filed: February 23, 2004
Art Unit: 2628

For: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE
Examiner: J. C. Wang

AMENDMENT IN RESPONSE TO FINAL OFFICE ACTION

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

Sir:

In response to the Office Action mailed July 26, 2007, please amend this application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.
AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for controlling a resolution of a graphic image comprising:

   (a) selecting a first resolution value of the graphic image to be displayed on an external display unit, said first resolution value corresponding to first horizontal and vertical resolution values;

   (b) additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value, and said second resolution value corresponding to second horizontal and vertical resolution values corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the first resolution value selected at the step (a) is fully-displayed within the valid screen size;

   (c) confirming a source type on the graphic image to be displayed on the external display unit and a screen mode;

   (d) referring to at least one from the selected first and second resolution values and reconfiguring the graphic image according to a result of the confirmation; and

   (e) shifting a start point of the graphic image controlled by the second horizontal and vertical resolution values selected at the step (b) to within a valid display period contained between horizontal sync signals and excluding part of a rear end of the graphic image from a valid display period such that a number of pixels of the graphic image in a horizontal direction is reduced and a number of lines of the graphic image in a vertical direction is reduced,
wherein if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the referring step (d) refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image based on a full screen mode, the referring step (d) refers only to the first resolution value, and

wherein the part of the rear end of the graphic image excluded from the valid display period corresponds to an amount the start point of the graphic image is shifted to within the valid display period.

2. (Canceled).

3. (Previously Presented) The method as set forth in claim 1, wherein the external display unit is a television (TV).

4. (Previously Presented) The method as set forth in claim 3, wherein the step (a) is carried out by selecting any one of a plurality of first horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV.

5. (Canceled).

6. (Previously Presented) The method as set forth in claim 3, wherein the step (d) is carried out by controlling the first resolution of the graphic image on the basis of the resolution
value selected at the step (a) when the source type of the confirmed graphic image is a video image and a screen mode is a full screen mode.

7. (Original) The method as set forth in claim 6, wherein the video image is a video image read and reproduced from an optical disc or a broadcast image received through a broadcast.

8-9. (Canceled).

10. (Currently Amended) A system for controlling a resolution of a graphic image comprising:

an input device configured to allow a user to select a first resolution value of the graphic image to be displayed on an external display unit, and to select a second resolution value corresponding to a valid screen size of the external display unit, the second resolution value being less than the first resolution value, said first resolution value being first horizontal and vertical resolution values, and said second resolution value being second horizontal and vertical resolution values corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the first resolution value selected using the input device is fully-displayed within the valid screen size; and

a processing unit configured to confirm a source type on the graphic image to be displayed on the external display unit and a screen mode, and to refer to at least one from the
selected first and second resolution values and to reconfigure the graphic image according to a result of the confirmation,

wherein if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the processing unit refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image based on a full screen mode, the processing unit refers only to the first resolution value, and

wherein the processing unit shifts a start point of the graphic image controlled by the second horizontal and vertical resolution values selected using the input unit to within a valid display period contained between horizontal sync signals and excludes part of a rear end of the graphic image from the valid display period such that a number of pixels of the graphic image in a horizontal direction is reduced and a number of lines of the graphic image in a vertical direction is reduced, and

wherein the part of the rear end of the graphic image excluded from the valid display period corresponds to an amount the start point of the graphic image is shifted to within the valid display period.

11. (Canceled).

12. (Previously Presented) The system as set forth in claim 10, wherein the external display unit is a television (TV).
13. (Previously Presented) The system as set forth in claim 12, wherein the first resolution values include any one of a plurality of horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV.

14. (Canceled).

15. (Previously Presented) The system as set forth in claim 12, wherein the processing unit controls the resolution of the graphic image based on the first resolution value when the source type of the confirmed graphic image is a video image and a screen mode is a full screen mode.

16. (Previously Presented) The system as set forth in claim 15, wherein the video image is a video image read and reproduced from an optical disc or a broadcast image received through a broadcast.

17-18. (Canceled).
REMARKS

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

Claims 1, 3, 4, 6, 7, 10, 12, 13, 15 and 16 are pending in the present application. Claims 1 and 10 have been amended by the present amendment.

In the outstanding Office Action, claim 1 was rejected under 35 U.S.C. § 112, first paragraph; claims 1, 10, 12, 13, 15 and 16 were rejected under 35 U.S.C. § 112, first and second paragraphs; and claims 1, 3, 4, 6, 7, 10, 12, 13, 15 and 16 were rejected under 35 U.S.C. § 103 (a) as unpatentable over Grigor et al. in view of Hodgkinson and Iida et al.

Regarding the rejection of the claims under 35 U.S.C. § 112, first and second paragraphs, claims 1 and 10 have been amended to remove the term “fully.” Accordingly, it is respectfully requested these rejections be withdrawn.

Claims 1, 3, 4, 6, 7, 10, 12, 13, 15 and 16 stand rejected under 35 U.S.C. § 103 (a) as unpatentable over Grigor et al. in view of Hodgkinson and Iida et al. This rejection is respectfully traversed.

Amended independent claim 1 includes a combination of features and has been amended to clarify that the part of the rear end of the graphic image excluded from the valid display period corresponds to an amount the start point of the graphic image is shifted to within the valid display period. Independent claim 10 includes similar features in a varying scope.

These features are supported at least by Fig. 5 and page 8, lines 1-8 of the present specification. For example, Fig. 5 illustrates the start point of the graphic image being shifted to a valid screen contained between the horizontal sync signals H_Sync according to the resolution
controlling operation, and part of a rear end of a graphic image being excluded from a valid display such that the number of pixels of the graphic image in a horizontal direction is reduced and the number of lines of the graphic image in a vertical direction is reduced.

Further, as shown in Fig. 5, the part of the rear end of the graphic image excluded from the valid display period corresponds to an amount the start point of the graphic image is shifted to within the valid display period. Thus, as shown in Fig. 6, the user selection menu bar located at a top portion of the graphic image is appropriately displayed and the user can select a desired item.

That is, the present invention solves a specific problem in which a menu bar is not fully displayed on a valid screen of a television, for example (see Fig. 3) by selecting a first resolution value, a second resolution value, confirming the source type of the graphic image, and shifting a start point of the graphic image based on the value selected such that the part of the rear end of the graphic image excluded from the valid display period corresponds to an amount the start point of the graphic image is shifted to within the valid display period.

The Office Action relies on Iida et al. as shifting a start point of the graphic image as claimed and cites FIGS. 2A-2C and columns 5 and 6. However, as shown in FIGS. 2A-2C of Iida et al., the displayed information is reduced between SGA, SVGA and VGA, respectively. As shown, the image in FIG. 2A is reduced in FIG. 2B and further reduced in FIG. 2C. The images are not shifted in the present invention in which the start point of the graphic image is shifted to within a valid display such that part of the rear end of the graphic image excluded from the valid display corresponds to an amount the start point of the graphic image is shifted to within the
valid display period. The images are merely reduced in Iida et al. Grigor et al. and Hodgkinson also do not teach or suggest these features.

Accordingly, it is respectfully submitted independent claims 1 and 10 and each claims depending therefrom are allowable.

CONCLUSION

If the Examiner has any questions or comments, please contact David A. Bilodeau, Reg. No. 42,325 at the offices of Birch, Stewart, Kolasch & Birch, LLP.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Date: October 31, 2007

Respectfully submitted,

By: Esther H. Chong
Registration No.: 40,953
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Rd
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

EHC/DAB/amm:tm
# PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

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If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(e).

MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))

* If the difference in column 1 is less than zero, enter “O” in column 2.

APPLICATION AS AMENDED – PART II

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TOTAL ADD'L FEE

TOTAL ADD'L FEE

LEGAL INSTRUMENT EXAMINER: Tracie Robertson

* If the entry in column 1 is less than the entry in column 2, write “O” in column 3.
** If the “Highest Number Previously Paid For” in this space is less than 20, enter “20”.
*** If the “Highest Number Previously Paid For” in this space is less than 3, enter “3”.

The “Highest Number Previously Paid For” (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.
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. 10/782,879
Applicant(s) KANG, JUNG YONG

Examiner Jin-Cheng Wang
Art Unit 2628

-- 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 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 20 April 2007.
2a) ☑ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ 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

4) ☑ Claim(s) 1,3,4,6,7,10,12,13,15 and 16 is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☑ Claim(s) 1, 3-4, 6-7, 10, 12-13 and 15-16 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ 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).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
   a) ☐ All  b) ☐ Some * c) ☐ None of:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____.
   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsman’s Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date ______.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date ______.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: ______.
DETAILED ACTION

Response to Amendment

The amendment filed on 4/20/2007 has been entered. Claims 1 and 10 have been amended. Claims 2, 5, 8-9, 11, 14 and 17-18 have been canceled. Claims 1, 3-4, 6-7, 10, 12-13 and 15-16 are pending in the application.

Response to Arguments

Applicant's arguments filed April 20, 2007 have been fully considered but are moot in view of the new ground(s) of rejection and the §112 rejection set forth in the present Office Action.

Claims 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claim 1 recites the claim limitation “additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value, and said second resolution value corresponding to second horizontal and vertical resolution values corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the first resolution value selected at the step (a) is fully displayed within the valid screen size”. Since the second resolution value is less than the first resolution value, the graphic image having the first resolution value cannot be fully displayed within the valid screen size having the second resolution value (See step (e) of claim
recites “excluding part of a rear end of the graphic image from a valid display period). Although “reconfiguring the graphic image” has been recited in step (d) following the steps (a) and (b), however, the claim limitation “the graphic image controlled by the first resolution value selected at the step (a) is fully displayed within the valid screen size”. The size of the graphic image is controlled by the first resolution value corresponding first horizontal and vertical resolution values.

As addressed below, Iida discloses the claim limitation of “shifting a start point of the graphic image controlled by the second horizontal and vertical resolution values selected at the step (b) to within a valid display period contained between horizontal sync signals and excluding part of a rear end of the graphic image from a valid display period such that a number of pixels of the graphic image in a horizontal direction is reduced and a number of lines of the graphic image in a vertical direction is reduced” (Iida Figs. 2A-2C and column 5-6).

Iida discloses shifting a start point of the graphic image controlled by the SVGA standard which has a resolution lower than that of the XGA standard. Thus, image signals are written to the display area 36 in Fig. 2B within the screen 31 including pixels 32 with 600 rows and 800 columns appropriate for the resolution of the SVGA standard. A black signal is written to the pixels 32 belonging to the blank area 37 which is other than this display area 36.

Iida discloses in Fig. 2C that the timing generator 2 causes a part of the transferring stage included in the vertical scanning circuit 33 of the display panel 3 to simultaneously operate during the vertical blanking period of the image signals in order to collectively write a black signal to the rows of the pixels included in the upper-side and lower-side portions of the blank area 37. With respect to each intermediate row between the upper-side rows and the lower-side
rows, a black signal and image signals are written in sequence to each pixel in a normal transfer operation. A black signal independent of the image signals is supplied to the left and right sides belonging to the blank area 37 and at the same time the image signals are supplied to the display area 36 and the black signal and the image signals are written in sequence simultaneously to these areas in accordance with a normal transfer operation (See Fig. 5). Thus, a start point of the image signals having the resolution 1024*768 is shifted (Figs. 2B-2C). Iida discloses in column 5 a vertical start signal and a horizontal start signal relating to the claim subject matter of “a start point...between horizontal sync signals”. The excluding part of the graphic image is the black area 37 including the part of a rear end of the graphic image from a valid display period (See Figs. 2B-2C) so that a number of pixels of the graphic image in a horizontal direction is reduced and a number of lines of the graphic image in a vertical direction is reduced (See Figs. 2B-2C, 5 and column 5-6).

Iida further discloses a method for controlling a resolution of a graphic image, comprising the steps of:

(a) Selecting a first resolution value of the graphic image to be displayed on an external display unit, said first resolution value corresponding to first horizontal and vertical resolution values (e.g., Figs. 2A-2C, 5 and column 5-6);

(b) Additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value, and said second resolution value corresponding to second horizontal and vertical resolution values corresponding to a valid horizontal and vertical frequency so that the graphic image
controlled by the first resolution value selected at the step (a) is fully displayed within the valid screen size (e.g., Figs. 2A-2C, 5 and column 5-6);

(c) Confirming a source type of the graphic image (XGA format, SVGA, VGA, etc of Figs. 2A-2C) to be displayed on the external display unit and a screen mode (e.g., Figs. 2A-2C, 5 and column 5-6);

(d) Referring to the selected first and second resolution values and reconfiguring the graphic image (e.g., Figs. 2A-2C, 5 and column 5-6).

Wherein if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode (Figs. 2B-2C), the processing unit refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image based on a full screen mode (Fig. 2A), the processing unit refers only to the first resolution value (e.g., Figs. 2A-2C, 5 and column 5-6).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3-7, 10, 12-13, 15-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.
The claim 1 recites the claim limitation “additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value, and said second resolution value corresponding to second horizontal and vertical resolution values corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the first resolution value selected at the step (a) is fully displayed within the valid screen size”. Since the second resolution value is less than the first resolution value, the graphic image having the first resolution value cannot be fully displayed within the valid screen size having the second resolution value (See step (e) of claim recites “excluding part of a rear end of the graphic image from a valid display period). Although “reconfiguring the graphic image” has been recited in step (d) following the steps (a) and (b), however, the claim limitation “the graphic image controlled by the first resolution value selected at the step (a) is fully displayed within the valid screen size”. The size of the graphic image is controlled by the first resolution value corresponding first horizontal and vertical resolution values. Claims 3-4 and 6-7 depend upon the claim 1 and are rejected due to their dependency on the claim 1.

The claim 10 is subject to the same rationale of rejection set forth in the claim 1.

The claims 12-13 and 15-16 depend upon the claim 10 and are rejected due to their dependency on the claim 10.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
Claims 1, 3-4, 6-7, 10, 12-13 and 15-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim 1 recites the claim limitation “additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value, and said second resolution value corresponding to second horizontal and vertical resolution values corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the first resolution value selected at the step (a) is fully displayed within the valid screen size”. Since the second resolution value is less than the first resolution value, the graphic image having the first resolution value cannot be fully displayed within the valid screen size having the second resolution value. Although “reconfiguring the graphic image” has been recited in step (d) following the steps (a) and (b), however, the claim limitation “the graphic image controlled by the first resolution value selected at the step (a) is fully displayed within the valid screen size”. The size of the graphic image is controlled by the first resolution value corresponding first horizontal and vertical resolution values. Clarification is required.

Claim 1 also set forth the claim limitation of “second resolution value” and “first resolution value” and the claim 2 set forth the claim limitation “the first and second resolution values are horizontal and vertical resolution values”. However, applicant refers to the resolution values such as “720 x 480” pixels (See line 22, Page 6 of applicant’s specification). From the claim limitation set forth in these claims, it is not clear whether “first resolution value” refers to just one value or two values for the horizontal and vertical resolution values. It is further not
clear whether “second resolution value” refers to just one value or two values for the horizontal and vertical resolution values. Similarly comments apply to the dependent claims 3-7 and 9. Clarification is required.

Claims 3-4 and 6-7 depend upon the claim 1 and are rejected due to their dependency on the claim 1.

The claim 10 is subject to the same rationale of rejection set forth in the claim 1.

The claims 12-13 and 15-16 depend upon the claim 10 and are rejected due to their dependency on the claim 10.

Claim Rejections - 35 USC § 103

The following is a quotation of 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 of this title, 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 negatived by the manner in which the invention was made.

Claims 1, 3-4, 6-7 and 10, 12-13, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grigor et al. U.S. Patent No. 6,618,026 (hereinafter Grigor) in view of Hodgkinson, "Dynamic Adjustment of on Screen graphic displays to cope with different video display and/or display screen formats", US Patent Pub. No. US 2002/0089523 A1 (hereinafter Hodgkinson) and Iida et al. U.S. Patent No. 6,236,388 (hereinafter Iida).

Re Claims 1 and 10:
Grigor discloses a method for controlling a resolution of a graphic image, comprising the steps of:

(a) Selecting a first resolution value of the graphic image to be displayed on an external display unit, said first resolution value corresponding to first horizontal and vertical resolution values (e.g., obtain a drawing surface setting; Figs 3-4; column 4, lines 38-60; for example, the first resolution value is the resolution 1024*768 associated with the initial drawing surface);

(b) additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value, and said second resolution value corresponding to second horizontal and vertical resolution values corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the first resolution value selected at the step (a) is fully displayed within the valid screen size (e.g., see 112 rejection set forth above. Moreover, the processing module alters one or more of the parameters including the resolution to generate an alternative drawing surface wherein the alternative drawing surface has the second resolution value modified to match a valid screen of the TV. For example, the second resolution is 720*540; see column 4, lines 40-60);

(c) Confirming a source type (e.g., a drawing surface setting of the plurality of the drawing surface settings including a resolution of 1024*768, 720*540, 640*480, etc.; column 4, lines 38-60) of the graphic image to be displayed on the external display unit and a screen mode (e.g., Moreover, the cited reference teaches determining whether each of the multiple displays includes a display mode that substantially matches the alternate drawing surface setting wherein the determination involves the selection of the resolution type for each display that
substantially matches the alternate drawing surface setting; see Figs. 1-4; column 1, lines 55-60 wherein Fig. 2 lists a set of resolution values for each display. Selecting/determining a display mode for each display also selects/determines a resolution value corresponding to a valid screen of each display; see also column 5-6. The cited reference teaches asking if there is a match between the source resolution of the drawing surface settings and a screen mode or display mode of each of multiple displays listed in Fig. 2 that matches the selected second resolution; see Figs. 3-4 and column 5-6; “asking whether all of the resolution options have been utilized as the alternative drawing surface setting in step 64 of Fig. 3 and asking whether each of the multiple displays includes a display mode that substantially matches the newly generated alternate drawing surface setting in step 60 of Fig. 3, if there is a match, provide the images stored in the drawing surface to the multiple displays based on the drawing surface setting in step 56 of Fig. 3. Note that the screen mode refers to a display mode with a variety of display resolutions listed in Fig. 2 or the final display mode for the image such as full screen mode or in a window display mode; see column 5, lines 34-37).

(d) Referring to the selected first and second resolution values and reconfiguring the graphic image (Referring to the plurality of the drawing surface settings including the initial drawing setting and the current drawing setting wherein the initial drawing setting has a first resolution value and the current drawing setting has the second resolution value. The first resolution value does not match with the display mode and the second resolution value may match with the display mode. If the current resolution value matches the display mode, the graphic image is reconfigured to be displayed. Each display would reconfigure based on the drawing surface settings to display the image in full screen or in a window as established by the
drawing surface; column 5, lines 34-37), according to a result of the configuration according to the determination in the step (c); see Fig. 3).

Wherein if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the processing unit refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or broadcast image based on a full screen mode, the processing unit refers only to the first resolution value.

Grigor discloses selecting a first resolution value of the graphic image to be displayed on an external display unit wherein Grigor teaches obtaining a drawing surface setting (Figs 3-4; column 4, lines 38-60) that includes the first resolution value such as the resolution 1024*768 associated with the initial drawing surface. It is understood that if there is a match between the graphic image to be displayed and the initial drawing surface setting, the graphic image is displayed in full screen mode.

Grigor discloses additionally selecting a second resolution value corresponding to a valid screen of the external display unit, said second resolution value being less than the first resolution value wherein Grigor teaches that the processing module alters one or more of the parameters including the horizontal and vertical resolutions to generate an alternative drawing surface such that the second resolution value is modified to match a valid screen size of the TV. For example, the second resolution is 720*540 (see column 4, lines 40-60).

Grigor discloses confirming a source type wherein the source type means the graphic image having different resolutions and refresh rate, e.g., the graphic image having a drawing
surface setting including a resolution of 1024*768, 720*540, 640*480, etc. (column 4, lines 38-60). Grigor teaches a screen mode wherein he teaches determining whether each of the multiple displays includes a display mode that substantially matches the alternate drawing surface setting and the determination involves the selection of the resolution type for each display that substantially matches the alternate drawing surface setting (see Figs. 1-4; column 1, lines 55-60) in which Fig. 2 lists a set of resolution values for each display. He teaches asking if there is a match between the source resolution of the drawing surface settings and a screen mode or display mode of each of multiple displays listed in Fig. 2 that matches the selected second resolution; see Figs. 3-4 and column 5-6. He further teaches asking whether all of the resolution options have been utilized as the alternative drawing surface setting in step 64 of Fig. 3 and asking whether each of the multiple displays includes a display mode that substantially matches the newly generated alternate drawing surface setting in step 60 of Fig. 3. If there is a match, provide the images stored in the drawing surface to the multiple displays based on the drawing surface setting in step 56 of Fig. 3. Note that the screen mode refers to a display mode with a variety of display resolutions listed in Fig. 2 or the final display mode for the image such as full screen mode or in a window display mode; see column 5, lines 34-37. Grigor therefore teaches referring to both the first resolution value (full screen mode) and the second resolution value (partial screen mode).

Grigor teaches referring to the plurality of the drawing surface settings including the initial drawing setting and the current drawing setting wherein the initial drawing setting has a first resolution value and the current drawing setting has the second resolution value. The first resolution value may match the display mode and thus only the first resolution value is referred
to. Otherwise, the first resolution value does not match with the display mode and the second resolution value may match with the display mode. If the current resolution value matches the display mode, the graphic image is reconfigured. Each display would reconfigure based on the drawing surface settings to display the image in full screen or in a window as established by the drawing surface (column 5, lines 34-37).

Thus, Grigor teaches the claim limitation if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the processing unit refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or broadcast image based on a full screen mode, the processing unit refers only to the first resolution value.

Although Grigor does not explicitly teach “a valid screen size of the external display unit”, Hodgkinson explicitly discloses a valid screen size of the external display unit. For example, Hodgkinson discloses in Page 3-4 the shape and size of the display screen and the switching to the different aspect ratio (switching from one display mode to another display mode) by adjusting the height or width of the graphics image. However, if the graphic image fits into the display resolution, it is not necessary for adjusting the height or width of the graphics image. Hodgkinson discloses that the graphics display can be modified to take into account changes in the formats of the video display with respect to the display screen format and web pages can be reformatted to fit the new available display width. If the pixel aspect ratio has changed, the graphic display is rescaled. Hodgkinson further discloses in Page 2 a full screen option for displaying the graphic image by adjusting the format for the graphic image and asking
the display screen to change dynamically into a different display mode for the graphics image. In this fashion, the full screen resolution and the partial screen resolution are referred to if there is no match between the graphics image and the display screen resolution.

Thus, Hodgkinson also teaches the claim limitation if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the processing unit refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or broadcast image based on a full screen mode, the processing unit refers only to the first resolution value.

It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to have incorporated Hodgkinson’s invention into Grigor because Hodgkinson also teaches other claim limitations including confirming a source type on the graphic image to be displayed on the external display unit such as a television and a screen mode such as a full screen mode or a partial screen mode and Grigor at least suggests the claim limitation of a valid screen size by teaching the main horizontal and vertical resolutions of a display screen and the sub horizontal and vertical resolutions of a display screen which are less than the main horizontal and vertical resolutions of a display screen so that the graphics image can be fitted into the display device. Thus, having the combined teaching of Grigor and Hodgkinson, one of the ordinary skill in the art would have been motivated to cause the graphic display to be altered with respect to the format such that it is visible and in a preferred form (See Hodgkinson Abstract).
It is not clear whether Grigor and Hodgkinson teach the claim limitation of "shifting a start point of the graphic image controlled by the second horizontal and vertical resolution values selected at the step (b) to within a valid display period contained between horizontal sync signals and excluding part of a rear end of the graphic image from a valid display period such that a number of pixels of the graphic image in a horizontal direction is reduced and a number of lines of the graphic image in a vertical direction is reduced".

However, Iida discloses the claim limitation of "shifting a start point of the graphic image controlled by the second horizontal and vertical resolution values selected at the step (b) to within a valid display period contained between horizontal sync signals and excluding part of a rear end of the graphic image from a valid display period such that a number of pixels of the graphic image in a horizontal direction is reduced and a number of lines of the graphic image in a vertical direction is reduced" (Iida Figs. 2A-2C and column 5-6).

Iida discloses shifting a start point of the graphic image controlled by the SVGA standard which has a resolution lower than that of the XGA standard. Thus, image signals are written to the display area 36 in Fig. 2B within the screen 31 including pixels 32 with 600 rows and 800 columns appropriate for the resolution of the SVGA standard. A black signal is written to the pixels 32 belonging to the blank area 37 which is other than this display area 36.

Iida discloses in Fig. 2C that the timing generator 2 causes a part of the transferring stage included in the vertical scanning circuit 33 of the display panel 3 to simultaneously operate during the vertical blanking period of the image signals in order to collectively write a black signal to the rows of the pixels included in the upper-side and lower-side portions of the blank area 37. With respect to each intermediate row between the upper-side rows and the lower-side
rows, a black signal and image signals are written in sequence to each pixel in a normal transfer operation. A black signal independent of the image signals is supplied to the left and right sides belonging to the blank area 37 and at the same time the image signals are supplied to the display area 36 and the black signal and the image signals are written in sequence simultaneously to these areas in accordance with a normal transfer operation (See Fig. 5). Thus, a start point of the image signals having the resolution 1024*768 is shifted (Figs. 2B-2C). Iida discloses in column 5 a vertical start signal and a horizontal start signal relating to the claim subject matter of “a start point…between horizontal sync signals”. The excluding part of the graphic image is the black area 37 including the part of a rear end of the graphic image from a valid display period (See Figs. 2B-2C) so that a number of pixels of the graphic image in a horizontal direction is reduced and a number of lines of the graphic image in a vertical direction is reduced (See Figs. 2B-2C, 5 and column 5-6).

It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to have incorporated Iida's invention into Hodgkinson and Grigor because Iida further discloses a method for controlling a resolution of a graphic image, comprising the steps of:

(a) Selecting a first resolution value of the graphic image to be displayed on an external display unit, said first resolution value corresponding to first horizontal and vertical resolution values (e.g., Figs. 2A-2C, 5 and column 5-6);

(b) Additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value,
and said second resolution value corresponding to second horizontal and vertical resolution values corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the first resolution value selected at the step (a) is fully displayed within the valid screen size (e.g., Figs. 2A-2C, 5 and column 5-6);

(c) Confirming a source type of the graphic image (XGA format, SVGA, VGA, etc of Figs. 2A-2C) to be displayed on the external display unit and a screen mode (e.g., Figs. 2A-2C, 5 and column 5-6);

(d) Referring to the selected first and second resolution values and reconfiguring the graphic image (e.g., Figs. 2A-2C, 5 and column 5-6).

Wherein if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode (Figs. 2B-2C), the processing unit refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image based on a full screen mode (Fig. 2A), the processing unit refers only to the first resolution value (e.g., Figs. 2A-2C, 5 and column 5-6).

Although Grigor and Hodgkinson are silent to the claim limitation of shifting a start point of the graphic image controlled by the horizontal and vertical resolution value selected at the step (b) to within a valid display period contained between horizontal sync signals, Grigor implicitly discloses shifting a start point of the graphic image controlled by the horizontal and vertical resolution value selected at the step (b) to within a valid display period contained between horizontal sync signals by modifying the refresh rate and the horizontal and vertical resolution (column 5-6).
It would have been obvious to have incorporated Iida’s changing/shiftin the display position coordinates of the images into Grigor and Hodgkinson’s method because Grigor suggests modifying the display resolution of the graphic image to suit a particular display’s resolution and thereby displaying the graphic image in full screen mode or a window mode such that the displayed graphic image is shifted to within the valid display period (Grigor column 5, lines 34-37) and therefore suggesting an obvious modification.

One of the ordinary skill in the art would have been motivated to modifying the display coordinate positions to display a graphic image within the valid display area (Grigor column 5, lines 34-37, Hodgkinson Paragraph 0038, 0047 and Iida Figs. 2A-2C, Fig. 5 and column 5-6).

Re Claims 3 and 12:

Grigor further discloses the claim limitation of the external display unit being a television (column 2, lines 60-63 discloses the plurality of displays 24-30 may be a computer monitor, flat panel screen, high definition television, a television, LCD panel and/or any device that displays images).

Re Claims 4 and 13:

Grigor further discloses selecting any one of a plurality of first horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV (e.g., modifying the resolution; column 4, lines 40-60; column 5, lines 39-41; and altering one or more parameter of the drawing surface settings; column 3, lines 50-55 and the parameters include the horizontal and vertical resolution values; column 4, lines 38-60).
Re Claims 6 and 15:

Grigor further discloses a full screen mode (the first resolution of the graphic image may be the resolution that most closely matches the drawing surface setting; column 5; and this first resolution is controlled/selected by the program. The screen mode is the display mode of the cited reference which matches the selected resolution, column 5, lines 34-37. If a match does not occur, the resolution parameter is modified so that a match can be found) and the source type being a video image (column 3, lines 30-45).

Re Claims 7 and 16:

Grigor further discloses the video image being a video image received from a television broadcast, cable broadcast, satellite broadcast, DVD player, VCR and/or camcorder (column 3, lines 30-45).

**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 Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Kee Tung can be reached on (571) 272-7794. 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).

dw
Jin-Cheng Wang
### U.S. PATENT DOCUMENTS

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<td>A</td>
<td>US-6,236,388</td>
<td>05-2001</td>
<td>Iida et al.</td>
<td>345/698</td>
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<td>B</td>
<td>US-5,903,253</td>
<td>05-1999</td>
<td>Mizutome et al.</td>
<td>345/694</td>
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<tr>
<td>C</td>
<td>US-5,844,539</td>
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<td>Kitagawa, Hideyuki</td>
<td>345/100</td>
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### FOREIGN PATENT DOCUMENTS

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### NON-PATENT DOCUMENTS

Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)

### A Note
*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.
### Index of Claims

**Application/Control No.:** 10782879  
**Applicant(s)/Patent Under Reexamination:** KANG, JUNG YONG

**Examiner:** Wang, Jin-Cheng  
**Art Unit:** 2628

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Jung Yong KANG

Application No.: 10/782,879
Confirmed No.: 7103

Filed: February 23, 2004
Art Unit: 2628

For: METHOD FOR CONTROLLING
RESOLUTION OF GRAPHIC IMAGE
Examiner: J. C. Wang

AMENDMENT IN RESPONSE TO NON-FINAL OFFICE ACTION

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

Sir:

In response to the Official Action mailed December 21, 2006, please amend this application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.
AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for controlling a resolution of a graphic image comprising:

(a) selecting a first resolution value of the graphic image to be displayed on an external display unit, said first resolution value corresponding to first horizontal and vertical resolution values;

(b) additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value, and said second resolution value corresponding to second horizontal and vertical resolution values corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the first resolution value selected at the step (a) is fully displayed within the valid screen size;

(c) confirming a source type on the graphic image to be displayed on the external display unit and a screen mode; and

(d) referring to at least one from the selected first and second resolution values and reconfiguring the graphic image according to a result of the confirmation;

(e) shifting a start point of the graphic image controlled by the second horizontal and vertical resolution values selected at the step (b) to within a valid display period contained between horizontal sync signals and excluding part of a rear end of the graphic image from a valid display period such that a number of pixels of the graphic image in a horizontal direction is reduced and a number of lines of the graphic image in a vertical direction is reduced.

wherein if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the referring step (d) refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or...
broadcast-image-based on a full screen mode, the referring step (d) refers only to the first resolution value.

2. (Canceled).

3. (Previously Presented) The method as set forth in claim 1, wherein the external display unit is a television (TV).

4. (Previously Presented) The method as set forth in claim 3, wherein the step (a) is carried out by selecting any one of a plurality of first horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV.

5. (Canceled).

6. (Previously Presented) The method as set forth in claim 3, wherein the step (d) is carried out by controlling the first resolution of the graphic image on the basis of the resolution value selected at the step (a) when the source type of the confirmed graphic image is a video image and a screen mode is a full screen mode.

7. (Original) The method as set forth in claim 6, wherein the video image is a video image read and reproduced from an optical disc or a broadcast image received through a broadcast.

8-9. (Canceled).

10. (Currently Amended) A system for controlling a resolution of a graphic image comprising:

an input device configured to allow a user to select a first resolution value of the graphic image to be displayed on an external display unit, and to select a second resolution value corresponding to a valid screen size of the external display unit, the second resolution value being less than the first resolution value, said first resolution value being first horizontal and vertical resolution values, and said second resolution value being second horizontal and vertical

Birch, Stewart, Kolasch & Birch, LLP
resolution values corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the first resolution value selected using the input device is fully displayed within the valid screen size; and

a processing unit configured to confirm a source type on the graphic image to be displayed on the external display unit and a screen mode, and to refer to at least one from the selected first and second resolution values and to reconfigure the graphic image according to a result of the confirmation,

wherein if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the processing unit refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image based on a full screen mode, the processing unit refers only to the first resolution value, and

wherein the processing unit shifts a start point of the graphic image controlled by the second horizontal and vertical resolution values selected using the input unit to within a valid display period contained between horizontal sync signals.

11. (Canceled).

12. (Previously Presented) The system as set forth in claim 10, wherein the external display unit is a television (TV).

13. (Previously Presented) The system as set forth in claim 12, wherein the first resolution values include any one of a plurality of horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV.

14. (Canceled).

15. (Previously Presented) The system as set forth in claim 12, wherein the processing unit controls the resolution of the graphic image based on the first resolution value when the
source type of the confirmed graphic image is a video image and a screen mode is a full screen mode.

16. (Previously Presented) The system as set forth in claim 15, wherein the video image is a video image read and reproduced from an optical disc or a broadcast image received through a broadcast.

17-18. (Canceled).
REMARKS

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

Claims 1, 3, 4, 6, 7, 10, 12, 13, 15 and 16 are pending in the present application. Claims 1 and 10 have been amended and claims 2, 5, 9, 11, 14 and 18 have been cancelled by the present amendment.

In the outstanding Office Action, claims 1-7, 9-16 and 18 were rejected under 35 U.S.C. § 112, first and second paragraphs; claims 1-7 and 10-16 were rejected under 35 U.S.C. § 103(a) as unpatentable over Grigor et al. in view of Hodgkinson; and claims 9 and 18 were rejected under 35 U.S.C. § 103(a) as unpatentable over Grigor et al. in view of Hodgkinson and Yui.

Regarding the rejection of claims 1-7, 9-16 and 18 under 35 U.S. C. § 112, first and second paragraphs, claims 1 and 10 have been amended to correspond with, e.g., steps S19 and S20 in Figure 4 of the present application. Accordingly, it is respectfully requested this rejection be withdrawn.

Claims 1-7 and 10-16 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Grigor et al. in view of Hodgkinson. This rejection is respectfully traversed.

Independent claims 1 and 10 have been amended to include subject matter similar to that recited in dependent claims 9 and 18, respectively. Accordingly, this rejection is moot.
Claims 9 and 18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Grigor et al. in view of Hodgkinson and Yui. This rejection is respectfully traversed.

Independent claim 1 has been amended to include subject matter similar to that recited in dependent claims 2, 5 and 9, and to include features discussed in the specification at page 8, lines 1-8. For example, independent claim 1 has been amended to clarify that the method for controlling a resolution of a graphic image includes (e) shifting a start point of the graphic image controlled by the second horizontal and vertical resolution values selected at the step (b) to within a valid display period contained between horizontal sync signals and excluding part of a rear end of the graphic image from a valid display period such that a number of pixels of the graphic image in a horizontal direction is reduced and a number of lines of the graphic image in a vertical direction is reduced. Independent claim 10 includes similar features in a varying scope.

These features are supported at least by Fig. 5 and page 8, lines 1-8 of the present specification. For example, Fig. 5 illustrates the start point of the graphic image being shifted to a valid screen contained between the horizontal sync signals H.Sync according to the resolution controlling operation, and part of a rear end of a graphic image being excluded from a valid display such that the number of pixels of the graphic image in a horizontal direction is reduced and the number of lines of the graphic image in a vertical direction is reduced. Thus, as shown in Fig. 6, the user selection menu bar located at a top portion of the graphic image is appropriately displayed and the user can select a desired item.

Regarding the subject matter recited in dependent claims 9 and 18, the Office Action indicates Grigor et al. implicitly discloses shifting a start point of the graphic image and cites columns 5 and 6. The Office Action also relies on Yui as changing the position of the display...
position coordinates of images thereby shifting a start position of the graphic image to within a valid display.

However, it is respectfully noted modifying the horizontal and vertical resolution values in Grigor et al. does not correspond to shifting the start point of the graphic image and excluding a part of the rear end of the graphic image as claimed by the present invention. In addition, Yui also does not teach or suggest the claimed shifting operation of the present invention. Rather, column 12 of Yui, which was cited by the Office Action, merely describes expanding/contracting a plurality of input images and changing a position of the images. This does not correspond to the claimed feature in which the start point of the graphic image is shifted to within a valid display and a rear end of the graphic image is excluded from a valid display such that a number of pixels of the graphic image in a horizontal direction is reduced and a number of lines and the graphic image in a vertical direction is reduced.

That is, the present invention solves a specific problem in which a menu bar is not fully displayed on a valid screen of a television, for example (see Fig. 3) by selecting a first resolution value, a second resolution value, confirming the source type of the graphic image, and shifting a start and rear end of the graphic image based on the value selected. Grigor et al., Hodgkinson and Yui do not teach or suggest these features.

Accordingly, even if these references were combinable, assuming arguendo, the combination of these references does not render obvious that claimed invention. Therefore, it is respectfully submitted independent claims 1 and 10 and each of the claims depending therefrom are allowable.
CONCLUSION

If the Examiner has any questions or comments, please contact David A. Bilodeau, Reg. No. 42,325 at the offices of Birch, Stewart, Kolasch & Birch, LLP.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Date: April 20, 2007

Respectfully submitted,

By: [Signature]
Esther H. Chong
Registration No.: 40,953
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Rd
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

EHC/DAB/tmh:tm
PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)
FY 2006

Application Number 10/782,879-Conf. #7103
Filed February 23, 2004

For METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

Art Unit 2628
Examiner J. C. Wang

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

- **One month (37 CFR 1.17(a)(1))**
  - Fee $120
  - Small Entity Fee $80
  - $ 60.00

- **Two months (37 CFR 1.17(a)(2))**
  - $450
  - $225
  - 

- **Three months (37 CFR 1.17(a)(3))**
  - $1020
  - $510
  - 

- **Four months (37 CFR 1.17(a)(4))**
  - $1580
  - $795
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- **Five months (37 CFR 1.17(a)(5))**
  - $2160
  - $1080
  - 

Applicant claims small entity status. See 37 CFR 1.27.

A check in the amount of the fee is enclosed.

Payment by credit card. Form PTO-2038 is attached.

The Director has already been authorized to charge fees in this application to a Deposit Account.

The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 02-2448.

I am the

- [ ] assignee of record of the entire interest. See 37 CFR 3.71.

  Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

- [x] attorney or agent of record. Registration Number 40,953

- [ ] attorney or agent under 37 CFR 1.34.

  Registration number if acting under 37 CFR 1.34

Signature

Esther H. Chong

April 20, 2007

Date

(703) 205-8000

Telephone Number

Typed or printed name

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

Total of 1 forms are submitted.
**FEE TRANSMITTAL**

For FY 2007

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**METHOD OF PAYMENT** (check all that apply)

- [x] Check
- [ ] Credit Card
- [ ] Money Order
- [ ] None
- [ ] Other (please identify):

Deposit Account Number: 02-2448

Deposit Account Name: Birch, Stewart, Kolasch & Birch, LLP

- [x] Charge fee(s) indicated below
- [ ] Charge fee(s) indicated below, except for the filing fee
- [x] Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17
- [x] Credit any overpayments

**FEE CALCULATION**

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**Fee Description**

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- Each independent claim over 3 (including Reissues) 200 100
- Multiple dependent claims 360 180

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HP = highest number of independent claims paid for, if greater than 3.

### 3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(f).

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### 4. OTHER FEE(S)

- Non-English Specification: $130 fee (no small entity discount)
- Other (e.g., late filing surcharge): 2251 Extension for response within first month 60.00

**SUBMITTED BY**

Signature: [Signature]

Registration No. (Attorney/Agent) 40,953

Telephone (703) 205-8000

Date April 20, 2007

Birch, Stewart, Kolasch & Birch, LLP

EHC/DAB/tm
AMENDMENT TRANSMITTAL LETTER

Application No. 10/782,879-Conf. #7103
Filing Date February 23, 2004
Examiner J. C. Wang
Art Unit 2628

Applicant: Jung Yong KANG

Invention: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

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

Transmitted herewith is an amendment in the above-identified application. The fee has been calculated and is transmitted as shown below.

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Multiple Dependent Claims (check if applicable) [ ]

Other fee (please specify): Extension for response within first month 60.00

TOTAL ADDITIONAL FEE FOR THIS AMENDMENT: 60.00

☐ Large Entity  [x] Small Entity

☐ No additional fee is required for this amendment.

[ ] Please charge Deposit Account No. 02-2448 in the amount of $ 60.00.

☐ A check in the amount of $ ______________ is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

[ ] The Director is hereby authorized to charge and credit Deposit Account No. 02-2448 as described below. A duplicate copy of this sheet is enclosed.

[ ] Credit any overpayment.

[ ] Charge any additional filing or application processing fees required under 37 CFR 1.16 and 1.17.

Esther H. Chong
Attorney Reg. No.: 40,953

BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000

Dated: April 20, 2007
# PATENT APPLICATION FEE DETERMINATION RECORD

**APPLICATION AS FILED – PART I**

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MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))

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FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))

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**TOTAL ADD'L FEE**

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" in this space is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" in this space is less than 3, enter "3".

The "Highest Number Previously Paid For" (total or independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and suggestions for reducing this burden would be appreciated. Send them to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.
Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.
Office Action Summary

Application No. 10/782,879
Applicant(s) KANG, JUNG YONG
Examiner Jin-Cheng Wang
Art Unit 2628

Period for Reply
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHERSOEVER IS LONGER, 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 20 November 2006.
2a) ☐ This action is FINAL.
2b) ☑ This action is non-final.
3) ☐ 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
4) ☑ Claim(s) 1-7, 9-16 and 18 is/are pending in the application.
   4a) Of the above claim(s) ______ is/are withdrawn from consideration.
5) ☐ Claim(s) ______ is/are allowed.
6) ☑ Claim(s) 1-7, 9-16 and 18 is/are rejected.
7) ☐ Claim(s) ______ is/are objected to.
8) ☐ Claim(s) ______ are subject to restriction and/or election requirement.

Application Papers
9) ☐ The specification is objected to by the Examiner.
10) ☐ 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).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
   a) ☐ All  b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

      * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)
1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SD/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.
DETAILED ACTION

Response to Amendment

The amendment filed on 11/20/2006 has been entered. Claims 1 and 10 have been amended. Claims 8 and 17 have been canceled. Claims 1-7, 9-16 and 18 are pending in the application.

Response to Arguments

Applicant's arguments filed November 20, 2006 have been fully considered but are moot in view of the new ground(s) of rejection and the §112 rejection set forth in the present Office Action. As addressed below, Grigor discloses selecting a first resolution value of the graphic image to be displayed on an external display unit wherein Grigor teaches obtaining a drawing surface setting (Figs 3-4; column 4, lines 38-60) that includes the first resolution value such as the resolution 1024*768 associated with the initial drawing surface. It is understood that if there is a match between the graphic image to be displayed and the initial drawing surface setting, the graphic image is displayed in full screen mode.

Grigor discloses additionally selecting a second resolution value corresponding to a valid screen of the external display unit, said second resolution value being less than the first resolution value wherein Grigor teaches that the processing module alters one or more of the parameters including the horizontal and vertical resolutions to generate an alternative drawing surface such that the second resolution value is modified to match a valid screen size of the TV. For example, the second resolution is 720*540 (see column 4, lines 40-60).
Grigor discloses confirming a source type wherein the source type means the graphic image having different resolutions and refresh rate, e.g., the graphic image having a drawing surface setting including a resolution of 1024*768, 720 *540, 640 *480, etc. (column 4, lines 38-60). Grigor teaches a screen mode wherein he teaches determining whether each of the multiple displays includes a display mode that substantially matches the alternate drawing surface setting and the determination involves the selection of the resolution type for each display that substantially matches the alternate drawing surface setting (see Figs. 1-4; column 1, lines 55-60) in which Fig. 2 lists a set of resolution values for each display. He teaches asking if there is a match between the source resolution of the drawing surface settings and a screen mode or display mode of each of multiple displays listed in Fig. 2 that matches the selected second resolution; see Figs. 3-4 and column 5-6. He further teaches asking whether all of the resolution options have been utilized as the alternative drawing surface setting in step 64 of Fig. 3 and asking whether each of the multiple displays includes a display mode that substantially matches the newly generated alternate drawing surface setting in step 60 of Fig. 3. If there is a match, provide the images stored in the drawing surface to the multiple displays based on the drawing surface setting in step 56 of Fig. 3. Note that the screen mode refers to a display mode with a variety of display resolutions listed in Fig. 2 or the final display mode for the image such as full screen mode or in a window display mode; see column 5, lines 34-37. Grigor therefore teaches referring to both the first resolution value (full screen mode) and the second resolution value (partial screen mode).

Grigor teaches referring to the plurality of the drawing surface settings including the initial drawing setting and the current drawing setting wherein the initial drawing setting has a
first resolution value and the current drawing setting has the second resolution value. The first
resolution value may match the display mode and thus only the first resolution value is referred
to. Otherwise, the first resolution value does not match with the display mode and the second
resolution value may match with the display mode. If the current resolution value matches the
display mode, the graphic image is reconfigured. Each display would reconfigure based on the
drawing surface settings to display the image in full screen or in a window as established by the
drawing surface (column 5, lines 34-37).

Although Grigor does not explicitly teach “a valid screen size of the external display
unit”, Hodgkinson explicitly discloses a valid screen size of the external display unit. For
example, Hodgkinson discloses in Page 3-4 the shape and size of the display screen and the
switching to the different aspect ratio (switching from one display mode to another display
mode) by adjusting the height or width of the graphics image. However, if the graphic image fits
into the display resolution, it is not necessary for adjusting the height or width of the graphics
image. Hodgkinson discloses that the graphics display can be modified to take into account
changes in the formats of the video display with respect to the display screen format and web
pages can be reformatted to fit the new available display width. If the pixel aspect ratio has
changed, the graphic display is rescaled. Hodgkinson further discloses in Page 2 a full screen
option for displaying the graphic image by adjusting the format for the graphic image and asking
the display screen to change dynamically into a different display mode for the graphics
image. In this fashion, the full screen resolution and the partial screen resolution are referred to if
there is no match between the graphics image and the display screen resolution.
It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to have incorporated Hodgkinson’s invention into Grigor because Hodgkinson also teaches other claim limitations including confirming a source type on the graphic image to be displayed on the external display unit such as a television and a screen mode such as a full screen mode or a partial screen mode and Grigor at least suggests the claim limitation of a valid screen size by teaching the main horizontal and vertical resolutions of a display screen and the sub horizontal and vertical resolutions of a display screen which are less than the main horizontal and vertical resolutions of a display screen so that the graphics image can be fitted into the display device. Thus, having the combined teaching of Grigor and Hodgkinson, one of the ordinary skill in the art would have been motivated to cause the graphic display to be altered with respect to the format such that it is visible and in a preferred form (See Hodgkinson Abstract).

In response to the new claim limitation set forth in the claim 1 and similar claims, Grigor discloses referring to the plurality of the drawing surface settings including the initial drawing setting and the current drawing setting wherein the initial drawing setting has a first resolution value and the current drawing setting has the second resolution value. The first resolution value may match with the graphics image and thereby only the first resolution value is referred to. Otherwise, the first resolution value does not match with the display mode and the second resolution value may match with the display mode and thus both the first resolution value and the second resolution value are referred to. If the current resolution value matches the display mode, the graphic image is reconfigured to be displayed. Each display would reconfigure based on the
drawing surface settings to display the image in full screen or in a window as established by the
drawing surface (column 5, lines 34-37 and Fig. 3).

He teaches asking if there is a match between the source resolution of the drawing
surface settings and a screen mode of each of multiple displays listed in Fig. 2 that matches the
selected second resolution; see Figs. 3-4 and column 5-6; "asking whether all of the resolution
options have been utilized as the alternative drawing surface setting in step 64 of Fig. 3 and
asking whether each of the multiple displays includes a display mode that substantially matches
the newly generated alternate drawing surface setting in step 60 of Fig. 3, if there is a match,
provide the images stored in the drawing surface to the multiple displays based on the drawing
surface setting in step 56 of Fig. 3. Note that the screen mode refers to a display mode with a
variety of display resolutions listed in Fig. 2 or the final display mode for the image such as
full screen mode or in a window display mode (column 5, lines 34-37). Grigor teaches
referring to the first-full screen resolution values (full screen mode) and the partial-second screen
resolution (window display mode). However, if the source type of the confirmed graphics image
is a broadcast image in full screen mode, the broadcast image is necessarily displayed in the full
screen mode, which Grigor teaches the full screen mode in which the second resolution (window
mode) is not referred to.

Thus, Grigor teaches the claim limitation if the source type of the confirmed graphic
image is a source type other than a video or broadcast image or is a video or broadcast image
based on a screen mode other than a full screen mode, the processing unit refers to the first and
second resolution values, and if the source type of the confirmed graphic image is a video or
broadcast image or is a video or broadcast image based on a full screen mode, the processing unit refers only to the first resolution value.

Although Grigor does not explicitly teach “a valid screen size of the external display unit”, Hodgkinson explicitly discloses a valid screen size of the external display unit. For example, Hodgkinson discloses in Page 3-4 the shape and size of the display screen and the switching to the different aspect ratio (switching from one display mode to another display mode) by adjusting the height or width of the graphics image. It is understood that if there is a match between the graphics image to be displayed and the resolution of the display screen, no adjustment to the height or width of the graphics image is required and the graphics image is displayed in full screen mode. **Hodgkinson further discloses that the graphics display can be modified to take into account changes in the formats of the video display with respect to the display screen format and web pages can be reformatted to fit the new available display width** (the first resolution value and the second resolution value in the two display modes are referred to in order to obtain the display mode for the confirmed graphic image). If the pixel aspect ratio has changed, the graphic display is rescaled. Hodgkinson discloses in Page 2 a full screen option for displaying the graphic image by adjusting the format for the graphic image and asking the display screen to change dynamically into a different display mode for the graphics image (only the first resolution value is referred to in order to obtain the full screen option for displaying the graphic image).

Thus, Hodgkinson also teaches the claim limitation if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the processing unit refers to the
first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or broadcast image based on a full screen mode, the processing unit refers only to the first resolution value.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-7, 9-16 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claim 1 recites the claim limitation “if the source type of the confirmed graphic image...is a video or broadcast image based on a screen mode other than a full screen mode, the referring step (d) refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image..., the referring step (d) refers to the first resolution value”. The boldfaced statement includes that the referring step (d) refers to the first resolution value if the source type of the confirmed graphics image is a video or broadcast image based on any screen mode including the full screen mode and the screen mode other than the full screen mode. This is not enabled by the specification because the specification discloses that the broadcast image can be controlled by only the main-horizontal and vertical resolution value instead of the sub-horizontal and vertical resolution value.
The claim 10 is subject to the same rationale of rejection set forth in the claim 1.

The claims 11-16 and 18 depend upon the claim 10 and are rejected due to their dependency on the claim 10.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-7, 9-16 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim 1 set forth the claim limitation “if the source type of the confirmed graphic image… is a video or broadcast image based on a screen mode other than a full screen mode, the referring step (d) refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image…, the referring step (d) refers to the first resolution value”. The first “if” statement leads to the referring step (d) referring to both the first and the second resolution values. The second “if” statement leads to the referring step (d) referring to only the first resolution value. However, the second “if” statement also includes the condition set forth in the first “if” statement. Thus, this claim limitation is confusing and self-contradictory. Clarification is required.

Claim 1 also set forth the claim limitation of “second resolution value” and “first resolution value” and the claim 2 set forth the claim limitation “the first and second resolution values are horizontal and vertical resolution values”. However, applicant refers to the resolution values such as “720 x 480” pixels (See line 22, Page 6 of applicant’s specification). From the
claim limitation set forth in these claims, it is not clear whether “first resolution value” refers to just one value or two values for the horizontal and vertical resolution values. It is further not clear whether “second resolution value” refers to just one value or two values for the horizontal and vertical resolution values. Similarly comments apply to the dependent claims 3-7 and 9. Clarification is required.

The claim 10 is subject to the same rationale of rejection set forth in the claim 1.

The claims 11-16 and 18 depend upon the claim 10 and are rejected due to their dependency on the claim 10.

Claim Rejections - 35 USC § 103

The following is a quotation of 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 of this title, 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 negativized by the manner in which the invention was made.


Re Claims 1 and 10:

Grigor discloses a method for controlling a resolution of a graphic image, comprising the steps of:
(a) Selecting a first resolution value of the graphic image to be displayed on an external
display unit (e.g., obtain a drawing surface setting; Figs 3-4; column 4, lines 38-60; for example,
the first resolution value is the resolution 1024*768 associated with the initial drawing surface.);

(b) Additionally selecting a second resolution value corresponding to a valid screen size
of the external display unit, said second resolution value being less than the first resolution value
(e.g., the processing module alters one or more of the parameters including the resolution to
generate an alternative drawing surface wherein the alternative drawing surface has the second
resolution value modified to match a valid screen of the TV. For example, the second resolution
is 720*540; see column 4, lines 40-60);

(c) Confirming a source type (e.g., a drawing surface setting of the plurality of the
drawing surface settings including a resolution of 1024*768, 720 *540, 640 *480, etc.; column
4, lines 38-60) of the graphic image to be displayed on the external display unit and a screen
mode (e.g., Moreover, the cited reference teaches determining whether each of the multiple
displays includes a display mode that substantially matches the alternate drawing surface setting
wherein the determination involves the selection of the resolution type for each display that
substantially matches the alternate drawing surface setting; see Figs. 1-4; column 1, lines 55-60
wherein Fig. 2 lists a set of resolution values for each display. Selecting/determining a display
mode for each display also selects/determines a resolution value corresponding to a valid screen
of each display; see also column 5-6. The cited reference teaches asking if there is a match
between the source resolution of the drawing surface settings and a screen mode or display
mode of each of multiple displays listed in Fig. 2 that matches the selected second resolution; see
Figs. 3-4 and column 5-6; “asking whether all of the resolution options have been utilized as the
alternative drawing surface setting in step 64 of Fig. 3 and asking whether each of the multiple displays includes a display mode that substantially matches the newly generated alternate drawing surface setting in step 60 of Fig. 3, if there is a match, provide the images stored in the drawing surface to the multiple displays based on the drawing surface setting in step 56 of Fig. 3. Note that the screen mode refers to a display mode with a variety of display resolutions listed in Fig. 2 or the final display mode for the image such as full screen mode or in a window display mode; see column 5, lines 34-37);

(d) Referring to the selected first and second resolution values and reconfiguring the graphic image (Referring to the plurality of the drawing surface settings including the initial drawing setting and the current drawing setting wherein the initial drawing setting has a first resolution value and the current drawing setting has the second resolution value. The first resolution value does not match with the display mode and the second resolution value may match with the display mode. If the current resolution value matches the display mode, the graphic image is reconfigured to be displayed. Each display would reconfigure based on the drawing surface settings to display the image in full screen or in a window as established by the drawing surface; column 5, lines 34-37), according to a result of the configuration according to the determination in the step (c); see Fig. 3).

Wherein if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the processing unit refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or
broadcast image based on a full screen mode, the processing unit refers only to the first
resolution value.

Grigor discloses selecting a first resolution value of the graphic image to be displayed on
an external display unit wherein Grigor teaches obtaining a drawing surface setting (Figs 3-4;
column 4, lines 38-60) that includes the first resolution value such as the resolution 1024*768
associated with the initial drawing surface. It is understood that if there is a match between the
graphic image to be displayed and the initial drawing surface setting, the graphic image is
displayed in full screen mode.

Grigor discloses additionally selecting a second resolution value corresponding to a valid
screen of the external display unit, said second resolution value being less than the first
resolution value wherein Grigor teaches that the processing module alters one or more of the
parameters including the horizontal and vertical resolutions to generate an alternative drawing
surface such that the second resolution value is modified to match a valid screen size of the TV.
For example, the second resolution is 720*540 (see column 4, lines 40-60).

Grigor discloses confirming a source type wherein the source type means the graphic
image having different resolutions and refresh rate, e.g., the graphic image having a drawing
surface setting including a resolution of 1024*768, 720 *540, 640 *480, etc. (column 4, lines 38-
60). Grigor teaches a screen mode wherein he teaches determining whether each of the multiple
displays includes a display mode that substantially matches the alternate drawing surface setting
and the determination involves the selection of the resolution type for each display that
substantially matches the alternate drawing surface setting (see Figs. 1-4; column 1, lines 55-60)
in which Fig. 2 lists a set of resolution values for each display. He teaches asking if there is a
match between the source resolution of the drawing surface settings and a screen mode or display mode of each of multiple displays listed in Fig. 2 that matches the selected second resolution; see Figs. 3-4 and column 5-6. He further teaches asking whether all of the resolution options have been utilized as the alternative drawing surface setting in step 64 of Fig. 3 and asking whether each of the multiple displays includes a display mode that substantially matches the newly generated alternate drawing surface setting in step 60 of Fig. 3. If there is a match, provide the images stored in the drawing surface to the multiple displays based on the drawing surface setting in step 56 of Fig. 3. Note that the screen mode refers to a display mode with a variety of display resolutions listed in Fig. 2 or the final display mode for the image such as full screen mode or in a window display mode; see column 5, lines 34-37. Grigor therefore teaches referring to both the first resolution value (full screen mode) and the second resolution value (partial screen mode).

Grigor teaches referring to the plurality of the drawing surface settings including the initial drawing setting and the current drawing setting wherein the initial drawing setting has a first resolution value and the current drawing setting has the second resolution value. The first resolution value may match the display mode and thus only the first resolution value is referred to. Otherwise, the first resolution value does not match with the display mode and the second resolution value may match with the display mode. If the current resolution value matches the display mode, the graphic image is reconfigured. Each display would reconfigure based on the drawing surface settings to display the image in full screen or in a window as established by the drawing surface (column 5, lines 34-37).
Thus, Grigor teaches the claim limitation if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the processing unit refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or broadcast image based on a full screen mode, the processing unit refers only to the first resolution value.

Although Grigor does not explicitly teach “a valid screen size of the external display unit”, Hodgkinson explicitly discloses a valid screen size of the external display unit. For example, Hodgkinson discloses in Page 3-4 the shape and size of the display screen and the switching to the different aspect ratio (switching from one display mode to another display mode) by adjusting the height or width of the graphics image. However, if the graphic image fits into the display resolution, it is not necessary for adjusting the height or width of the graphics image. Hodgkinson discloses that the graphics display can be modified to take into account changes in the formats of the video display with respect to the display screen format and web pages can be reformatted to fit the new available display width. If the pixel aspect ratio has changed, the graphic display is rescaled. Hodgkinson further discloses in Page 2 a full screen option for displaying the graphic image by adjusting the format for the graphic image and asking the display screen to change dynamically into a different display mode for the graphics image. In this fashion, the full screen resolution and the partial screen resolution are referred to if there is no match between the graphics image and the display screen resolution.

Thus, Hodgkinson also teaches the claim limitation if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast
image based on a screen mode other than a full screen mode, the processing unit refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or broadcast image based on a full screen mode, the processing unit refers only to the first resolution value.

It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to have incorporated Hodgkinson's invention into Grigor because Hodgkinson also teaches other claim limitations including confirming a source type on the graphic image to be displayed on the external display unit such as a television and a screen mode such as a full screen mode or a partial screen mode and Grigor at least suggests the claim limitation of a valid screen size by teaching the main horizontal and vertical resolutions of a display screen and the sub horizontal and vertical resolutions of a display screen which are less than the main horizontal and vertical resolutions of a display screen so that the graphics image can be fitted into the display device. Thus, having the combined teaching of Grigor and Hodgkinson, one of the ordinary skill in the art would have been motivated to cause the graphic display to be altered with respect to the format such that it is visible and in a preferred form (See Hodgkinson Abstract).

Re Claims 2 and 11:

Grigor further discloses the claim limitation of the resolution value being a horizontal and vertical resolution value (see Fig. 2 and column 4, lines 38-60).

Re Claims 3 and 12:
Grigor further discloses the claim limitation of the external display unit being a television (column 2, lines 60-63 disclose the plurality of displays 24-30 may be a computer monitor, flat panel screen, high definition television, a television, LCD panel and/or any device that displays images).

Re Claims 4 and 13:

Grigor further discloses selecting any one of a plurality of first horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV (e.g., modifying the resolution; column 4, lines 40-60; column 5, lines 39-41; and altering one or more parameter of the drawing surface settings; column 3, lines 50-55 and the parameters include the horizontal and vertical resolution values; column 4, lines 38-60).

Re Claims 5 and 14:

Grigor further discloses selecting a second horizontal and vertical resolution value corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the resolution value selected at the step (a) is fully displayed within a valid screen size of the TV (each display would reconfigure based on the drawing surface settings to display the image in full screen or in a window as established by the drawing surface; column 5, lines 34-37), according to a result of the configuration according to the determination in the step (c); see Fig. 3).

Re Claims 6 and 15:

Grigor further discloses a full screen mode (the first resolution of the graphic image may be the resolution that most closely matches the drawing surface setting; column 5; and this first
resolution is controlled/selected by the program. The screen mode is the display mode of the
cited reference which matches the selected resolution, column 5, lines 34-37. If a match does not
occurs, the resolution parameter is modified so that a match can be found) and the source type
being a video image (column 3, lines 30-45).

Re Claims 7 and 16:

Grigor further discloses the video image being a video image received from a television
broadcast, cable broadcast, satellite broadcast, DVD player, VCR and/or camcorder (column 3,
lines 30-45).

Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grigor et
al. U.S. Patent No. 6,618,026 (hereinafter Grigor) in view of Hodgkinson, "Dynamic Adjustment
of on Screen graphic displays to cope with different video display and/or display screen
Patent No. 6,493,008 (hereinafter Yui).

Although Grigor and Hodgkinson are silent to the claim limitation of shifting a start point
of the graphic image controlled by the horizontal and vertical resolution value selected at the step
(b) to within a valid display period contained between horizontal sync signals, Grigor implicitly
discloses shifting a start point of the graphic image controlled by the horizontal and vertical
resolution value selected at the step (b) to within a valid display period contained between
horizontal sync signals by modifying the refresh rate and the horizontal and vertical resolution
(column 5-6).

Yui discloses the claim limitation by disclosing managing the layout of the inputted
plurality of images and changing the positions or the display position coordinates of the images
(column 12) and thereby shifting a start position of the graphic image to within a valid display period contained between horizontal sync signals (column 12).

It would have been obvious to have incorporated Yui’s changing/shifting the display position coordinates of the images into Grigor and Hodgkinson’s method because Grigor suggests modifying the display resolution of the graphic image to suit a particular display’s resolution and thereby displaying the graphic image in full screen mode or a window mode such that the displayed graphic image is shifted to within the valid display period (Grigor column 5, lines 34-37) and therefore suggesting an obvious modification.

One of the ordinary skill in the art would have been motivated to modifying the display coordinate positions to display a graphic image within the valid display area (Grigor column 5, lines 34-37, Hodgkinson Paragraph 0038, 0047 and Yui column 12, lines 45-57).

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Kee Tung can be reached on (571) 272-7794. 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).

jcw  [Signature]
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### SEARCH NOTES (INCLUDING SEARCH STRATEGY)

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Request for Continued Examination (RCE) Transmittal

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<th>Application Number</th>
<th>10/782,879-Conf. #7103</th>
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<tr>
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<td>Jung Yong KANG</td>
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<tr>
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<td>Examiner Name</td>
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<tr>
<td>Attorney Docket Number</td>
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This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 6, 1995, or to any design application.

1. Submission required under 37 CFR 1.114
   a. X Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
      i. Consider the arguments in the Appeal Brief or Reply Brief previously filed on
      ii. X Other Amendment After Final filed on September 19, 2006
   b. Enclosed
      i. Amendment/Reply
      ii. Affidavit(s)/Declaration(s)
      iii. Information Disclosure Statement (IDS)
      iv. Other

2. Miscellaneous
   a. Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _______ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
   b. Other ____________________________________________________________________

3. Fees
   The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
   a. X The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments to Deposit Account No. 02-2448. I have enclosed a duplicate copy of this sheet.
      i. X RCE fee required under 37 CFR 1.17(e)
      ii. Extension of time fee (37 CFR 1.136 and 1.17)
      iii. Other ____________________________________________________________________
   b. Check in the amount of $ ____________________________________________________________________ enclosed
   c. Payment by credit card (Form PTO-2038 enclosed)

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature: ____________________________ Date: November 20, 2006

Name (Print/Type): Esther H. Chong
Registration No.: 40,953
**FEE TRANSMITTAL**

For FY 2006

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For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

- Charge fee(s) indicated below
- Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17
- Credit any overpayments

### FEE CALCULATION

#### 1. BASIC FILING, SEARCH, AND EXAMINATION FEES

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#### 2. EXCESS CLAIM FEES

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#### 3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

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#### 4. OTHER FEE(S)

- Non-English Specification, $130 fee (no small entity discount)
- Other (e.g., late filing surcharge): 2801 Request for continued examination (RCE) (see 37 ... 395.00

**SUBMITTED BY**

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<th>Registration No (Attorney/Agent)</th>
<th>Telephone</th>
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<tr>
<td></td>
<td>Esther H. Chong</td>
<td>(703) 205-8000</td>
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## Utility Filing Fees

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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 and 1.17

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**Warnings:**

**Information:**

| 2 | Fee Worksheet (PTO-875) | fee-info.pdf | 8170 | no | 2 |

**Warnings:**

**Information:**

| Total Files Size (in bytes): | 254761 |

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/E0/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
Please find below and/or attached an Office communication concerning this application or proceeding.
Advisory Action
Before the Filing of an Appeal Brief

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

THE REPLY FILED 19 September 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires 2 months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _______. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
   b) ☐ They raise the issue of new matter (see NOTE below);
   c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See below. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _______.
6. ☐ Newly proposed or amended claim(s) _______ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _______.
   Claim(s) objected to: _______.
   Claim(s) rejected: 1-18.
   Claim(s) withdrawn from consideration: _______.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _______.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _______.
13. ☐ Other: _______.

[Signature]
SUPERVISORY PATENT EXAMINER

U.S. Patent and Trademark Office
PTOL-303 (Rev. 08-06) Advisory Action Before the Filing of an Appeal Brief Part of Paper No. 20061006
Continuation of 3(a): The amendment to claim 1 includes the new claim limitation that requires further consideration and/or search. The claim 1 set forth the new claim limitation wherein if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the referring step (d) refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or broadcast image based on a full screen mode, the referring step (d) refers only to the first resolution value.
The after-final amendment will not be entered — give

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Jung Yong KANG

Application No.: 10/782,879
Confirmation No.: 7103

Filed: February 23, 2004
Art Unit: 2628

For: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE
Examiner: J. C. Wang

AMENDMENT IN RESPONSE TO FINAL OFFICE ACTION

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

Sir:

In response to the Final Official Action mailed March 21, 2006, the response to which is hereby extended three (3) months to September 21, 2006, please amend this application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Jung Yong KANG

Application No.: 10/782,879
Confimation No.: 7103

Filed: February 23, 2004
Art Unit: 2672

For: METHOD FOR CONTROLLING
RESOLUTION OF GRAPHIC IMAGE
Examiner: J. C. Wang

ATTENTION: Refund Section
Accounting Division
OFFICE OF FINANCE

REQUEST FOR A REFUND
(IMPROPER FEES PAID - SMALL ENTITY PREVIOUSLY ESTABLISHED)

MS 16
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following documentation and remarks are respectfully submitted in connection with the above-identified application.

REMARKS

Pursuant to 37 C.F.R. § 1.28(a), applicants hereby request a refund of 50% of the Extension of Time and Notice of Appeal fees paid on September 19, 2006. Small entity status was established prior to payment of this fee when the application was filed on February 23, 2004.
Under 37 C.F.R. § 1.26(b), any request for a refund which is not based upon subsequent entitlement to small entity status must be filed with a two-month nonextendable time limit.

The Extension of Time fee in the amount of $1,020.00 was paid on September 19, 2006. It is respectfully requested that the excess fee of $510.00 be credited to Deposit Account No. 02-2448.

The Notice of Appeal fee in the amount of $500.00 was paid on September 19, 2006. It is respectfully requested that the excess fee of $250.00 be credited to Deposit Account No. 02-2448.

Favorable action on the present Request is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fee required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: OCT. 13, 2006

Respectfully submitted,

By
Esther H. Chong
Registration No.: 40,953
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

Attachment(s)
# Electronic Acknowledgement Receipt

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<td>First Named Inventor:</td>
<td>Jung Yong Kang</td>
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Jung Yong KANG

Application No.: 10/782,879
Confirmation No.: 7103

Filed: February 23, 2004
Art Unit: 2628

For: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE
Examiner: J. C. Wang

AMENDMENT IN RESPONSE TO FINAL OFFICE ACTION

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

Sir:

In response to the Final Official Action mailed March 21, 2006, the response to which is hereby extended three (3) months to September 21, 2006, please amend this application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.
AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for controlling a resolution of a graphic image comprising:

   (a) selecting a first resolution value of the graphic image to be displayed on an external display unit;

   (b) additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value;

   (c) confirming a source type on the graphic image to be displayed on the external display unit and a screen mode; and

   (d) referring to at least one from the selected first and second resolution values and reconfiguring the graphic image[[]] according to a result of the confirmation,

   wherein if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the referring step (d) refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or broadcast image based on a full screen mode, the referring step (d) refers only to the first resolution value.

2. (Previously Presented) The method as set forth in claim 1, wherein the first and second resolution values are horizontal and vertical resolution values.

3. (Previously Presented) The method as set forth in claim 1, wherein the external display unit is a television (TV).
4. (Previously Presented) The method as set forth in claim 3, wherein the step (a) is carried out by selecting any one of a plurality of first horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV.

5. (Previously Presented) The method as set forth in claim 3, wherein the step (b) is carried out by additionally selecting a second horizontal and vertical resolution value corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the resolution value selected at the step (a) is fully displayed within the valid screen size of the TV.

6. (Previously Presented) The method as set forth in claim 3, wherein the step (d) is carried out by controlling the first resolution of the graphic image on the basis of the resolution value selected at the step (a) when the source type of the confirmed graphic image is a video image and a screen mode is a full screen mode.

7. (Original) The method as set forth in claim 6, wherein the video image is a video image read and reproduced from an optical disc or a broadcast image received through a broadcast.

8. (Canceled).

9. (Previously Presented) The method as set forth in claim 5, further comprising:
(e) shifting a start point of the graphic image controlled by the second horizontal and vertical resolution value selected at the step (b) to within a valid display period contained between horizontal sync signals.

10. (Currently Amended) A system for controlling a resolution of a graphic image comprising:

an input device configured to allow a user to select a first resolution value of the graphic image to be displayed on an external display unit, and to select a second resolution value corresponding to a valid screen size of the external display unit, the second resolution value being less than the first resolution value; and

a processing unit configured to confirm a source type on the graphic image to be displayed on the external display unit and a screen mode, and to refer to at least one from the selected first and second resolution values and to reconfigure the graphic image[,,] according to a result of the confirmation,

wherein if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode, the processing unit refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or broadcast image based on a full screen mode, the processing unit refers only to the first resolution value.

11. (Previously Presented) The system as set forth in claim 10, wherein the first and second resolution values are horizontal and vertical resolution values.
12. (Previously Presented) The system as set forth in claim 10, wherein the external display unit is a television (TV).

13. (Previously Presented) The system as set forth in claim 12, wherein the first resolution values include any one of a plurality of horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV.

14. (Previously Presented) The system as set forth in claim 12, wherein the second resolution value includes a horizontal and vertical resolution value corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the resolution value is fully displayed within the valid screen size of the TV.

15. (Previously Presented) The system as set forth in claim 12, wherein the processing unit controls the resolution of the graphic image based on the first resolution value when the source type of the confirmed graphic image is a video image and a screen mode is a full screen mode.

16. (Previously Presented) The system as set forth in claim 15, wherein the video image is a video image read and reproduced from an optical disc or a broadcast image received through a broadcast.

17. (Canceled).
18. (Previously Presented) The system as set forth in claim 14, wherein the processing unit shifts a start point of the graphic image controlled by the selected second horizontal and vertical resolution value to within a valid display period contained between horizontal sync signals.
REMARKS

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

Claims 1-7, 9-16 and 18 are pending in the present application. Claims 1 and 10 have been amended and claims 8 and 17 have been canceled by the present amendment.

In the outstanding Office Action, claims 1-8 and 10-17 were rejected under 35 U.S.C. §103 (a) as unpatentable over Grigor et al. in view of Hodgkinson; and claims 9 and 18 were rejected under 35 U.S.C. §103 (a) as unpatentable over Grigor et al. in view of Hodgkinson and Yui.

Claims 1-8 and 10-17 stand rejected 35 U.S.C. §103 (a) as unpatentable over Grigor et al. in view of Hodgkinson. This rejection is respectfully traversed.

Independent claims 1 and 10 have been amended to include subject matter similar to that recited in dependent claims 8 and 17, respectively. For example, independent claim 1 is directed to a method for controlling a resolution of a graphic image, which includes (a) selecting a first resolution value of the graphic image to be displayed on an external display unit, (b) additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, in which the second resolution value is less than the first resolution value, (c) confirming a source type on the graphic image to be displayed on the external display unit and a screen mode, and (d) referring to at least one from the selected first and second resolution values and reconfiguring the graphic image, according to a result of the confirmation claim 1 has also been amended to recite that if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other
than a full screen mode, the referring step (d) refers to the first and second resolution values, and if the source type of the confirmed graphic image is a video or broadcast image or is a video or broadcast image based on a full screen mode, the referring step (d) refers only to the first resolution value. Independent claim 10 includes similar features in varying scope.

These features are supported at least by steps S19-S21 in Figure 4 and page 7, line 10 to page 8, line 1. For example, as shown in Figure 4, if the source type of the confirmed graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode (NO in S19), the referring step (d) refers to the first and second resolution values (selected in steps S13 and S15), and if the source type of the confirmed graphic image is a video or broadcast image or is a video or broadcast image based on a full screen mode (YES in S19), the referring step (d) refers only to the first resolution value (selected in step S13).

Regarding step (c) in which the source type is confirmed, the Office Action indicates the source type refers to a drawing surface setting including a resolution of 1024*768, 720*540, 640*480, etc., and cites column 4, lines 38-60 of Grigor et al. However, according to the present invention, the source type of the graphic image is interpreted as information about whether or not the graphic image is a source type other than a video or broadcast image or is a video or broadcast image based on a screen mode other than a full screen mode. Grigor et al. does not teach or suggest these features. Hodgkinson also does not teach or suggest these features.

Accordingly, it is respectfully submitted independent claims 1 and 10 and each of the claims depending therefrom are allowable.
Further, it is respectfully submitted the rejection of claims 9 and 18 under 35 U.S.C. 103(a) as unpatentable over Grigor et al. in view of Hodgkinson and Yui has also been overcome as claims 9 and 18 are dependent claims and Yui also does not teach or suggest the features recited in the corresponding independent claims.

In addition, it is respectfully requested this amendment be entered as it is believed no new issues have been raised.

If the Examiner has any questions or comments, please contact David A. Bilodeau, Reg. No. 42,325 at the offices of Birch, Stewart, Kolasch & Birch, LLP.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Dated: September 19, 2006 Respectfully submitted,

By: Esther H. Chong
Registration No.: 40,953
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Rd
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

EHC/DAB/cr1
**FEE TRANSMITTAL**

For FY 2005

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<td>J. C. Wang</td>
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<td>2628</td>
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**METHOD OF PAYMENT** (check all that apply)

- [ ] Check
- [ ] Credit Card
- [ ] Money Order
- [ ] None
- [ ] Other (please identify):

**Deposit Account**

- [x] Deposit Account Number: 02-2448
- [x] Deposit Account Name: Birch, Stewart, Kalasch & Birch, LLP

For the above-identified deposit account, the Director is hereby authorized to:
- [ ] Charge fee(s) indicated below
- [X] Charge any additional fee(s) or underpayment of fee(s) under 37 CFR 1.18 and 1.17
- [ ] Credit any overpayments

**FEE CALCULATION**

1. **BASIC FILING, SEARCH, AND EXAMINATION FEES**

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**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(a).

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**4. OTHER FEE(S)**

- [ ] Non-English Specification. $130 fee (no small entity discount)
- [X] 1401 Notice of appeal: 500.00
- [X] 1253 Extension for response within third month: 1,020.00

**SUBMITTED BY**

- Signature: [Signature]
- Registration No. (Attorney/Agent): 40,953
- Telephone: (703) 205-8000
- Date: September 19, 2006
### NOTICE OF APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

**Docket Number (Optional)**

| 2950-0290P |

**In re Application of**

Jung Yong KANG

**Application Number**

10/782,879-Conf. #7103

**Filed**

February 23, 2004

**For METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE**

**Art Unit**

2628

**Examiner**

J. C. Wang

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1))

$ 500.00

- Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is:

$ _______

- A check in the amount of the fee is enclosed.

- Payment by credit card. Form PTO-2038 is attached.

- The Director has already been authorized to charge fees in this application to a Deposit Account.

- I have enclosed a duplicate copy of this sheet.

- The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 02-2448. I have enclosed a duplicate copy of this sheet.

- A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

I am the

- [ ] applicant/Inventor.

- [ ] assignee of record of the entire interest.

- See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

- [ ] attorney or agent of record.

- Registration number 40,953

- [ ] attorney or agent acting under 37 CFR 1.34.

- Registration number if acting under 37 CFR 1.34.

- [ ] (703) 205-8000

- Telephone number

- September 19, 2006

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.

Submit multiple forms if more than one signature is required, see below.

[ ] "Total of 1 forms are submitted."
**PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)**

**FY 2005**

(Feas pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)

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<th>Docket Number (Optional)</th>
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<td>2950-0290P</td>
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**For METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE**

**Art Unit** 2628

**Examiner** J. C. Wang

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

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- [ ] One month (37 CFR 1.17(a)(1))
- [ ] Two months (37 CFR 1.17(a)(2))
- [x] Three months (37 CFR 1.17(a)(3))
- [ ] Four months (37 CFR 1.17(a)(4))
- [ ] Five months (37 CFR 1.17(a)(5))

- [ ] Applicant claims small entity status. See 37 CFR 1.27.
- [ ] A check in the amount of the fee is enclosed.
- [ ] Payment by credit card. Form PTO-2038 is attached.
- [ ] The Director has already been authorized to charge fees in this application to a Deposit Account.
- [x] The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 02-2448. I have enclosed a duplicate copy of this sheet.

I am the [ ] applicant/inventor.

- [ ] assignee of record of the entire interest. See 37 CFR 3.71.
- [x] Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).
- [ ] attorney or agent of record. Registration Number 40,953

<table>
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<tr>
<th>Signature</th>
<th>Date</th>
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<tr>
<td>Esther H. Chong</td>
<td>September 19, 2006</td>
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<tr>
<th>Typed or printed name</th>
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<tr>
<td>Esther H. Chong</td>
<td>(703) 205-8000</td>
</tr>
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</table>

**NOTE:** Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

- [ ] Total of 1 forms are submitted.
AMENDMENT TRANSMITTAL LETTER

Application No. 10782,879-Conf. #7103
Filing Date February 23, 2004
Examiner J. C. Wang
Art Unit 2628

Applicant(s): Jung Yong KANG

Invention: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

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

Transmitted herewith is an amendment in the above-identified application. The fee has been calculated and is transmitted as shown below.

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Multiple Dependent Claims (check if applicable) [ ]

Other fee (please specify): Notice of appeal: Extension for response within third month 1,520.00

TOTAL ADDITIONAL FEE FOR THIS AMENDMENT: 1,520.00

x Large Entity [ ] Small Entity

No additional fee is required for this amendment.

x Please charge Deposit Account No. 02-2448 in the amount of $ ___________________. A duplicate copy of this sheet is enclosed.

x A check in the amount of $ 1,520.00 is enclosed.

x Payment by credit card. Form PTO-2038 is attached.

x The Director is hereby authorized to charge and credit Deposit Account No. 02-2448 as described below. A duplicate copy of this sheet is enclosed.

x Credit any overpayment.

x Charge any additional filing or application processing fees required under 37 CFR 1.16 and 1.17.

Esther H. Chong
Attorney Reg. No.: 40,953

BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000

Dated: September 19, 2006
## Electronic Patent Application Fee Transmittal

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<td>First Named Inventor:</td>
<td>Jung Yong Kang</td>
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**Payment information:**

- Submitted with Payment: yes
- Payment was successfully received in RAM: $1520
- RAM confirmation Number: 553
- Deposit Account: 022448

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**Warnings:**

**Information:**

| 2 | Fee Worksheet (PTO-875) | 20060912FeeTransmittal.pdf | 74013 | no | 1 |

**Warnings:**

**Information:**

| 3 | Notice of Appeal Filed | 20060912NoticeofAppeal.pdf | 54659 | no | 1 |

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| 4 | Extension of Time       | 20060912PetitionEOT.pdf    | 59717 | no | 1 |

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| 5 | Transmittal letter      | 20060912Transmittal.pdf    | 99184 | no | 1 |

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| 6 | Fee Worksheet (PTO-875) | fee-info.pdf               | 8295  | no | 2 |

**Warnings:**

**Information:**

**Total Files Size (in bytes):** 699499
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
### PATENT APPLICATION FEE DETERMINATION RECORD

**WEE**

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**TOTAL ADD'N FEE**

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Please find below and/or attached an Office communication concerning this application or proceeding.
Office Action Summary

<table>
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<tr>
<td>10/782,879</td>
<td>KANG, JUNG YONG</td>
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<tr>
<td>Examiner</td>
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<td>Jin-Cheng Wang</td>
<td>2628</td>
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--- 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 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 the 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 result in any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 30 January 2006.
2a) This action is FINAL.
2b) This action is non-final.
3) 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

4) Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
5) Claim(s) ____ is/are allowed.
6) Claim(s) 1-18 is/are rejected.
7) Claim(s) ____ is/are objected to.
8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
10) 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).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
   a)☐ All  b)☐ Some * c)☐ None of:
   1.☐ Certified copies of the priority documents have been received.
   2.☐ Certified copies of the priority documents have been received in Application No. ____.
   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsman’s Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date ____.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date ____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: ____.
DETAILED ACTION

Response to Amendment

The amendment filed on 1/30/2006 has been entered. Claims 1-6, and 9 have been amended. Claims 10-18 have been newly added. Claims 1-18 are pending in the application.

Response to Arguments

Applicant's arguments filed January 30, 2006 have been fully considered but are moot in view of the new ground(s) of rejection. As addressed below, Grigor discloses selecting a first resolution value of the graphic image to be displayed on an external display unit wherein Grigor teaches obtaining a drawing surface setting (Figs 3-4; column 4, lines 38-60) that includes the first resolution value such as the resolution 1024*768 associated with the initial drawing surface.

Grigor discloses additionally selecting a second resolution value corresponding to a valid screen of the external display unit, said second resolution value being less than the first resolution value wherein Grigor teaches that the processing module alters one or more of the parameters including the horizontal and vertical resolutions to generate an alternative drawing surface such that the second resolution value is modified to match a valid screen size of the TV. For example, the second resolution is 720*540 (see column 4, lines 40-60).

Grigor discloses confirming a source type wherein the source type means the graphic image having different resolutions and refresh rate, e.g., the graphic image having a drawing surface setting including a resolution of 1024*768, 720*540, 640*480, etc. (column 4, lines 38-60). Grigor teaches a screen mode wherein the cited reference teaches determining whether each of the multiple displays includes a display mode that substantially matches the alternate drawing
surface setting wherein the determination involves the selection of the resolution type for each display that substantially matches the alternate drawing surface setting (see Figs. 1-4; column 1, lines 55-60) in which Fig. 2 lists a set of resolution values for each display. The cited reference teaches asking if there is a match between the source resolution of the drawing surface settings and a screen mode or display mode of each of multiple displays listed in Fig. 2 that matches the selected second resolution; see Figs. 3-4 and column 5-6. The cited reference further teaches asking whether all of the resolution options have been utilized as the alternative drawing surface setting in step 64 of Fig. 3 and asking whether each of the multiple displays includes a display mode that substantially matches the newly generated alternate drawing surface setting in step 60 of Fig. 3. If there is a match, provide the images stored in the drawing surface to the multiple displays based on the drawing surface setting in step 56 of Fig. 3. Note that the screen mode refers to a display mode with a variety of display resolutions listed in Fig. 2 or the final display mode for the image such as full screen mode or in a window display mode; see column 5, lines 34-37.

Grigor teaches referring to the plurality of the drawing surface settings including the initial drawing setting and the current drawing setting wherein the initial drawing setting has a first resolution value and the current drawing setting has the second resolution value. The first resolution value does not match with the display mode and the second resolution value may match with the display mode. If the current resolution value matches the display mode, the graphic image is reconfigured. Each display would reconfigure based on the drawing surface settings to display the image in full screen or in a window as established by the drawing surface (column 5, lines 34-37).
Although Grigor does not explicitly teach "a valid screen size of the external display unit", Hodgkinson explicitly discloses a valid screen size of the external display unit. For example, Hodgkinson discloses in Page 3-4 the shape and size of the display screen and the switching to the different aspect ratio (switching from one display mode to another display mode) by adjusting the height or width of the graphics image. Hodgkinson discloses that the graphics display can be modified to take into account changes in the formats of the video display with respect to the display screen format and web pages can be reformatted to fit the new available display width. If the pixel aspect ratio has changed, the graphic display is rescaled. Hodgkinson discloses in Page 2 a full screen option for displaying the graphic image by adjusting the format for the graphic image and asking the display screen to change dynamically into a different display mode for the graphics image.

It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to have incorporated Hodgkinson’s invention into Grigor because Hodgkinson also teaches other claim limitations including confirming a source type on the graphic image to be displayed on the external display unit such as a television and a screen mode such as a full screen mode or a partial screen mode and Grigor at least suggests the claim limitation of a valid screen size by teaching the horizontal and vertical resolutions of a display screen. Thus, having the combined teaching of Grigor and Hodgkinson, one of the ordinary skill in the art would have been motivated to cause the graphic display to be altered with respect to the format such that it is visible and in a preferred form (See Hodgkinson Abstract).

*Claim Rejections - 35 USC § 103*
The following is a quotation of 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 of this title, 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 negatived by the manner in which the invention was made.


Re Claims 1 and 10:

Grigor discloses a method for controlling a resolution of a graphic image, comprising the steps of:

(a) Selecting a first resolution value of the graphic image to be displayed on an external display unit (e.g., obtain a drawing surface setting; Figs 3-4; column 4, lines 38-60; for example, the first resolution value is the resolution 1024*768 associated with the initial drawing surface);

(b) Additionally selecting a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value (e.g., the processing module alters one or more of the parameters including the resolution to generate an alternative drawing surface wherein the alternative drawing surface has the second resolution value modified to match a valid screen of the TV. For example, the second resolution is 720*540; see column 4, lines 40-60),
(c) Confirming a source type (e.g., a drawing surface setting of the plurality of the
drawing surface settings including a resolution of 1024*768, 720 *540, 640 *480, etc.; column
4, lines 38-60) of the graphic image to be displayed on the external display unit and a screen
mode (e.g., Moreover, the cited reference teaches determining whether each of the multiple
displays includes a display mode that substantially matches the alternate drawing surface setting
wherein the determination involves the selection of the resolution type for each display that
substantially matches the alternate drawing surface setting; see Figs. 1-4; column 1, lines 55-60
wherein Fig. 2 lists a set of resolution values for each display. Selecting/determining a display
mode for each display also selects/determines a resolution value corresponding to a valid screen
of each display; see also column 5-6. The cited reference teaches asking if there is a match
between the source resolution of the drawing surface settings and a screen mode or display
mode of each of multiple displays listed in Fig. 2 that matches the selected second resolution; see
Figs. 3-4 and column 5-6; “asking whether all of the resolution options have been utilized as the
alternative drawing surface setting in step 64 of Fig. 3 and asking whether each of the multiple
displays includes a display mode that substantially matches the newly generated alternate
drawing surface setting in step 60 of Fig. 3, if there is a match, provide the images stored in the
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3. Note that the screen mode refers to a display mode with a variety of display resolutions listed
in Fig. 2 or the final display mode for the image such as full screen mode or in a window display
mode; see column 5, lines 34-37);

(d) Referring to the selected first and second resolution values and reconfiguring the
graphic image (Referring to the plurality of the drawing surface settings including the initial
drawing setting and the current drawing setting wherein the initial drawing setting has a first resolution value and the current drawing setting has the second resolution value. The first resolution value does not match with the display mode and the second resolution value may match with the display mode. If the current resolution value matches the display mode, the graphic image is reconfigured to be displayed. Each display would reconfigure based on the drawing surface settings to display the image in full screen or in a window as established by the drawing surface; column 5, lines 34-37), according to a result of the configuration according to the determination in the step (c); see Fig. 3).

Although Grigor does not explicitly teach “a valid screen size of the external display unit”, Hodgkinson explicitly discloses a valid screen size of the external display unit. For example, Hodgkinson discloses in Page 3-4 the shape and size of the display screen and the switching to the different aspect ratio (switching from one display mode to another display mode) by adjusting the height or width of the graphics image. Hodgkinson discloses that the graphics display can be modified to take into account changes in the formats of the video display with respect to the display screen format and web pages can be reformatted to fit the new available display width. If the pixel aspect ratio has changed, the graphic display is rescaled. Hodgkinson discloses in Page 2 a full screen option for displaying the graphic image by adjusting the format for the graphic image and asking the display screen to change dynamically into a different display mode for the graphics image.

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Re Claims 2 and 11:

Grigor further discloses the claim limitation of the resolution value being a horizontal and vertical resolution value (see Fig. 2 and column 4, lines 38-60).

Re Claims 3 and 12:

Grigor further discloses the claim limitation of the external display unit being a television (column 2, lines 60-63 discloses the plurality of displays 24-30 may be a computer monitor, flat panel screen, high definition television, a television, LCD panel and/or any device that displays images).

Re Claims 4 and 13:

Grigor further discloses selecting any one of a plurality of first horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV (e.g., modifying the resolution; column 4, lines 40-60; column 5, lines 39-41; and altering one or more parameter of the drawing surface settings; column 3, lines 50-55 and the parameters include the horizontal and vertical resolution values; column 4, lines 38-60).
Re Claims 5 and 14:

Grigor further discloses selecting a second horizontal and vertical resolution value corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the resolution value selected at the step (a) is fully displayed within a valid screen size of the TV (each display would reconfigure based on the drawing surface settings to display the image in full screen or in a window as established by the drawing surface; column 5, lines 34-37), according to a result of the configuration according to the determination in the step (c); see Fig. 3).

Re Claims 6 and 15:

Grigor further discloses a full screen mode (the first resolution of the graphic image may be the resolution that most closely matches the drawing surface setting; column 5; and this first resolution is controlled/selected by the program. The screen mode is the display mode of the cited reference which matches the selected resolution, column 5, lines 34-37. If a match does not occurs, the resolution parameter is modified so that a match can be found) and the source type being a video image (column 3, lines 30-45).

Re Claims 7 and 16:

Grigor further discloses the video image being a video image received from a television broadcast, cable broadcast, satellite broadcast, DVD player, VCR and/or camcorder (column 3, lines 30-45).

Re Claims 8 and 17:

Grigor and Hodgkinson further disclose a source type of the confirmed graphic image is a video image based on another screen mode rather than a full screen mode (e.g., column 5, lines
34-37 and Fig. 2 discloses a window mode rather than a full screen mode wherein the display mode most closely matches the drawing surface setting. Hodgkinson Paragraph 0038, 0041, 0044, 0047).


Although Grigor and Hodgkinson are silent to the claim limitation of shifting a start point of the graphic image controlled by the horizontal and vertical resolution value selected at the step (b) to within a valid display period contained between horizontal sync signals, Grigor implicitly discloses shifting a start point of the graphic image controlled by the horizontal and vertical resolution value selected at the step (b) to within a valid display period contained between horizontal sync signals by modifying the refresh rate and the horizontal and vertical resolution (column 5-6).

Yui discloses the claim limitation by disclosing managing the layout of the inputted plurality of images and changing the positions or the display position coordinates of the images (column 12) and thereby shifting a start position of the graphic image to within a valid display period contained between horizontal sync signals (column 12).

It would have been obvious to have incorporated Yui’s changing/shiftimg the display position coordinates of the images into Grigor and Hodgkinson’s method because Grigor
suggests modifying the display resolution of the graphic image to suit a particular display’s resolution and thereby displaying the graphic image in full screen mode or a window mode such that the displayed graphic image is shifted to within the valid display period (Grigor column 5, lines 34-37) and therefore suggesting an obvious modification.

One of the ordinary skill in the art would have been motivated to modifying the display coordinate positions to display a graphic image within the valid display area (Grigor column 5, lines 34-37, Hodgkinson Paragraph 0038, 0047 and Yui column 12, lines 45-57).

**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 Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Kee Tung can be reached on (571) 272-7794. 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).

jcw

Kee M. Tung
Primary Examiner
**Notice of References Cited**

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**NON-PATENT DOCUMENTS**

*Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages*

- **U:** Hodgkinson, "Dynamic Adjustment of on Screen graphic displays to cope with different video display and/or display screen formats", US Patent Pub. No. US 2002/0089523 A1

**Note:**

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.
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U.S. Patent and Trademark Office

Part of Paper No. 20060315
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AMENDMENT TRANSMITTAL LETTER

Docket No. 2950-0290P

Application No. 10/782,879-Conf. #7103  Filing Date February 23, 2004  Examiner J. C. Wang  Art Unit 2672

Applicant(s): Jung Yong KANG

Invention: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

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

Transmitted herewith is an amendment in the above-identified application.
The fee has been calculated and is transmitted as shown below.

CLAIMS AS AMENDED

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Multiple Dependent Claims (check if applicable) [ ]

Other fee (please specify): Extension for response within third month

TOTAL ADDITIONAL FEE FOR THIS AMENDMENT: 1,020.00

[x] Large Entity  [ ] Small Entity

No additional fee is required for this amendment.

Please charge Deposit Account No. 02-2448 in the amount of $ 1,020.00 .
A duplicate copy of this sheet is enclosed.

[x] A check in the amount of $ 1,020.00 is enclosed.

Payment by credit card. Form PTO-2038 is attached.

[x] The Director is hereby authorized to charge and credit Deposit Account No. 02-2448 as described below. A duplicate copy of this sheet is enclosed.

[x] Credit any overpayment.

[x] Charge any additional filing or application processing fees required under 37 CFR 1.16 and 1.17.

Esther H. Chong
Attorney Reg. No.: 40,953

BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000

Dated: January 30, 2006
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No.: 2950-0290P
(PATENT)

Application No.: 10/782,879
Confirmation No.: 7103
Filed: February 23, 2004
Art Unit: 2672
For: METHOD FOR CONTROLLING
RESOLUTION OF GRAPHIC IMAGE
Examiner: J. C. Wang

AMENDMENT IN RESPONSE TO NON-FINAL OFFICE ACTION

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

Sir:

In response to the Official Action mailed July 28, 2005, the response to which is hereby extended three (3) months to January 28, 2006, please amend this application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.
AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for controlling a resolution of a graphic image comprising the steps of:

   (a) selecting a first resolution value of the graphic image to be displayed on an external display unit;

   (b) additionally selecting another a second resolution value corresponding to a valid screen size of the external display unit, said second resolution value being less than the first resolution value;

   (c) confirming a source type on the graphic image to be displayed on the external display unit and a screen mode; and

   (d) referring to the selected first and second resolution values and reconfiguring the graphic image, according to a result of the confirmation.

2. (Currently Amended) The method as set forth in claim 1, wherein the first and second resolution value is a values are horizontal and vertical resolution value values.

3. (Currently Amended) The method as set forth in claim 1, wherein the external display unit is a television (TV) in which a size of a valid screen displaying a video image is smaller than that of an actual physical screen.

4. (Currently Amended) The method as set forth in claim 3, wherein the step (a) is carried out by selecting any one of a plurality of first horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV.
5. (Currently Amended) The method as set forth in claim 3, wherein the step (b) is carried out by additionally selecting a second horizontal and vertical resolution value corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the resolution value selected at the step (a) can be is fully displayed on a within the valid screen size of the TV.

6. (Currently Amended) The method as set forth in claim 3, wherein the step (d) is carried out by controlling the first resolution of the graphic image on the basis of the resolution value selected at the step (a) wherein when the source type of the confirmed graphic image is a video image and a screen mode is a full screen mode.

7. (Original) The method as set forth in claim 6, wherein the video image is a video image read and reproduced from an optical disc or a broadcast image received through a broadcast.

8. (Original) The method as set forth in claim 3, wherein the step (d) is carried out by referring to the resolution values selected at the steps (a) and (b) and controlling the resolution of the graphic image, where a source type of the confirmed graphic image is another image rather than a video or broadcast image, or is a video or broadcast image based on another screen mode rather than a full screen mode.

9. (Currently Amended) The method as set forth in claim 8, further comprising the step of:
(e) shifting a start point of the graphic image controlled by the \textit{second} horizontal and vertical resolution value selected at the step (b) to within a valid display period contained between horizontal sync signals.

10. (New) A system for controlling a resolution of a graphic image comprising:

an input device configured to allow a user to select a first resolution value of the graphic image to be displayed on an external display unit, and to select a second resolution value corresponding to a valid screen size of the external display unit, the second resolution value being less than the first resolution value; and

a processing unit configured to confirm a source type on the graphic image to be displayed on the external display unit and a screen mode, and to refer to the selected first and second resolution values and to reconfigure the graphic image, according to a result of the confirmation.

11. (New) The system as set forth in claim 10, wherein the first and second resolution values are horizontal and vertical resolution values.

12. (New) The system as set forth in claim 10, wherein the external display unit is a television (TV).

13. (New) The system as set forth in claim 12, wherein the first resolution values include any one of a plurality of horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV.
14. (New) The system as set forth in claim 12, wherein the second resolution value includes a horizontal and vertical resolution value corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the resolution value is fully displayed within the valid screen size of the TV.

15. (New) The system as set forth in claim 12, wherein the processing unit controls the resolution of the graphic image based on the first resolution value when the source type of the confirmed graphic image is a video image and a screen mode is a full screen mode.

16. (New) The system as set forth in claim 15, wherein the video image is a video image read and reproduced from an optical disc or a broadcast image received through a broadcast.

17. (New) The system as set forth in claim 10, wherein the processing unit refers to the first and second resolution values and controls the resolution of the graphic image, where a source type of the confirmed graphic image is another image rather than a video or broadcast image, or is a video or broadcast image based on another screen mode rather than a full screen mode.

18. (New) The system as set forth in claim 14, wherein the processing unit shifts a start point of the graphic image controlled by the selected second horizontal and vertical resolution value to within a valid display period contained between horizontal sync signals.
REMARKS

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

Claims 1-18 are pending in the present application. Claims 1-6 and 9 have been amended and claims 10-18 have been added by the present amendment.

In the outstanding Office Action, claims 1-8 were rejected under 35 U.S.C. § 102(e) as anticipated by Grigor et al.; and claim 9 was rejected under 35 U.S.C. § 103(a) as unpatentable over Grigor et al. in view of Yui.

Claims 1-8 stand rejected under 35 U.S.C. § 102(e) as anticipated by Grigor et al. This rejection is respectfully traversed.

Independent claim 1 has been amended to include some of the subject matter similar to that as recited in dependent claim 3. In particular, independent claim 1 includes a combination of features and is directed to a method for controlling a resolution of a graphic image including (a) selecting a first resolution value of the graphic image to be displayed on an external display unit, and (b) additionally selecting a second resolution value corresponding to a valid screen size of the external display unit. The second resolution value is less than the first resolution value. The method also includes (c) confirming a source type on the graphic image to be displayed on the external display unit and a screen mode, and (d) referring to the selected first and second resolution values and reconfiguring the graphic image, according to a result of the confirmation.

On the contrary, Grigor et al. discloses a method for generating a new drawing surface until a resolution value according a drawing surface setting matches a resolution value which an external display unit supports. In Grigor et al., a valid screen size of the external display unit is not distinguished from a physical screen size of the external display unit. Further, column 5, lines 34-37 of Grigor et al. is related to a graphic image to be displayed in an external display unit being controlled according to a display mode (a full screen mode or a window display
mode), and is not related to a graphic image being reconfigured in consideration of a second resolution value about the valid screen size.

Further, the office action indicates that the source type of the graphic image of steps (c) and (d) in claim 1 of the present invention is related to image resolutions such as the drawing surface settings including a resolution of 1024 by 768, 720 by 540, 640 by 480, etc. However, the source type of the graphic image of steps (c) and (d) corresponds to whether or not a graphic image is a video image as described in the specification. Accordingly, because Grigor et al. does not consider the valid screen size, Grigor et al. does not teach or suggest the graphic image being reconfigured in consideration of both the source type of the graphic image and the screen mode.

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

In addition, it is respectfully submitted the rejection of claim 9 under 35 U.S.C. § 103(a) noted in the Office Action has also been overcome as Yui also does not teach or suggest the features recited in amended independent claim 1.

In addition, new claims 10-18 have been added to set forth the invention in a varying scope and Applicant submits the new claims are supported by the originally filed specification. In particular, new claims 10-18 are similar to claims 1-9, but are system claims. It is respectfully submitted new claims 10-18 are allowable for similar reasons as discussed above.

If the Examiner has any questions or comments, please contact David A. Bilodeau, Reg. No. 42,325 at the offices of Birch, Stewart, Kolasch & Birch, LLP.
If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Dated: January 30, 2006

Respectfully submitted,

By [Signature]
Esther H. Chong
Registration No.: 40,953
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Rd
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

EHC/DAB/bsh/jg
PENSION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)
(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)

Application Number 10/782,879-Conf. #7103
Docket Number (Optional) 2950-0290P
Filed February 23, 2004

For METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

Art Unit 2672 Examiner J.C. Wang

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

- One month (37 CFR 1.17(a)(1)) $120
- Two months (37 CFR 1.17(a)(2)) $450
- Three months (37 CFR 1.17(a)(3)) $1020
- Four months (37 CFR 1.17(a)(4)) $1590
- Five months (37 CFR 1.17(a)(5)) $2160

- Small Entity Fee
  - $60
  - $225
  - $510
  - $795
  - $1080

- Fee
  - $120
  - $450
  - $1020
  - $1590
  - $2160

- Applicant claims small entity status. See 37 CFR 1.27.
- A check in the amount of the fee is enclosed.
- Payment by credit card. Form PTO-2038 is attached.
- The Director has already been authorized to charge fees in this application to a Deposit Account.
- The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 02-2448.

I have enclosed a duplicate copy of this sheet.

I am the

- applicant/inventor.
- assignee of record of the entire interest. See 37 CFR 3.71.
- attorney or agent of record. Registration Number
- attorney or agent under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34

Esther H. Chong
Signature

40,953
January 30, 2006
Date

(703) 205-8000

Telephone Number

NOTE: Signatures of all inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

# Total of 1 forms are submitted.
**FEE TRANSMITTAL**

For FY 2005

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**TOTAL AMOUNT OF PAYMENT** ($1,020.00)

**METHOD OF PAYMENT** (check all that apply)

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- [ ] Credit Card
- [ ] Money Order
- [ ] None
- [ ] Other (please identify):
  Birch, Stewart, Koiosch & Birch, LLP

**FEE CALCULATION**

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3. **APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

4. **OTHER FEE(S)**

- Non-English Specification, $130 fee (no small entity discount)
- Other (e.g., late filing surcharge): 1253 Extension for response within third month $1,020.00

**SUBMITTED BY**

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<th>Signature</th>
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Date: January 30, 2006

Birch, Stewart, Koiosch & Birch, LLP
# Patent Application Fee Determination Record

**Application or Docket Number:** 10/782,879

## Claims as Amended - Part II

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**Form PTO-875** (Rev. 6/01)

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Please find below and/or attached an Office communication concerning this application or proceeding.
Office Action Summary

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<td>KANG, JUNG YONG</td>
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<td>Examiner</td>
<td>Art Unit</td>
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<td>Jin-Cheng Wang</td>
<td>2672</td>
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--- 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 MONTH(S) 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 the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- 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 _____.
2a)☐ This action is FINAL.  
   2b)☒ This action is non-final.
3)☐ 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

4)☒ Claim(s) 1-9 is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are withdrawn from consideration.
6)☐ Claim(s) 1-9 is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ 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).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

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).
    a)☒ All  
    b)☐ Some  
    c)☐ None of:
    1)☐ Certified copies of the priority documents have been received.
    2)☐ Certified copies of the priority documents have been received in Application No. ______.
    3)☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date ________
4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date ________
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: ________
DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Grigor et al. U.S. Patent No. 6,618,026 (hereinafter Grigor).

Claim 1:

Grigor discloses a method for controlling a resolution of a graphic image, comprising the steps of:

(a) Selecting a resolution value of the graphic image to be displayed on an external display unit (e.g., obtain a drawing surface setting, or generate an alternative drawing surface by modifying the resolution; Figs 3-4 column 4, lines 38-60);

(b) Additionally selecting another resolution value corresponding to a valid screen of the external display unit (e.g., determine whether each of the multiple displays includes a display mode that substantially matches the alternate drawing surface setting wherein the determination involves the selection of the resolution type for each display that substantially matches the alternate drawing surface setting; see Figs. 1-4; column 1, lines 55-60 wherein Fig. 2 lists a set of resolution values for each display. Selecting/determining a display mode for each display also
selects/determines a resolution value corresponding to a valid screen of each display; see also column 5-6);

(c) Confirming a source type (e.g., the drawing surface settings include a resolution of 1024 by 768, 720 by 540, 640 by 480, etc.; column 4, lines 38-60) of the graphic image to be displayed on the external display unit and a screen mode (e.g., asking if there is a match between the source resolution of the drawing surface settings and a screen mode or display mode of each of multiple displays listed in Fig. 2; see Figs. 3-4 and column 5-6; "asking whether all of the resolution options have been utilized as the alternative drawing surface setting in step 64 of Fig. 3 and asking whether each of the multiple displays includes a display mode that substantially matches the newly generated alternate drawing surface setting in step 60 of Fig. 3, if there is a match, provide the images stored in the drawing surface to the multiple displays based on the drawing surface setting in step 56 of Fig. 3. Note that the screen mode refers to a display mode with a variety of display resolutions listed in Fig. 2 or the final display mode for the image such as full screen mode or in a window display mode; see column 5, lines 34-37);

(d) Referring to the selected resolution values and reconfiguring the graphic image (each display would reconfigure based on the drawing surface settings to display the image in full screen or in a window as established by the drawing surface; column 5, lines 34-37), according to a result of the configuration according to the determination in the step (c); see Fig. 3).

Claim 2:

Grigor further discloses the claim limitation of the resolution value being a horizontal and vertical resolution value (see Fig. 2 and column 4, lines 38-60).

Claim 3:
Grigor further discloses the claim limitation of the external display unit being a television
(column 2, lines 60-63 discloses the plurality of displays 24-30 may be a computer monitor, flat
panel screen, high definition television, a television, LCD panel and/or any device that displays
images) in which a size of a valid screen displaying a video image is smaller than that of an
actual physical screen (the final display mode for the image such as full screen mode or in a
window display mode; see column 5, lines 34-37 and Fig. 2).

Claim 4:

Grigor further discloses selecting any one of a plurality of horizontal and
vertical resolution values corresponding to horizontal and vertical frequencies capable of being
accommodated in the TV (e.g., modifying the refresh rate, the resolution; column 5, lines 39-41;
and altering one or more parameter of the drawing surface settings; column 3, lines 50-55 and
the parameters include the horizontal and vertical resolution values; column 4, lines 38-60).

Claim 5:

Grigor further discloses selecting a horizontal and vertical resolution value corresponding
to a valid horizontal and vertical frequency so that the graphic image controlled by the resolution
value selected at the step (a) can be fully displayed on a valid screen of the TV (each display
would reconfigure based on the drawing surface settings to display the image in full screen or in
a window as established by the drawing surface; column 5, lines 34-37), according to a result of
the configuration according to the determination in the step (c); see Fig. 3).

Claim 6:

Grigor further discloses a full screen mode (column 5, lines 34-37) and the source type
being a video image (column 3, lines 30-45).
Claim 7:

Grigor further discloses the video image being a video image received from a television broadcast, cable broadcast, satellite broadcast, DVD player, VCR and/or camcorder (*column 3, lines 30-45*).

Claim 8:

Grigor further discloses a source type of the confirmed graphic image is a video image based on another screen mode rather than a full screen mode (*e.g., column 5, lines 34-37 and Fig. 2 discloses a window mode rather than a full screen mode*).  

Claim Rejections - 35 USC § 103

The following is a quotation of 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 of this title, 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.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grigor et al. U.S. Patent No. 6,618,026 (hereinafter Grigor) in view of Yui U.S. Patent No. 6,493,008 (hereinafter Yui).

Although Grigor is silent to the claim limitation of shifting a start point of the graphic image controlled by the horizontal and vertical resolution value selected at the step (b) to within a valid display period contained between horizontal sync signals, Grigor implicitly discloses shifting a start point of the graphic image controlled by the horizontal and vertical resolution
value selected at the step (b) to within a valid display period contained between horizontal sync signals by modifying the refresh rate and the horizontal and vertical resolution (column 5-6).

Yui discloses the claim limitation by disclosing managing the layout of the inputted plurality of images and changing the positions or the display position coordinates of the images (column 12) and thereby shifting a start position of the graphic image to within a valid display period contained between horizontal sync signals (column 12).

It would have been obvious to have incorporated Yui’s changing/shifting the display position coordinates of the images into Grigor’s method because Grigor suggests modifying the display resolution of the graphic image to suit a particular display’s resolution and thereby displaying the graphic image in full screen mode or a window mode such that the displayed graphic image is shifted to within the valid display period (Grigor column 5, lines 34-37) and therefore suggesting an obvious modification.

One of the ordinary skill in the art would have been motivated to modifying the display coordinate positions to display a graphic image within the valid display area (Grigor column 5, lines 34-37 and Yui column 12, lines 45-57).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (571) 272-7664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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).

jcw

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600
### U.S. PATENT DOCUMENTS

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### NON-PATENT DOCUMENTS

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PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2003

CLAIMS AS FILED - PART I

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TOTAL CHARGEABLE CLAIMS: 9 minus 20 = 9
INDEPENDENT CLAIMS: 1 minus 3 = -2
MULTIPLE DEPENDENT CLAIM PRESENT: No

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

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<td>TOTAL ADDIT. FEE</td>
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* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" in this space is less than 20, enter "20."
*** If the "Highest Number Previously Paid For" in this space is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

FORM PTO-475 (Rev 10/03)

Patent and Trademark Office, U.S. Department of Commerce
**Best Available Copy**

**BIRCH, STEWART, KOLASCH & BIRCH, LLP**

P.O. Box 700 • Falls Church, Virginia 22046-0700
Telephones: (703) 255-6000 • Facsimile: (703) 255-6000

**COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT AND DESIGN APPLICATIONS**

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated next to my name that I hereby believe that I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention(s) named below and all foreign applications if filed are listed below:

**METHOD FOR CONTROLLING REPRODUCTION OF GRAPHIC IMAGE**

The specification of which is attached herein. If not attached herein, the application is identified by the attorney docket number as set forth above and/or the following:

- United States Application Number
- International Application Number
- PCT Application Number

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as well as any amendments referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 35, Code of Federal Regulations, 1.92.

I do not know and do not believe the same was ever known or used in the United States of America before my or our invention thereof or more than one year prior to the invention application. The same has not been patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to the invention application. The same has not been patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to the invention application.

I hereby claim foreign priority benefits under Title 35, United States Code, 119(a)(b) of any foreign application(s) for patent or inventor’s certificate listed below and have also identified below any foreign application(s) for patent or inventor’s certificate listed below and have also identified below any foreign application(s) for patent or inventor’s certificate listed below and have also identified below any foreign application(s) for patent or inventor’s certificate listed below.

**Priority Claimed**

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<th>(Month/Day/Year Filed)</th>
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**Insert Provisional Application(s) Information (if any)**

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**Insert Foreign Application(s) Information**

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**Insert Subsequent Information (if applicable)**

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I hereby claim the benefits under Title 35, United States Code, 119(a)(b) of any United States and/or foreign application(s), including for provisional application(s) listed below and, further, that the subject matter of each of the claims of this application is not described in the prior United States and/or foreign application(s) in the manner provided by the first paragraph of Title 35, United States Code, 119(a)(b).

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, 1.92 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

**Insert Prior U.S. Application(s) Information (if any)**

<table>
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**Insert Page 1 of 2**

**Page 2 of 2**
I hereby appoint the practitioners at CUSTOMER NO. 02292 as my attorneys or agents to prosecute this application for patent or an international application based on this application and to transact all business in connection with the resulting patent or trademark in the United States Patent and Trademark Office on instructions received from the entity who first sent the application papers to the practitioners, unless the inventor(s) or assignee provides said practitioners with written notice to the contrary.

Send Correspondence to:

BIRCH, STEWART, KOLASCH & BIRCH, LLP or CUSTOMER NO. 02292
P.O. Box 747 • Falls Church, Virginia 22040-0747
Telephone: (703) 205-8000 • Facsimile: (703) 205-8050

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 101 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

<table>
<thead>
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<th>GIVEN NAME/FAMILY NAME</th>
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<tr>
<td>Jung Yong KANG</td>
<td></td>
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Residence (City, State & Country): Kyunggi-Do, Korea

MAILING ADDRESS: 313-1401, Kochi-Maeil, Cumi-Dong, Bongjeong-Cu, Bupyeong-Gu, Incheon, 483-020, KOREA

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Residence (City, State & Country)

MAILING ADDRESS

*DATE OF SIGNATURE*
NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

Filed under 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given TWO MONTHS from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.
  A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of $65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is $65 for a Small Entity

- $65 Late oath or declaration Surcharge.

Replies should be mailed to:  
Mail Stop Missing Parts  
Commissioner for Patents  
P.O. Box 1450  
Alexandria VA 22313-1450

A copy of this notice MUST be returned with the reply.
Date: February 23, 2004
Docket No.: 2950-0290P

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

Sir:

As authorized by the inventor(s), transmitted herewith for filing is a patent application applied for on behalf of the inventor(s) according to the provisions of 37 C.F.R. § 1.41(c).

Inventor(s): Jung Yong KANG

For: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

Enclosed are:

☒ A specification consisting of thirteen (13) pages
☒ Six (6) sheet(s) of formal drawings
☒ Applicant claims small entity status under 37 C.F.R. § 1.27
☐ Applicant does not claim priority
☒ Certified copy(ies) is(are) attached hereto.
☐ Certified copy(ies) will follow.
Executed Declaration in accordance with 37 C.F.R. § 1.64 will follow

Application Data Sheet in accordance with 37 C.F.R. § 1.76

Preliminary Amendment

Information Disclosure Statement, PTO-1449 and reference(s)

Other: ____________________________

Applicant requests early publication - $300.00 publication fee


The filing fee has been calculated as shown below:

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The application transmitted herewith is filed in accordance with 37 C.F.R. § 1.41(c). The undersigned has been authorized by the inventor(s) to file the present application. The original duly executed declaration together with the surcharge will be forwarded in due course.

A check in the amount of $385.00 to cover the filing fee is enclosed.

Please charge Deposit Account No. 02-2448 in the amount of $0.00. A triplicate copy of this transmittal form is enclosed.
Please send correspondence to:

BIRCH, STEWART, KOLASCH & BIRCH, LLP or Customer No. 02292
P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By

James T. Eller, Jr., #39,538

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

Attachment(s)
Date: February 23, 2004
Docket No.: 2950-0290P

MS PATENT APPLICATION
Commissioner for Patents
P.O. Box 1450
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- **TOTAL CLAIMS**
  - 9-20= x 18 = $0.00
  - 9 = $0.00

- **INDEPENDENT CLAIMS**
  - 1-3= x 86 = $0.00
  - 43= $0.00

- **MULTIPLE DEPENDENT CLAIMS PRESENTED**
  - + $290.00
  - + $145.00

- **TOTAL**
  - $0.00
  - $385.00

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Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By

James T. Eller, Jr., #39,538

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

(Rev. 02/13/2004)
**METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE**

**BACKGROUND OF THE INVENTION**

**Field of the Invention**

The present invention relates to a method for controlling a resolution of a graphic image and more particularly to a method for controlling a resolution of a graphic image when various electronic devices such as a personal computer (PC), a set-top box (STB) equipped with an Internet function, etc. enable an external display unit such as a television (TV) or etc. to display the graphic image.

**Description of the Related Art**

Recently, there is increasing the case where an external display unit such as a television (TV) is used while being coupled to a personal computer (PC) or a set-top box (STB) equipped with an Internet function. As shown in FIG. 1, a personal computer (PC) 100 includes a central processing unit (CPU) 10, a graphic card 11, a keyboard controller 12, a disc drive 13 and an Internet module 14. Here, the PC 100 can be used while being coupled to a monitor
200 or television (TV) 300.

Where a user makes a request to change the resolution of a graphic image displayed on the monitor 200 using a keyboard or mouse, the CPU 10 sets a "display control mode" through an interface with the keyboard controller 12 coupled to a bus line. The CPU 10 confirms the graphic image's resolution value selected by a user from among the conventional monitor's resolution values, e.g., "640 x 480" pixels, "800 x 600" pixels, "1024 x 768" pixels, "1152 x 864" pixels, "1280 x 1024" pixels, "1600 x 1200" pixels, etc.

Furthermore, the CPU 10 controls the graphic card 11 so that the graphic image's resolution value selected by the user is set and stored. The graphic card 11 refers to the set resolution value of the graphic image and controls the number of horizontal and vertical pixels of the graphic image to be displayed on the monitor 200. Thus, the monitor 200 displays a graphic image of the number of pixels corresponding to the set resolution value. As shown in FIG. 2, a top portion of the monitor screen fully displays a menu bar.

On the other hand, where the PC 100 is used while being coupled to the TV 300, the CPU 10 sets a "display control mode" in response to a user request. The CPU 10 confirms the graphic image's resolution value selected by the user from among the resolution values capable of being accommodated in the conventional TV, e.g., "720 x 480" pixels, "1920 x 1080" pixels, "1280 x 720" pixels, etc.

Furthermore, the CPU 10 controls the graphic card 11 so that the graphic image's resolution value selected by the user is set and stored. The graphic card 11 refers to the set resolution value
of the graphic image and controls the number of horizontal and vertical pixels of the graphic image to be displayed on the TV 300. Thus, the TV 300 displays a graphic image of the number of pixels corresponding to the set resolution value as shown in FIG. 3.

However, where the PC is used while being coupled to the conventional TV in which a size of a valid screen displaying the conventional video image is smaller than that of an actual physical screen, part of an outer portion of the graphic image is not appropriately displayed as shown in FIG. 3. In particular, where the menu bar to be selected by the user is located at the top portion of the graphic image, there is a problem in that a menu item desired by the user cannot be selected because the menu bar cannot be displayed on the valid screen.

Furthermore, where the graphic image is displayed after the resolution of an externally received graphic image is controlled using a scaling technique in the conventional TV, there is another problem in that characters contained in the graphic image are distorted and the distorted characters are displayed.

**SUMMARY OF THE INVENTION**

Therefore, the present invention has been made in view of the above problems, and it is one object of the present invention to provide a method that can fully display a graphic image on a valid screen of an external display unit when various electronic devices such as a personal computer (PC), a set-top box (STB) equipped with an Internet function, etc. enable an external display unit such as a television (TV) or etc. to display the graphic image.
It is another object of the present invention to provide a method that can fully display important content located at an outer portion of a graphic image within a valid screen when the graphic image is displayed on a television (TV).

It is yet another object of the present invention to provide a method that can prevent an image created on the basis of a television (TV) from being biased to one side when various electronic devices such as a personal computer (PC), a set-top box (STB) equipped with an Internet function, etc. enables the TV to display the image received through a digital broadcast.

In accordance with an aspect of the present invention, the above and other objects can be accomplished by the provision of a method for controlling a resolution of a graphic image, comprising the steps of: (a) selecting a resolution value of the graphic image to be displayed on an external display unit; (b) additionally selecting another resolution value corresponding to a valid screen of the external display unit; (c) confirming a source type of the graphic image to be displayed on the external display unit and a screen mode; and (d) referring to the selected resolution values and reconfiguring the graphic image, according to a result of the confirmation.

BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects, features and other advantages of the present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:
FIG. 1 is a schematic block diagram illustrating the case where a conventional monitor or television is used while being coupled to a personal computer (PC);

FIG. 2 is an exemplary view illustrating the case where the conventional PC enables a monitor screen to display a graphic image;

FIG. 3 is an exemplary view illustrating the case where the conventional PC enables a television (TV) screen to display a graphic image;

FIG. 4 is a flowchart illustrating a method for controlling a resolution of a graphic image in accordance with a preferred embodiment of the present invention;

FIG. 5 is an explanatory view illustrating the case where a start point of a graphic image based on the controlled resolution is shifted to within a valid display period in accordance with the present invention; and

FIG. 6 is an exemplary view illustrating the case where a graphic image based on a controlled resolution is displayed on a valid screen of the TV in accordance with a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Hereinafter, preferred embodiments of a method for controlling a resolution of a graphic image in accordance with the present invention will be described in detail with reference to the annexed drawings.

The method for controlling a resolution of a graphic image in accordance with the present invention can be applied to various
electronic devices such as a personal computer (PC), a set-top box (STB) equipped with an Internet function, etc. Where the CPU 10 of the PC 100 constituted as described with reference to FIG. 1 sets a "display control mode" in response to a user request in a state in which the PC 100 is coupled to the conventional television (TV) 300, a resolution setting and controlling operation is performed so that a graphic image can be fully displayed on a valid screen of the TV 300. This will now be described in detail.

FIG. 4 is a flowchart illustrating a method for controlling a resolution of a graphic image in accordance with a preferred embodiment of the present invention.

The CPU 10 sets a "display control mode" in response to a user request (S10).

A user can select a display unit to be coupled to the PC 100 in the "display control mode". For example, where the user selects a television (TV) as the display unit in a state in which the PC 100 is coupled to the conventional TV 300 (S11), the CPU 10 displays a user menu so that any one of a plurality of main-horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the conventional TV 300 can be selected (S13). That is, the user menu displays the resolution values such as "720 x 480" pixels, "1920 x 1080" pixels, "1280 x 720" pixels, etc. Furthermore, the CPU 10 determines whether one of the main-resolution values has been selected (S14).

Then, the CPU 10 enables a selection menu necessary for controlling a sub-horizontal and vertical resolution value to be displayed so that a graphic image based on the selected
main-horizontal and vertical resolution value can be appropriately displayed within a valid screen (S15). If the user has selected the "1280 x 720" pixels as the main-horizontal and vertical resolution value, for example, "1200 x 700" pixels can be selected as the sub-horizontal and vertical resolution value. Furthermore, the CPU 10 determines whether the sub-horizontal and vertical resolution value has been additionally selected (S16). Then, the CPU 10 controls the graphic card 11 and stores the main-resolution value and the sub-resolution value (S17).

On the other hand, the CPU 10 determines whether a source of the graphic image to be displayed on the TV is a video image and determines whether a screen mode is a full screen mode if the source of the graphic image is a video image or broadcast image (S18).

For example, where a playback video image of a digital versatile disc (DVD) inserted into the disc drive 13 is outputted in the full screen mode (S19), the CPU 10 controls the graphic card 11 and enables the TV 300 to display an image in which the number of horizontal and vertical pixels is controlled in response to the main-horizontal and vertical resolution value selected by the user (S20).

However, where the TV displays a graphic image rather than a video image, or displays a video image or broadcast image in another screen mode rather than the full screen mode (S19), the graphic card 11 refers to the main-horizontal and vertical resolution value and the sub-horizontal and vertical resolution value selected by the user, and performs a resolution controlling operation for controlling the number of horizontal and vertical pixels of the graphic image to be displayed on the TV and resetting start and end points of the
controlled graphic image (S21). As shown in FIG. 5, the start point of the graphic image is shifted to within the valid screen contained between horizontal sync signals \( H_{\text{Sync}} \) according to the resolution controlling operation, and part of a rear end of the graphic image is excluded from a valid display period, such that the number of pixels of the graphic image in a horizontal direction is reduced and the number of lines of the graphic image in a vertical direction is reduced.

As shown in FIG. 6, a user selection menu bar located at a top portion of the graphic image is appropriately displayed, and the user can select a desired item. Furthermore, where a video image or broadcast image created on the basis of the conventional TV is displayed in the full screen mode, the present invention can prevent the image from being biased to one side, owing to the resolution controlling operation, without being displayed at the center of the television screen.

As described above, the present invention can be applied to a set-top box (STB) equipped with an Internet function. In this case, a user can control resolutions of various graphic images received through the Internet by referring to a main-horizontal and vertical resolution value and a sub-horizontal and vertical resolution value selected by the user, such that the graphic image can be fully displayed within the valid screen of the conventional TV. Furthermore, where a broadcast image received by the STB through a digital broadcast is displayed on the TV in a full screen mode, the broadcast image can be controlled by only the main-horizontal and vertical resolution value instead of the above-described resolution
controlling operation, and the broadcast image created on the basis of the TV can be prevented from being biased to one side of the TV screen.

As apparent from the above description, the present invention provides a method for controlling a resolution of a graphic image that can fully display important content located at an outer portion of a graphic image within a valid screen of an external display unit such as a television (TV) or etc., that can appropriately display a user selection menu bar located at an outer portion of the graphic image, and that enables the user to easily select a desired menu item. Furthermore, the method of the present invention can prevent the broadcast image created on the basis of the TV from being biased to one side of the TV screen.

Although the present invention has been described in connection with specific preferred embodiments, those skilled in the art will appreciate that various modifications, additions, and substitutions to the specific elements are possible, without departing from the scope and spirit of the present invention as disclosed in the accompanying claims.
What is claimed is:

1. A method for controlling a resolution of a graphic image, comprising the steps of:
   (a) selecting a resolution value of the graphic image to be displayed on an external display unit;
   (b) additionally selecting another resolution value corresponding to a valid screen of the external display unit;
   (c) confirming a source type of the graphic image to be displayed on the external display unit and a screen mode; and
   (d) referring to the selected resolution values and reconfiguring the graphic image, according to a result of the confirmation.

2. The method as set forth in claim 1, wherein the resolution value is a horizontal and vertical resolution value.

3. The method as set forth in claim 1, wherein the external display unit is a television (TV) in which a size of a valid screen displaying a video image is smaller than that of an actual physical screen.

4. The method as set forth in claim 3, wherein the step (a) is carried out by selecting any one of a plurality of horizontal and vertical resolution values corresponding to horizontal and vertical frequencies capable of being accommodated in the TV.

5. The method as set forth in claim 3, wherein the step (b)
is carried out by additionally selecting a horizontal and vertical resolution value corresponding to a valid horizontal and vertical frequency so that the graphic image controlled by the resolution value selected at the step (a) can be fully displayed on a valid screen of the TV.

6. The method as set forth in claim 3, wherein the step (d) is carried out by controlling the resolution of the graphic image on the basis of the resolution value selected at the step (a) where a source type of the confirmed graphic image is a video image and a screen mode is a full screen mode.

7. The method as set forth in claim 6, wherein the video image is a video image read and reproduced from an optical disc or a broadcast image received through a broadcast.

8. The method as set forth in claim 3, wherein the step (d) is carried out by referring to the resolution values selected at the steps (a) and (b) and controlling the resolution of the graphic image, where a source type of the confirmed graphic image is another image rather than a video or broadcast image, or is a video or broadcast image based on another screen mode rather than a full screen mode.

9. The method as set forth in claim 8, further comprising the step of:

(e) shifting a start point of the graphic image controlled by
the horizontal and vertical resolution value selected at the step (b) to within a valid display period contained between horizontal sync signals.
ABSTRACT OF THE DISCLOSURE

The present invention relates to a method for controlling a resolution of a graphic image. When various electronic devices such as a personal computer (PC), a set-top box (STB) equipped with an Internet function, etc. enable an external display unit such as a television (TV) or etc. to display the graphic image, a resolution of the graphic image is controlled such that the graphic image can be fully displayed on a valid screen of the external display unit. Therefore, a user selection menu bar located at an outer portion of the graphic image can be appropriately displayed and a user can easily select a desired menu item.
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FIG. 2

200 (Monitor)
FIG. 3

300 (Television)

"Menu bar is not fully displayed on valid screen"

Valid Screen

Actual Screen
FIG. 4

Start

Set display control mode

S10

Display unit = TV?

Yes

Display menu for selecting main-horizontal & vertical resolution value

S13

Main-resolution value selected?

No

No

Display menu for selecting sub-horizontal & vertical resolution value

S15

Sub-resolution value selected?

Yes

Yes

Store main-resolution value and sub-resolution value

S17

Confirm source and screen mode of graphic image to be displayed on TV

S18

Video image and full screen mode?

Yes

Control graphic image according to main-resolution value

S20

Refer to main-resolution value and sub-resolution value and control graphic image and start point

S21

No

End

S12

Perform conventional resolution setting and controlling operation
FIG. 5

Normal Video

H_Sync

(Valid screen period)

(Actual screen period)

Graphic Image

H_Sync

(Valid screen period)

(Actual screen period)
FIG. 6

300 (Television)

Valid Screen

Actual Screen
IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: Jung Yong KANG 
Appl. No.: NEW 
Filed: February 23, 2004 
For: METHOD FOR CONTROLLING RESOLUTION OF GRAPHIC IMAGE

PRELIMINARY AMENDMENT

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

February 23, 2004

Sir:

The following preliminary amendments and remarks are respectfully submitted in connection with the above-identified application.

This amendment includes: Amendments to the Specification; and Remarks.
AMENDMENTS TO THE SPECIFICATION

IN THE SPECIFICATION:

Page 1

Before line 1 of the specification, please insert the following new paragraph:

REMARKS

Claims 1-9 are pending in this application. The specification has been amended to make a cross-reference with the related foreign priority.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mr. James T. Eller, Jr. (Reg. No. 39,538) 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 Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By

James T. Eller, Jr., #39,538

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000
This is to certify that the following application annexed hereto is a true copy from the records of the Korean Intellectual Property Office.

출 원 번 호 : 10-2003-0010909
Application Number

출 원 년 월 일 : 2003년 02월 21일
Date of Application
FEB 21, 2003

출 원 인 : 주식회사 휴맥스
Applicant(s)

2004 년 01 월 09 일

COMMISSIONER
【서지사항】

【서류명】 명세서 등 보정서
【수신처】 특허청장
【제출일자】 2003.07.22
【제출인】

【명칭】 주식회사 휴맥스
【출원인코드】 1-1998-000063-1
【사건과의 관계】 출원인
【대리인】

【성명】 박래봉
【대리인코드】 9-1998-000250-7
【포괄위임등록번호】 2001-062813-4
【사건의 표시】

【출원번호】 10-2003-0010909
【출원일자】 2003.02.21
【심사청구일자】 2003.02.21
【발명의 명칭】 그래픽 이미지의 해상도 조절방법

【제출원인】

【접수번호】 1-1-2003-0059746-08
【접수일자】 2003.02.21
【보정할 서류】 명세서등
【보정할 사항】

【보정대상항목】 별지와 같음
【보정방법】 별지와 같음
【보정내용】 별지와 같음
【취지】 특허법 시행규칙 제13조, 실용신안법 시행규칙 제8조의 규정에 의하여 위와 같이 제출합니다. 대리인 박래봉 (인)

【수수료】

【보정료】 0 원
【추가심사청구료】 0 원
【기타 수수료】 0 원
【합계】 0 원
【보정대상항목】식별번호 27

【보정방법】정정

【보정내용】

예를 들어, 상기 사용자 메뉴에는 일반 텔레비전에서 수용할 수 있는 '720 x 480 픽셀', '1920 x 1080 픽셀', '1280 x 720 픽셀'의 해상도 값이, 사용자의 선택에 의해 표시될 수 있으며, 상기 셔피유(10)에서는, 상기 해상도 값을 중, 어느 하나가 선택 지정되는 경우, 그 해상도 값을 확인(S14)함과 아울러, 상기 셔피유(11)에서는, 일반 텔레비전의 유효 화면 내에 그래픽 이미지가 정상 표시될 수 있도록 하기 위한 서브 수평 및 수직 해상도(Sub_Horizontal & Vertical Resolution) 선택 메뉴를 표시하게 되는 데(S15), 구체적인 예로서, 사용자가 메인 수평 및 수직 해상도를 '1280 x 720 픽셀'로 선택 지정한 이후, 서브 수평 및 수직 해상도를 다시 조정하여, 그래픽 이미지의 해상도 값을 '1200 x 700 픽셀'로 최종 조정할 수 있게 된다.

【보정대상항목】식별번호 28

【보정방법】정정

【보정내용】

한편, 상기와 같이 사용자가, 일반 텔레비전의 유효 화면 구간 내에 그래픽 이미지가 정상 표시될 수 있도록 하기 위한 유효 수평 및 수직 주파수에 상응하는 임의의 서브 수평 및 수직 해상도의 값을 추가 설정하게 되면, 상기 셔피유(10)에서는, 상기와 같은 과정을 통해 추가 설정되는 서브 수평 및 수직 해상도의 값을 확인한 후
(S16), 상기 그래픽 카드(11)를 동작 제어하여, 사용자가 설정한 메인 및 서브 해상도 값은 설정 저장하게 된다.

【보정대상항목】 식별번호 29
【보정방법】 정정
【보정내용】

그리고, 상기 그래픽 카드(11)에서는, 상기 텔레비전으로 출력 표시될 그래픽 이미지의 해상도를, 사용자가 설정한 메인 수평 및 수직 해상도의 값과 서브 수평 및 수직 해상도 값을 참조하여, 그에 상응하는 수평 및 수직 픽셀 수, 예를 들어 '1200 x 700 픽셀'의 그래픽 이미지가, 텔레비전의 유효 화면에 정상 표시될 수 있도록, 디스플레이될 그래픽 이미지의 시작 포인트 및 끝 포인트를 제 설정하게 되는 데, 도 5에 도시한 바와 같이, 그래픽 이미지의 시작 포인트를 유효 화면 구간 내로 시프트하고, 그래픽 이미지의 후단 일부분을 유효 화면 구간 내에서 배제시키게 되므로, 수평 방향으로는, 그래픽 이미지의 픽셀 수가 작아지고, 수직 방향으로는 라인 수가 작아지도록 하는 일련의 해상도 조절 동작을 수행하게 된다(S17).

【보정대상항목】 식별번호 30
【보정방법】 정정
【보정내용】

이에 따라, 상기 텔레비전을 통해 출력 표시되는 그래픽 이미지는, 예를 들어 도 6에 도시한 바와 같이, 수평 동기(H_Sync)들 사이에 포함되는 유효 화면 구간 내에 정상 표시될 수 있도록 조절되므로, 상기 그래픽 이미지의 상단 부분에 존재하는 사용
자 선택 메뉴 바가 정상적으로 화면 표시되어, 사용자가 원하는 선택 항목을 선택 지정할 수 있게 된다.

【보정대상항목】도 5

【보정방법】정정

【보정내용】

【도 5】
[서지사항]

【서류명】 특허출원서
【권리구분】 특허
【수신처】 특허청장
【창조번호】 0005
【제출일자】 2003.02.21
【발명의 명칭】 그래픽 이미지의 해상도 조절방법
【발명의 영문명칭】 Method for controlling a resolution of graphic image
【출원인】
【명칭】 주식회사 휴맥스
【출원인코드】 1-1998-000063-1
【대리인】
【성명】 박래봉
【대리인코드】 9-1998-000250-7
【포괄위임등록번호】 2001-062813-4
【발명자】
【성명의 국문표기】 강중용
【성명의 영문표기】 KANG, Jung Yong
【주민등록번호】 651121-1025716
【우편번호】 463-500
【주소】 경기도 성남시 분당구 구미동 까치마을 312-1401
【국적】 KR
【심사청구】 청구
【취지】 특허법 제42조의 규정에 의한 출원, 특허법 제60조의 규정에 의한 출원심사를 청구합니다. 대리인 박래봉 (인)

【수수료】
【기본출원료】 20 면 29,000 원
【가산출원료】 0 면 0 원
【우선권주창료】 0 건 0 원
【심사청구료】 8 항 365,000 원
【합계】 394,000 원
【감면사유】 중소기업
【감면후 수수료】 197,000 원
【첨부서류】
1. 요약서·명세서(도면)_1통
본 발명은, 그래픽 이미지의 해상도 조절방법에 관한 것으로, 개인용 컴퓨터(PC), 또는 인터넷 기능을 포함 구비된 셋탑 박스(STB) 등과 같은 다양한 전자기기에서, 텔레비전 등과 같은 외부 연결기기로, 그래픽 이미지를 출력 표시하는 경우, 상기 그래픽 이미지의 해상도를 가변 조절하여, 상기 외부 연결기기의 유효 화면에, 그래픽 이미지가 모두 표시될 수 있도록 함으로써, 그래픽 이미지의 외곽 부분에 존재하는 사용자 선택 메뉴 바 등과 같은 다양한 메뉴 화면을, 외부 연결기기의 유효 화면 내에 정상적으로 모두 출력 표시할 수 있게 되어, 사용자가 원하는 메뉴 항목을 용이하게 선택 지정할 수 있게 되는 매우 유용한 발명인 것이다.

【대표도】
도 4

【사전어】
그래픽 이미지, 개인용 컴퓨터, 셋탑 박스, 텔레비전, 메인 수평 및 수직 해상도, 서브 수평 및 수직 해상도, 사용자 선택 메뉴
【명세서】

【발명의 명칭】
그래픽 이미지의 해상도 조절방법 {Method for controlling a resolution of graphic image}

【도면의 간단한 설명】

도 1은 일반적인 모니터 또는 텔레비전이 개인용 컴퓨터와 연결 사용되는 실시예를 개략
적으로 도시한 것이고,

도 2는 일반적인 개인용 컴퓨터에서의 그래픽 이미지가 모니터 화면을 통해 출력 표시되
는 실시예를 도시한 것이고,

도 3은 일반적인 개인용 컴퓨터에서의 그래픽 이미지가 텔레비전 화면을 통해 출력 표시
되는 실시예를 도시한 것이고,

도 4는 본 발명에 따른 그래픽 이미지의 해상도 조절방법에 대한 실시예의 동작 흐름도
를 도시한 것이고,

도 5는 본 발명에 의해 해상도가 가변 조절된 그래픽 이미지의 과형을 개념적으로 도시
한 것이고,

도 6은 본 발명에 의해 해상도가 가변 조절된 그래픽 이미지가 텔레비전의 유효 화면을
통해 출력 표시되는 실시예를 도시한 것이다.

※ 도면의 주요부분에 대한 부호의 설명
10 : 쌍꺼풀 11 : 그래픽 카드
12 : 키보드 컨트롤러 13 : 디스크 드라이브
14 : 인터넷 모듈 100 : 개인용 컴퓨터
200 : 모니터 300 : 텔레비전

【발명의 상세한 설명】
【발명의 목적】
【발명이 속하는 기술분야 및 그 분야의 종래기술】

본 발명은, 개인용 컴퓨터(PC), 또는 인터넷 기능이 포함 구비된 셋탑 박스(STB: Set Top Box) 등과 같은 다양한 전자기기에서, 텔레비전 등과 같은 외부 연결기기의 화면을 통해 그래픽 이미지를 출력 표시하는 경우, 상기 그래픽 이미지의 해상도를 가변 조절하기 위한 그래픽 이미지의 해상도 조절방법에 관한 것이다.

최근에는, 텔레비전과 같은 외부 연결기기를, 개인용 컴퓨터, 또는 인터넷 기능이 구비된 셋탑 박스 등에 연결 사용하는 사례가 급증하고 있는 데, 예를 들어 도 1에 도시한 바와 같이, 쌍꺼풀(10), 그래픽 카드(11), 키보드 컨트롤러(12), 그리고 디스크 드라이브(13) 및 인터넷 모듈(14) 등이 포함 구성되는 개인용 컴퓨터(100)는, 모니터(200) 또는 텔레비전(300)과 연결 사용될 수 있다.

한편, 상기 쌍꺼풀(10)에서는, 예를 들어 버스 라인을 통해 연결 접속된 키보드 컨트롤러(12)와의 인터페이스를 통해, 사용자가 요청한 '디스플레이 조절 모드'를 설정함과 아울러,
키보드 또는 마우스 등을 이용하여, 사용자가 선택 지정하는 그래픽 이미지의 해상도 (Resolution) 값을 예를 들어 '640 x 480 픽셀', '800 x 600 픽셀', '1024 x 768 픽셀', '1152 x 864 픽셀', '1280 x 1024 픽셀', '1600 x 1200 픽셀' 중 어느 하나의 해상도 값을 확인하게 된다.

그리고, 상기 씨피유(10)에서는, 상기 그래픽 카드(11)를 동작 제어하여, 사용자가 선택 지정한 그래픽 이미지의 해상도 값을 설정 및 저장하게 되고, 상기 그래픽 카드(11)에서는, 상기와 같은 과정을 통해 설정된 그래픽 이미지의 해상도 값을 참조하여, 상기 모니터(200)를 통해 출력 표시될 그래픽 이미지의 수평 및 수직 픽셀 수를 가변 조절하게 된다.

이에 따라, 상기 모니터(200)에서는, 도 2에 도시한 바와 같이, 상기 해상도 값에 상응하는 픽셀 수의 그래픽 이미지가 출력 표시되는 데, 예를 들어 상기 모니터 화면의 상단 부분에는, 사용자가 선택 지정할 수 있는 메뉴 바(Menu Bar) 등이 출력 표시된다.

한편, 상기 개인용 컴퓨터(100)는, 상기 텔레비전(300)과 연결 사용될 수 있으며, 상기 씨피유(10)에서는, 사용자의 요청에 의해 '디스플레이 조절 모드'를 설정함과 아울러, 키보드 또는 마우스 등을 이용하여, 사용자가 선택 지정하는 그래픽 이미지의 해상도 값을, 예를 들어, 일반 텔레비전에서 수용할 수 있는 '720 x 480 픽셀', '1920 x 1080 픽셀', '1280 x 720 픽셀', '720 x 480 픽셀' 중 어느 하나의 해상도 값을 확인하게 된다.

그리고, 상기 씨피유(10)에서는, 상기 그래픽 카드(11)를 동작 제어하여, 사용자가 선택 지정한 그래픽 이미지의 해상도 값을 설정 및 저장하게 되고, 상기 그래픽 카드(11)에서는, 상기와 같은 과정을 통해 설정된 그래픽 이미지의 해상도 값을 참조하여, 상기 텔레비전(300)을 통해 출력 표시될 그래픽 이미지의 수평 및 수직 픽셀 수를 가변 조절함으로써, 상기 텔레비전
(300)에는, 도 3에 도시한 바와 같이, 상기 해상도 값에 상응하는 픽셀 수의 그래픽 이미지가 출력 표시된다.

그러나, 일반적인 비디오 영상이 출력 표시되는 유효 화면의 크기가, 물리적인 실제 화면의 크기 보다, 작은 화면 크기를 갖는 일반 텔레비전이, 상기 개인용 컴퓨터에 연결 사용되는 경우, 도 3에 도시한 바와 같이, 그래픽 이미지의 외곽 일부분이 유효 화면 내에 정상 표시되지 않기 때문에, 예를 들어 그래픽 이미지의 상단 부분에 존재하는 사용자 선택 메뉴 바가 표시되지 않아, 사용자가 원하는 메뉴 항목을 선택 지정할 수 없게 되는 문제점이 발생하게 된다.

또한, 일반 텔레비전에서, 외부로부터 수신되는 그래픽 이미지의 해상도를, 스케일링 (Scaling) 방식을 이용하여 가변 조절한 후, 디스플레이하는 경우에는, 그래픽 이미지에 포함된 문자 등이 일그러져 보이는 문제점이 발생하게 된다.

【발명이 이루고자 하는 기술적 과제】

따라서, 본 발명은 상기와 같은 문제점을 해결하기 위하여 창작된 것으로서, 개인용 컴퓨터(PC), 또는 인터넷 기능이 포함 구비된 셋탑 박스(STB) 등과 같은 다양한 전자기기에서, 텔레비전 등과 같은 외부 연결기기로, 그래픽 이미지를 출력 표시하는 경우, 상기 외부 연결기기의 유효 화면에, 그래픽 이미지가 모두 표시될 수 있도록 하기 위한 그래픽 이미지의 해상도 조절방법을 제공하는 데, 그 목적이 있는 것이다.
【발명의 구성 및 작용】

상기와 같은 목적을 달성하기 위한 본 발명에 따른 그래픽 이미지의 해상도 조절방법은, 외부 연결기기의 화면을 통해 출력 표시될 그래픽 이미지에 대한 메인 수평 및 수직 해상도의 값을 선택 설정하는 1단계; 상기 외부 연결기기의 유효 화면에, 그래픽 이미지가 모두 표시될 수 있도록 하기 위한 서브 수평 및 수직 해상도의 값을 추가 설정하는 2단계; 및 상기 선택 설정된 메인 수평 및 수직 해상도의 값과, 상기 추가 설정된 서브 수평 및 수직 해상도의 값을 참조하여, 상기 외부 연결기기의 화면을 통해 출력 표시될 그래픽 이미지의 해상도를 가변 조절하는 3단계를 포함하여 이루어지는 것을 특징으로 한다.

이하, 본 발명에 따른 그래픽 이미지의 해상도 조절방법에 대한 바람직한 실시예에 대해, 첨부된 도면을 참조하여 상세히 설명한다.

우선, 본 발명에 따른 그래픽 이미지의 해상도 조절방법은, 개인용 컴퓨터, 또는 인터넷 기능을 구비된 셱탑 박스 등과 같은 다양한 전자기기에 적용될 수 있는 것으로, 예를 들어, 도 1을 참조로 전술한 바와 같이 구성되는 개인용 컴퓨터(100)의 셱피유(10)에서는, 일반 텔레비전(300)이 연결 접속된 상태에서, 사용자의 요청에 따라, '디스플레이 조절 모드'를 설정하는 경우, 상기 텔레비전의 유효 화면에, 그래픽 이미지가 모두 표시될 수 있도록 하기 위한 해상도 설정 및 조절 동작을 수행하게 되는 데, 이에 대해 상세히 설명하면 다음과 같다.
도 4는 본 발명에 따른 그래픽 이미지의 해상도 조절방법에 대한 실시예의 동작 흐름도를 도시한 것으로, 상기 씨피유(10)에서는, 상기 키보드 컨트롤러(12)와의 인터페이스를 통해, 사용자 요청에 따른 '디스플레이 조절 모드'를 설정하는 일련의 동작 수행하게 된다(S10).

한편, 사용자는, 상기 디스플레이 조절모드에서, 개인용 컴퓨터(100)와 연결 사용될 디스플레이 기기를 선택 지정할 수 있게 되는 데, 예를 들어 일반 텔레비전(300)을 개인용 컴퓨터(100)에 연결 접속시킨 상태에서, 사용자가 디스플레이 기기를 텔레비전으로 선택 지정하는 경우(S11), 상기 씨피유(10)에서는, 일반 텔레비전에서 수용할 수 있는 수평 및 수직 주파수에 상응하는 다수의 메인 수평 및 수직 해상도(Main_Horizontal & Vertical Resolution) 값을 선택 지정하기 위한 사용자 메뉴를 표시하게 된다(S13).

예를 들어, 상기 사용자 메뉴에는 일반 텔레비전에서 수용할 수 있는 '720 x 480 픽셀', '1920 x 1080 픽셀', '1280 x 720 픽셀'의 해상도 값이, 사용자의 선택에 의해 표시될 수 있으며, 상기 씨피유(10)에서는, 상기 해상도 값들 중, 어느 하나가 선택 지정되는 경우, 그 해상도 값을 확인(S14)함과 아울러, 상기 씨피유(11)에서는, 일반 텔레비전의 유효 화면 내에 그래픽 이미지가 모두 표시될 수 있도록 하기 위한 서브 수평 및 수직 해상도(Sub_Horizontal & Vertical Resolution) 선택 메뉴를 표시하게 된다(S15).

한편, 사용자는, 도 5에 도시한 바와 같이, 일반 텔레비전의 유효 화면 구간 내에 그래픽 이미지가 모두 표시될 수 있도록 하기 위한 유효 수평 및 수직 주파수에 상응하는 임의의 서브 수평 및 수직 해상도의 값을 추가 설정하게 되며, 상기 씨피유(10)에서는, 상기와 같은 과정을 통해 추가 설정되는 서브 수평 및 수직 해상도의 값을 확인한 후(S16), 상기 그래픽 카드(11)를 동작 제어하여, 사용자가 설정한 메인 및 서브 해상도 값을 설정 저장하게 된다.
그리고, 상기 그래픽 카드(11)에서는, 상기 텔레비전으로 출력 표시될 그래픽 이미지의 해상도를, 사용자가 설정한 메인 수평 및 수직 해상도의 값을과 서브 수평 및 수직 해상도 값을 참조하여, 그에 상응하는 수평 및 수직 픽셀 수를 갖는 그래픽 이미지가, 텔레비전의 유효 화면에 모두 표시될 수 있도록 하는 일련의 해상도 조절 동작을 수행하게 된다.(S17).

이에 따라, 상기 텔레비전을 통해 출력 표시되는 그래픽 이미지는, 예를 들어 도 6에 도시한 바와 같이, 수평 동기(H_Sync)를 사이에 포함하는 유효 화면 구간 내에 모두 표시될 수 있도록 조절되므로, 상기 그래픽 이미지의 상단 부분에 존재하는 사용자 선택 메뉴 바가 정상적으로 화면 표시되어, 사용자가 원하는 선택 항목을 선택 지정할 수 있게 된다.

한편, 상기 셀피유(10)에서는, 상기 그래픽 카드(11)를 동작 제어하여, 상기 그래픽 이미지의 해상도를 가변 조절함과 아울러, 상기 텔레비전으로 출력 표시되는 그래픽 이미지 또는 비디오 영상의 소스(Source) 유형을 감지 확인하는 일련의 동작을 수행하게 된다.(S18).

예를 들어, 상기 디스크 드라이브(13)에 삽입 안착된 디브이디(DVD)의 재생 비디오 영상이 출력되는 경우, 상기 셀피유(10)에서는, 상기 그래픽 카드(11)를 동작 제어하여, 상기와 같은 해상도 조절 동작을 자동으로 중지시키게 된다.(S20).

이에 따라, 일반 텔레비전을 기준으로 제작(Authoring) 또는 기록된 디브이디의 비디오 영상이, 상기 해상도 조절 동작에 의해 왜곡되는 것을 방지할 수 있게 된다.

그리고, 전술한 바와 같이, 본 발명은 인터넷 기능이 구비된 셋탑 박스에 적용될 수 있으며, 이 경우, 인터넷을 통해 수신되는 다양한 그래픽 이미지들의 해상도를, 사용자가 설정한 메인 수평 및 수직 해상도 값과 서브 수평 및 수직 해상도 값을 참조하여 가변 조절함으로써, 일반 텔레비전의 유효 화면에 그래픽 이미지를 모두 표시하게 된다.
또한, 상기 셋탑 박스에서, 디지털 방송을 통해 수신되는 방송 영상을 텔레비전으로 출력 표시하는 경우에는, 상기 해상도 조절 동작을 자동으로 중지하여, 텔레비전을 기준으로 제작된 방송 영상이, 상기 해상도 조절 동작에 의해 왜곡되는 것을 방지할 수 있게 된다.

이상, 전술한 본 발명의 바람직한 실시에는, 예시의 목적을 위해 개시된 것으로, 당연하더라도, 이하 참조된 특허청구범위에 개시된 본 발명의 기술적 사상과 그 기술적 범위 내에서, 또 다른 다양한 실시예들을 개량, 변경, 대체 또는 부가 등이 가능할 것이다.

【발명의 효과】

상기와 같이 구성 및 이루어지는 본 발명에 따른 그래픽 이미지의 해상도 조절방법은, 개인용 컴퓨터(PC), 또는 인터넷 기능이 포함 구비된 셋탑 박스(STB) 등과 같은 다양한 전자기기에서, 텔레비전 등의 같은 외부 연결기기로, 그래픽 이미지를 출력 표시하는 경우, 상기 그래픽 이미지의 해상도를 가변 조절하여, 상기 외부 연결기기의 유효 화면에, 그래픽 이미지가 모두 표시될 수 있도록 함으로써, 그래픽 이미지의 외판 부분에 존재하는 사용자 선택 메뉴 바등과 같은 다양한 메뉴 화면을, 외부 연결기기의 유효 화면 내에 정상적으로 모두 출력 표시할 수 있게 되어, 사용자가 원하는 메뉴 항목을 용이하게 선택 지정할 수 있게 되는 매우 유용한 발명인 것이다.
【특허청구범위】

【청구항 1】

외부 연결기기의 화면을 통해 출력 표시될 그래픽 이미지에 대한 해상도 값을 선택 설정하는 1단계;

상기 외부 연결기기의 유효 화면에 일치하는 해상도 값을 추가 설정하는 2단계; 및 상기 설정된 해상도 값을 이용, 상기 외부 연결기기의 화면을 통해 출력 표시될 그래픽 이미지를 재구성하는 3단계를 포함하여 이루어지는 것을 특징으로 하는 그래픽 이미지의 해상도 조절방법.

【청구항 2】

제 1항에 있어서,

상기 해상도 값은, 수평 해상도와 수직 해상도 값인 것을 특징으로 하는 그래픽 이미지의 해상도 조절방법.

【청구항 3】

제 1항에 있어서,

상기 외부 연결기기로, 비디오 영상이 출력 표시되는 유효 화면의 크기가, 물리적인 실제 화면의 크기보다, 작은 화면 크기를 갖는 텔레비전인 것을 특징으로 하는 그래픽 이미지의 해상도 조절방법.

【청구항 4】

제 3항에 있어서,
상기 1단계는, 상기 텔레비전에서 수용할 수 있는 수평 및 수직 주파수에 상응하는 다수의 메인 수평 및 수직 해상도 값들 중, 어느 하나를 선택 설정하는 것을 특징으로 하는 그래픽 이미지의 해상도 조절방법.

【청구항 5】

제 3항에 있어서,

상기 2단계는, 상기 선택 설정된 해상도의 값에 의해 조절된 그래픽 이미지가, 상기 텔레비전의 유호 화면에 모두 표시될 수 있는 유호 수평 및 수직 주파수에 상응하는 임의의 서브 수평 및 수직 해상도의 값을 추가 설정하는 것을 특징으로 하는 그래픽 이미지의 해상도 조절 방법.

【청구항 6】

제 1항에 있어서,

상기 3단계는, 상기 외부 연결기기의 화면을 통해 출력 표시될 소오스 영상의 유형에 따라, 상기 해상도 조절동작을 선택적으로 수행하는 것을 특징으로 하는 그래픽 이미지의 해상도 조절방법.

【청구항 7】

제 6항에 있어서,

상기 3단계는, 상기 소오스 영상의 유형이, 광디스크로부터 독출 재생되는 비디오 영상이거나, 또는 디지털 방송을 통해 수신된 비디오 영상인 경우, 상기 해상도 조절동작을 생략하는 것을 특징으로 하는 그래픽 이미지의 해상도 조절방법.
【참문항 8】

제 7항에 있어서,

상기 3단계는, 상기 소오스 영상의 유형이, 개인용 컴퓨터에서 신호 처리된 그래픽 이미지이거나, 또는 인터넷을 통해 수신되는 그래픽 이미지인 경우, 상기 해상도 조절동작을 수행 하는 것을 특징으로 하는 그래픽 이미지의 해상도 조절방법.
【도면】

【도 1】

100 (PC)  

200 (Monitor)  

300 (Television)  

CPU 10  

Graphic Card 11  

Keyboard Controller 12  

Disc Drive 13  

Internet Module 14  

Key In  

Mouse
【도 2】

200 (Monitor)
【도 3】

300 (Television)

"menu bar no display"

유효 화면

실제 화면
【도 4】

시작

디스플레이 조절 모드 설정

디스플레이 기기 = TV ?

YES

메뉴 설정 및 수직 초상도 선택 메뉴 표시

메뉴 선택 확인 ?

NO

NO

YES

서브 수평 및 수직 초상도 선택 메뉴 표시

메뉴 선택 확인 ?

YES

메인 & 서브 초상도 설정 및 그레피 이미지 초상도 기법 조절

그래피 이미지 또는 비디오 영상의 소모스 유형 점검 확인

비디오 영상 ?

NO

YES

해상도 기법 조절능력 자동 품지

끝
【도 5】

Normal Video

Graphic Image

H_Sync

(유효 화면 구간)

(실제 화면 구간)

(유효 화면 구간)

(실제 화면 구간)
300 (Television)
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* If the difference in column 1 is less than zero, enter "0" in column 2.

** If the "Highest Number Previously Paid For" in this space is less than 20, enter "20."
*** If the "Highest Number Previously Paid For" in this space is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.